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**MONITORING THE FUTURE**  
**NATIONAL SURVEY RESULTS ON DRUG USE, 1975-2002**

Volume I  
Secondary School Students

by

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## Chapter 1

# INTRODUCTION

The use of illicit drugs, tobacco, and alcohol by American young people has been an important and prominent problem for the past third of a century. Since the illicit drug epidemic originally blossomed in the 1960s, many new substances have come onto the national scene, while only a few have receded from it. And there have been important changes in the levels of use among youth and young adults in virtually all of the substance use categories, including alcohol and cigarettes.

For most of this interval (since 1975) the Monitoring the Future project has provided the nation with an important window through which to view these rapidly changing problems and thus enabled the nation to gain a better understanding of their changing nature and some of the dynamics that explain them. This series of annual monographs has been the primary vehicle for disseminating many of the epidemiological findings from the study, and the monographs have grown substantially over the years in both coverage and size.

This latest two-volume monograph reports the results of the 28th (2002) national survey of drug use and related attitudes and beliefs among American high school seniors, the 23rd such survey of American college students—and adults through age 40—and the 12th such survey of eighth- and tenth-grade students. Results from the secondary school samples of eighth, tenth, and twelfth graders are presented in Volume I. It is preceded by an advance summary of its key findings in *Monitoring the Future National Results on Adolescent Drug Use: Overview of Key Findings, 2002*.<sup>1</sup> The latter report, which contains a short section on each of the major classes of drugs under study, can be viewed on the Web at <http://www.monitoringthefuture.org> or obtained free of charge by contacting the authors at the Institute for Social Research, The University of Michigan, Ann Arbor, Michigan, 48106-1248. Results from college students and adults (up to age 40) are reported in Volume II, which is usually published a few months after Volume I.

*Monitoring the Future: A Continuing Study of American Youth* is conducted at the University of Michigan's Institute for Social Research and has been funded since its inception through a series of investigator-initiated research grants from the National Institute on Drug Abuse. In the early years the study was often called the National High School Senior Survey because each year since 1975 a representative sample of all seniors in public and private high schools in the coterminous United States was surveyed. However, now the study also surveys (a) representative samples of eighth- and tenth-grade students, (b) representative samples of adults through age 40 from previous high school graduating classes, who are administered follow-up surveys by mail, and (c) representative samples of American college students one to four years past high school, who are a part of these follow-up samples.

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<sup>1</sup>Johnston, L. D., O'Malley, P. M., & Bachman, J. G. (2003). *Monitoring the Future National Results on Adolescent Drug Use: Overview of Key Findings, 2002* (NIH Publication No. 03-5374). Bethesda, MD: National Institute on Drug Abuse, 56 pp.

## **SURVEYS OF SECONDARY SCHOOL STUDENTS**

Two of the major topics included in this series of annual reports are (a) the prevalence and frequency of drug use among American secondary school students (specifically, in eighth, tenth, and twelfth grades) and (b) trends in use by those students. Distinctions are made among important demographic subgroups in these populations based on gender, college plans, region of the country, population density, parents' education, and race/ethnicity. Data on grade of first use, trends in use at lower grade levels, and intensity of drug use also are reported in three separate chapters. Key attitudes and beliefs about use of the various drugs have been demonstrated by this study to be important determinants of trends in use over time. Therefore, they are also tracked over time, as are students' perceptions of certain relevant aspects of the social environment—in particular, perceived availability, peer norms, use by friends, and exposure to use.

## **SURVEYS OF COLLEGE STUDENTS, AND ADULTS THROUGH AGE 40**

Also included in this report series are findings on the prevalence and trends in drug use among adults through age 40 who have completed high school. These data are reported primarily in Volume II, although a brief summary of them is given in chapter 2 of this volume, "Overview of Key Findings." The period of young adulthood (here defined as late teens to early 30s) is particularly important because it has tended to be the period of peak use for many drugs.

The Monitoring the Future study design calls for biennial follow-ups—through age 30—of a subsample of the respondents in each participating senior class, beginning with the class of 1976. In 2002, representative samples of the graduating classes of 1990 through 2001, corresponding to modal ages 19 to 30, provided the panel data. Because the same questionnaire forms are used in each of these follow-ups, it is possible to integrate the data across this age band. Comprehensive results from this young adult population are presented in Volume II. (Older cohorts are now followed up again at ages 35 and 40 using somewhat different questionnaires.)

Two chapters in Volume II present data on college students specifically. Trend data are provided since 1980, the first year that a national sample of college students one to four years past high school was available from the follow-up survey. College students have not usually been well represented in national household surveys because many college students live on campus in group dwellings (dormitories, fraternities, and sororities) that often are not included in household surveys. (The National Household Survey on Drug Abuse, conducted in earlier years by National Institute on Drug Abuse and now by the Substance Abuse and Mental Health Services Administration, was revised in 1991 to include such group dwellings.) Twenty-three Monitoring the Future surveys on substance use among American college students have now been completed, encompassing a 22-year time interval.

## CONTENT AREAS COVERED IN THIS REPORT

### Drug Classes Included at the Beginning of the Study

Initially, 11 separate classes of drugs were distinguished for this series of reports: marijuana (including hashish), inhalants, hallucinogens, cocaine, heroin, opiates other than heroin (both natural and synthetic), stimulants (more specifically, amphetamines), sedatives, tranquilizers, alcohol, and tobacco. This particular organization of drug use classes was chosen to heighten comparability with a parallel series of publications based on the National Household Survey on Drug Abuse. Separate statistics also are presented for several subclasses of drugs within these more general classes: PCP and LSD (both hallucinogens), barbiturates and methaqualone (both sedatives), the amyl and butyl nitrites (a class of inhalants), crystal methamphetamine (“ice”), and crack and other cocaine.

### Drug Classes Added During the Life of the Study

A number of the drugs just mentioned appeared on the American scene after the study began and were added to the twelfth-grade questionnaires in subsequent years. Trend data for PCP and nitrites are available since 1979, when questions about the use of these drugs were added to the study because of increasing concern over their rising popularity and possibly deleterious effects. For similar reasons, a single question about crack cocaine was added to the 1986 survey, and more detailed questions on crack and other cocaine were added in 1987.

Questions about methylenedioxymethamphetamine (MDMA), or “ecstasy,” were added in 1989 to the follow-up surveys only and in 1996 to the eighth-, tenth-, and twelfth-grade surveys. Questions about crystal methamphetamine (“ice”) were added to the twelfth-grade surveys in 1990. Barbiturates and methaqualone, two components of the sedative class as used here, have been measured separately from the outset. Data for them are presented separately because their trend lines have proven to be quite different. Questions about anabolic steroids were added in 1989 because of reports of their increasing illicit use among young people. Questions about smokeless tobacco were added in 1986, while cigarette use has been covered since the study’s inception. In 1991 questions about “getting drunk” were added to the long-standing set of questions on alcohol use. A question about Rohypnol was added to the secondary school questionnaires in 1996. Special questions on the use of heroin by injection, as well as by means other than injection, were added in 1995, as use by means other than injection appeared to be rising. The 1999 survey incorporated new questions on the use of methamphetamines, and the 2000 survey added questions on the use of two additional “club drugs,” GHB and ketamine, as well as bidis (a type of flavored cigarette). Ritalin, kreteks, androstenedione, and creatine were added in 2001, and Oxycontin and Vicodin were included in the 2002 surveys. Obviously, as time passes and new trends develop, additional drugs will have to be added to the study’s coverage.

For drugs other than alcohol, cigarettes, smokeless tobacco, inhalants, nonprescription stimulants, androstenedione, and creatine, practically all of the information reported here deals with illicit use of controlled substances. Respondents are asked to exclude any occasions on which they used any of the psychotherapeutic drugs under medical supervision. (Some data on

the medically supervised use of such drugs are contained in the full 1977, 1978, 1981, and 1983 volumes in this series, and an earlier article discussed trends in the medical use of these drugs.<sup>2)</sup>

Throughout this report we have chosen to focus attention on drug use at the higher frequency levels rather than simply to report proportions that have ever used various drugs. This is done to help differentiate levels of seriousness, or extent, of drug involvement. While there is no public consensus on what levels or patterns of use constitute “abuse,” there is surely a consensus that higher levels of use are more likely than lower levels to have detrimental effects for the user and society. We have also introduced indirect measures of dosage per occasion by asking respondents the duration and intensity of the highs they usually experience with each type of drug. They have shown some interesting trends over the years. Chapter 7 reports those results.

### **Attitudes and Beliefs**

For both licit and illicit drugs, separate chapters are devoted to various variables: grade of first use; the students’ own attitudes and beliefs; and their own perceived drug availability and related attitudes, beliefs, and behaviors of others in their social environment. Some of these variables have proven to be important in explaining the changes in use.

### **Over-the-Counter Substances**

Chapter 10, “Other Findings from the Study,” discusses use of nonprescription stimulants, including diet pills, stay-awake pills, and the “look-alike” pseudo-amphetamines. Questions on these substances were placed in the survey beginning in 1982 because the use of them appeared to be on the rise and because it appeared that some respondents inappropriately included them in their answers about amphetamine use. That inappropriate inclusion affected some of the observed trends in amphetamine use until the clarification in 1982. In 2001 a table on the performance-enhancing substances androstenedione and creatine was added to chapter 10.

### **Cumulative Lifetime Daily Marijuana Use**

Chapter 10 also presents trend results from a set of questions about cumulative lifetime marijuana use at a daily or near-daily level. These questions were added to enable us to develop a more complete individual history of daily use over a period of years. They reveal some interesting facts about the frequent users of this drug. Also included in chapter 10 are synopses of a number of other publications that have emanated from the study over the past year.

### **Appendices**

This volume contains an appendix on how to calculate confidence intervals for point estimates and how to calculate statistics testing the significance of changes over time or of differences between subgroups. While many tables in these volumes already contain such statistics for selected point estimates and selected change intervals, some readers may wish to conduct additional computations. Appendix C provides the necessary formulas and design effect corrections to permit such computations.

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<sup>2)</sup>Johnston, L. D., O'Malley, P. M., & Bachman, J. G. (1987). Psychotherapeutic, licit, and illicit use of drugs among adolescents: An epidemiological perspective. *Journal of Adolescent Health Care*, 8, 36-51.



The reader's attention is also called to Appendix D, which presents supplementary tables providing cross-time trends in the use of numerous drugs for various demographic subgroups in the population. Specifically, subgroups are differentiated on the basis of gender, college plans, region of the country, size of the community, education level of the parents (a proxy for socioeconomic status), and racial/ethnic group. The tables document a number of important subgroup differences in both levels of drug use and cross-time trends in drug use.<sup>3</sup> Appendix B supplies the exact definitions used to distinguish these various subgroups. Appendix E provides trends (for twelfth grade only) on individual drugs within the following general classes: hallucinogens other than LSD, amphetamines, tranquilizers, and opiates other than heroin.

## PURPOSES AND RATIONALE FOR THIS RESEARCH

Perhaps no social problem has proven more clearly appropriate for the application of systematic research and reporting than that of substance abuse. Many of these behaviors are hidden from public view; also many of them have changed rapidly and frequently. They are of great importance to the well-being of the nation, and many legislative and programmatic interventions are addressed to them, particularly in response to the increases in adolescent smoking and illicit drug use we reported in the 1970s and again in the 1990s.

Young people are often at the leading edge of social change—and this has been particularly true of drug use. The massive upsurge in illicit drug use during the last 30 or 35 years has proven to be a youth phenomenon, and the “relapse” in the drug epidemic in the early 1990s occurred initially almost exclusively among adolescents, as this study has demonstrated. Adolescents and young adults in their 20s also fall into the age groups at highest risk for illicit drug use. The original epidemic began on the nation's college campuses and then spread downward in age, but the more recent relapse phase in the epidemic manifested itself first among secondary school students and then started moving upward in age as those cohorts matured. From one year to the next, particular drugs rise or fall in popularity, and related problems occur for youth, their families, governmental agencies, and society as a whole.

One of the many important purposes of the Monitoring the Future series is to develop an accurate picture of current drug use and trends in that use. This is a formidable task in and of itself, given the illegal nature of most of the phenomena under study. A reasonably accurate picture of the basic size and contours of the illicit drug use problem among young Americans is a prerequisite for rational public debate and policymaking. In the absence of reliable *prevalence* data, substantial misconceptions can develop and resources may be misallocated. In the absence of reliable data on *trends*, the early detection and localization of emerging problems are more difficult and societal responses more lagged. We believe that Monitoring the Future played an important role in establishing early that cigarette smoking among American adolescents was rising sharply in the 1990s, a fact that helped to encourage and buttress some extremely important policy initiatives that culminated in the tobacco settlement. More recently, Monitoring

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<sup>3</sup>Graphic presentations of these trends among the various demographic subgroups are available on the study's Web site ([www.monitoringthefuture.org](http://www.monitoringthefuture.org)) under Occasional Paper No. 59, which is listed under “Publications.” Johnston, L. D., O'Malley, P. M., and Bachman, J. G. (2003). *Demographic subgroup trends for various licit and illicit drugs, 1975-2002*. (Monitoring the Future Occasional Paper No. 59). Ann Arbor, MI: Institute for Social Research.

the Future has documented and described the sharp rise and then the beginning of a decline in ecstasy use.

In addition, assessments of the impact of major historical and policy-induced events are much more conjectural without good trend data. Finally, the accurate empirical comparison of subgroup differences has challenged conventional wisdom in some important ways.

The Monitoring the Future study also monitors a number of factors that we believe help explain the changes observed in drug use. Many are discussed in this series of volumes. They include peer norms regarding drugs, beliefs about the dangers of drugs, and perceived availability. In fact, monitoring these factors has made it possible to examine a central policy issue in this nation's war on drugs—namely, the relative importance of supply factors versus demand factors in bringing about some of the observed declines (and, more recently, increases) in drug use. We also have developed a general theory of drug epidemics that makes use of many of these concepts to explain the rises and declines that occur in use.<sup>4</sup>

In addition to assessing prevalence and trends accurately and trying to determine their causes, the Monitoring the Future study has a substantial number of other important research objectives. Among these are (a) helping to determine which young people are at the greatest risk for developing various patterns of drug abuse; (b) gaining a better understanding of the lifestyles and value orientations associated with various patterns of drug use, and monitoring how subgroup differences and lifestyle orientations are shifting over time; (c) determining the immediate and more general aspects of the social environment associated with drug use and abuse; (d) determining how major transitions in social environment (entry into military service, civilian employment, college, homemaking, and unemployment) or in social roles (engagement, marriage, pregnancy, parenthood, divorce, and remarriage) affect drug use; (e) determining the life course of the various drug-using behaviors from early adolescence to middle adulthood and distinguishing such “age effects” from cohort and period effects in determining drug use; (f) evaluating possible explanations of period and age effects, including determining the effects of social legislation on various types of substance use; (g) examining possible consequences of using various drugs; and (h) determining the changing connotations of drug use and changing patterns of multiple drug use among youth.<sup>5</sup> We believe that the differentiation of period, age, and cohort effects in the use of various substances has been a particularly important contribution of the project, and it is one that the project's cohort-sequential research design is especially well suited to make. Readers interested in publications dealing with any of these other areas should visit the study's Web site (see next section) or write the authors at the Institute for Social Research, The University of Michigan, Ann Arbor, Michigan, 48106-1248.

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<sup>4</sup>See Johnston, L. D. (1991). Toward a theory of drug epidemics. In R. L. Donohew, H. Sypher, & W. Bukoski (Eds.), *Persuasive communication and drug abuse prevention* (pp. 93-132). Hillsdale, NJ: Lawrence Erlbaum.

<sup>5</sup>For an elaboration and discussion of the full range of Monitoring the Future research objectives in the domain of substance abuse, see Johnston, L. D., O'Malley, P. M., Schulenberg, J. E. and Bachman, J. G. (2001). *The aims and objectives of the Monitoring the Future study and progress toward fulfilling them as of 2001*. (Monitoring the Future Occasional Paper No. 52). Ann Arbor, MI: Institute for Social Research.

**WEB SITE**

Up-to-date information about the study may be found on the Monitoring the Future Web site at: <http://www.monitoringthefuture.org>. This site contains a full listing of all publications from the study, including the full texts and/or the abstracts of many, as well as the full text of all press releases.

## Chapter 2

### KEY FINDINGS:

#### AN OVERVIEW AND INTEGRATION ACROSS FIVE POPULATIONS

Monitoring the Future, which is now in its 28th year, has become one of the nation's most relied-upon sources of information on changes in licit and illicit psychoactive drug use among American adolescents, college students, and young adults. For nearly three decades the study has tracked and reported the use of an ever-growing array of such substances in these populations.

This annual series of monographs, written by the study's investigators and published by its sponsor—the National Institute on Drug Abuse—is one of the major vehicles by which the epidemiological findings from the study are reported. The present two-volume monograph reports findings through 2002. (A companion series of annual reports provides a much briefer, advanced synopsis of the key findings from the latest surveys of secondary school students.<sup>6</sup>)

Over its 28-year existence, Monitoring the Future has conducted in-school surveys of nationally representative samples of (a) high school seniors each year since 1975 and (b) eighth- and tenth-grade students each year since 1991. In addition, beginning with the class of 1976, follow-up surveys have been conducted by mail on representative sub-samples of the respondents from each previously participating twelfth-grade class.

A number of important findings have been summarized and integrated in this chapter to provide the reader with an overview of the key results. Because so many populations, drugs, and prevalence intervals are discussed here, a single integrative set of tables (Tables 2-1 through 2-3) showing the 1991-2002 trends for all drugs on all five populations (eighth-grade students, tenth-grade students, twelfth-grade students, full-time college students ages 19-22, and all young adults through age 28 who are high school graduates) is included in this chapter. (Note that the young adult group includes the college student population.) Volume II contains additional data on older age-bands, specifically ages 35 and 40.

#### TRENDS IN ILLICIT DRUG USE

Early in the 1990s we noted an increase in use of several illicit drugs among secondary students and some important changes among the students in terms of certain key attitudes and beliefs related to drug use. In the volume reporting 1992 survey results, we noted the beginning of such reversals in both use and attitudes among eighth graders, the youngest respondents surveyed in

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<sup>6</sup>Johnston, L. D., O'Malley P. M., & Bachman, J. G. (2003). *Monitoring the Future national results on adolescent drug use: Overview of key findings, 2002*. (NIH Publication No. 03-5374). Bethesda, MD: National Institute on Drug Abuse. (Also available on the Web at [www.monitoringthefuture.org](http://www.monitoringthefuture.org).)

this study, and also a reversal in attitudes among the twelfth graders. Specifically, the proportions seeing great risk in using drugs began to decline, as did the proportions saying they disapproved of use. As we suggested then, those reversals indeed presaged “an end to the improvements in the drug situation that the nation may be taking for granted.” The use of illicit drugs rose sharply in all three grade levels after 1992, as negative attitudes and beliefs about drug use continued to erode. This pattern continued for some years.

In 1997, for the first time in six years, illicit drug use finally began to decline among eighth graders. Use of marijuana continued to rise among tenth and twelfth graders, although their use of several other drugs leveled off and relevant attitudes and beliefs also began to reverse in many cases. In 1998, illicit drug use continued a gradual decline among eighth graders and started to decline at tenth and twelfth grades. In 1999, 2000, and 2001 the decline continued for eighth graders while use held fairly level among tenth and twelfth graders. In 2002, use by eighth and tenth graders decreased significantly and use by twelfth graders dropped, but by less than a statistically significant amount. As we have noted previously, the fact that use continued to decline steadily, albeit slowly, among the eighth graders suggested there would be an eventual further decline at the upper grades. We are now beginning to see those declines.

- As subsequently illustrated in discussion of specific drugs, the increase in use of many drugs during the 1990s among secondary school students, combined with fairly level rates of use among college students and young adults, resulted in some unusual reversals in the usage rates by age. In the early years of the epidemic, illicit drug use rates clearly were higher in the college-age group (and eventually the young adults) than they were among secondary school students. But by the late 1990s, the highest rates of active use (i.e., annual or 30-day prevalence) tended to be found in the late secondary school years. In 2002 college students’ use, which rose some, inched ahead of tenth graders’ use, which declined some. For example, in 2002 the rank order for 30-day prevalence of using **any illicit drug** is: twelfth graders (25%), college students (22%), tenth graders (21%), 19- to 28-year-olds (19%), and eighth graders (10%). With respect to using **any illicit drug other than marijuana** in the past 30 days, the rank order is as follows: twelfth graders (11%); tenth graders, college students, and 19- to 28-year-olds (all at 8%); and finally eighth graders (5%). As can be seen, usage rates among tenth and twelfth graders tend to be higher than among young adults and, in some cases, even higher than the college-student segment of the young adult population.
- From the early 1990s until 1997, **marijuana** use rose sharply among secondary school students, and their use of a number of **other illicit drugs** also rose, though more gradually. An increase in marijuana use also occurred among American college students, largely reflecting “generational replacement,” wherein earlier graduating high school class cohorts were replaced in the college population by more recent ones who were more drug-experienced before they left high school—in other words, as the result of a cohort effect. A resurgence in illicit drug use spreading *up* the age spectrum is a reversal of the way the epidemic spread several decades earlier. In the 1960s the epidemic began on the nation’s college campuses, and then the behavior diffused downward in age to high school students and eventually to junior high school students. This time the increases began in middle schools and radiated up the age spectrum.

The increases in use of *marijuana* and *other illicit drugs* taken as a class were substantially larger, in both proportional and absolute terms, in the three secondary school grades than in either the college or young adult populations. In fact, at present there still is only a modest increase in illicit drug use in the young adult population of 19- to 28-year-olds. From 1991 through 1997, their annual prevalence of use of *any illicit drug* held remarkably stable at the same time that adolescent use rose appreciably. As we have said in the past, we believe that, as generational replacement continues to occur, we will likely see some increase in use of illicit drugs by the young adults. In fact, some of that appears to have happened among college students, whose annual prevalence of marijuana use peaked a year later than among twelfth graders and whose 30-day prevalence peaked two years later. Their use of *any illicit drug other than marijuana* continued to rise through 2002, whereas use by twelfth graders peaked in 1997 at 21% where it remains in 2002. Indeed, the rates among college students have yet to fall appreciably, and the rates among 19- to 28-year-olds are still rising, even though substantial declines are now occurring among the younger respondents on both the use of any illicit drug and the use of any illicit drug other than marijuana.

These diverging trends across the different age groups show that changes during the 1990s reflected some cohort effects—lasting differences between class cohorts—rather than broad secular trends, which would appear simultaneously in all of the age groups covered by the study. All during the previous 16 years of the study, the use of most drugs moved in parallel across most age groups, indicating secular change.

- A somewhat parallel finding occurred for *cigarette* smoking, in that college students showed a sharp increase in smoking, beginning in 1995, no doubt reflecting a generational replacement effect. (Smoking had been rising among high school seniors since 1992.) This has been a more typical pattern of change for *cigarettes*, however, since differences in cigarette smoking rates among class cohorts tend to remain through much or all of the life cycle and also tend to account for much of the overall change in use observed at any given age. The increase in current smoking ended among eighth and tenth graders in 1996, among twelfth graders in 1997, but not among college students until 1999. The appreciable decline in the smoking rate that began among the eighth graders appears to be radiating up the age spectrum as they get older. (Their 30-day prevalence rate has fallen from 21% in 1996 to 11% in 2002.) In the early 1990s, smoking among eighth and tenth graders had risen by about 50%—a particularly sharp and concerning rise. Among the young adult stratum there has been little evidence yet of a decline in current smoking. The rate is almost exactly where it was in 1995 (29%); but with time we expect their current smoking also will drop as the cohort effect works its way up the age bands.
- *Marijuana* use, which had been rising sharply in all three grades of secondary school during the early to mid-1990s, began to turn downward in 1997 among eighth graders and then did the same in 1998 among tenth and twelfth graders. Only the eighth graders showed a continuation of this decline in 2000, however. In 2001, use remained level in all three grades. In 2002, use dropped some in all three grades, but only the tenth graders' decline was statistically significant.

- In the 1990s, the annual prevalence of marijuana use (i.e., the percent reporting any use during the prior 12 months) tripled among eighth graders (from 6% in 1991 to 18% in 1996), more than doubled among tenth graders (from 15% in 1992 to 35% in 1997), and grew by three quarters among twelfth graders (from 22% in 1992 to 39% in 1997). Among college students, however, the increase in marijuana use, presumably largely due to a “generational replacement effect,” was much more gradual. Annual prevalence rose by about one third from 27% in 1991 to 36% in 1998, before beginning to level. Among young adults there so far has been even less change, from 24% in 1991 to 29% in 2002, with no decline yet.

**Daily marijuana use** rose substantially among secondary school and college students between 1992 and 2000 but somewhat less so among young adults (see Table 2-3). In 2001, the increase in daily use continued for the tenth graders and young adults but halted for the eighth graders, twelfth graders, and college students. The rates of daily use in 2002 are approximately where they stood in 2000 in all five populations. Among twelfth graders 6.0% are now current daily marijuana users, as are 4.1% of college students and 4.5% of all young adults. Daily use among eighth graders is considerably lower, at 1.2%. All of these rates are at or near their recent 2000 peaks. Still, the rate for seniors, for example, is far below the 10.7% peak figure reached in 1978, at the height of the illicit drug epidemic.

The amount of risk associated with using marijuana fell during the earlier period of increased use and again during the more recent resurgence of use in the 1990s. Indeed, at twelfth grade, perceived risk began to decline a year *before* use began to rise in the upturn of the 1990s, making perceived risk a leading indicator of change in use. (The same may have happened in eighth grade, as well, but we do not have data starting early enough to check that possibility.) The decline in perceived risk halted after 1997 in eighth and tenth grade, and use began to decline a year or two later. Again, perceived risk was a leading indicator of change in use, as it has proven to be for a number of drugs.

Personal disapproval of marijuana use slipped considerably among eighth graders between 1991 and 1996 and among tenth and twelfth graders between 1992 and 1997. For example, the proportions of eighth, tenth, and twelfth graders who said they disapproved of trying marijuana once or twice fell by 17, 21, and 19 percentage points, respectively, over those intervals of decline. There has since been some increase in disapproval among eighth and tenth graders, but among twelfth graders there has been little net change on this dimension.

- Among seniors, the proportions using **any illicit drug other than marijuana** in the past year rose from a low of 15% in 1992 to 21% in 1997 (and is still at 21% in 2002). (This recent peak was substantially below the 34% peak rate in 1981.) In fact, all of the younger groups showed significant increases (though not as large in proportional terms as for marijuana). Use of any illicit drug other than marijuana began to increase in 1992 among eighth graders, in 1993 among tenth and twelfth graders, and in 1995 among college students—again reflecting evidence of a cohort effect. Use peaked in 1996 among eighth and tenth graders and by 1997 among twelfth graders, but it has yet to peak

among the college students and young adults. The eighth graders have shown some gradual decline in their use of the other illicit drugs, taken as a class, since 1996; but the brief period of decline among tenth graders ended after 1998 and use did not decline further until 2002.

- Between 1989 and 1992 we noted an increase among high school seniors, college students, and young adults in their use of *LSD*, a drug most popular in the late 1960s and early 1970s. By 1992, the newly added populations (eighth and tenth graders) were also showing an increase in LSD use; and for several more years, modest increases persisted in all five populations. Use of LSD among college students and young adults was the first to peak, in 1995. Use in all three grades of secondary school peaked a year later. Since those peak years in the mid-1990s, there has been some decline in the relatively low rates of LSD use across the board, including a significant decline for all five groups this year.

Prior to the significant increase in LSD use among seniors in 1993, there was a significant 4.3-percentage-point decline between 1991 and 1992 in the proportion seeing great risk associated with trying LSD. (Once again this belief proved a leading indicator of change in use.) The decline in perceived risk continued through 1997 and halted in 1998. The proportion of seniors disapproving of LSD use also began to decline in 1992 and continued through 1996.

Because LSD was one of the earliest drugs to be popularly used in the overall American drug epidemic, there is a distinct possibility that young people—particularly the youngest cohorts, like the eighth graders—are not as concerned about the risks of use. They have had less opportunity to learn vicariously about the consequences of use by observing others around them or to learn from intense media coverage of the issue, which occurred some years earlier. We were concerned that this type of “generational forgetting” of the dangers of a drug, which occurs as a result of generational replacement, could set the stage for a whole new epidemic of use. In fact, perceived harmfulness of LSD began to decline after 1991 among seniors. These measures for risk and disapproval were first introduced for eighth and tenth graders in 1993 and both measures dropped until 1997 or 1998, after which perceived risk and disapproval leveled (or declined some). Because the decline in use in the last few years has *not* been accompanied by expected changes in these attitudes and beliefs, we are inclined to think that there may be some displacement by another drug taking place. The most logical candidate is *ecstasy*, which is also used for its hallucinogenic effects and which has been very much on the rise recently. It is also possible that the decline in availability has played a role in this case.

- Questions about the use of *ecstasy* (*MDMA*) have been included in the follow-up surveys of college students and young adults since 1989; however, because of our concern about stimulating interest in an attractive-sounding and little-known drug, these questions were not added to the secondary school surveys until 1996. From 1989 to 1994, the annual prevalence rates tended to be quite low in the older age groups for whom we had data, but in 1995 there was a substantial increase (from 0.5% to 2.4% among college students, and from 0.7% to 1.6% among young adults generally).



When data were first gathered on secondary school students in 1996, the tenth and twelfth graders showed higher rates of annual use (both 4.6%) than the college students (2.8%). Ecstasy use then fell steadily at all three grades of secondary school between 1996 and 1998, though it did not fall in the older age groups. Between 1998 and 2001 use rose sharply in all five populations. In fact, annual prevalence more than doubled in that three-year period among twelfth graders, college students, and young adults and nearly doubled in the lower grades. In 2000 even the eighth graders showed a significant increase in use. Among young adults, the increase in use has occurred primarily among those under age 29. In 2002 use declined for all five groups, but only the tenth graders' change was significant. Once again, this decline in use was predicted by an increase in perceived risk a year earlier—an increase that continued in 2002. The rates of annual prevalence in 2002 for ecstasy were: 2.9%, 4.9%, and 7.4% among eighth, tenth, and twelfth graders, respectively, 6.8% among college students, and 6.2% among all young adults. Because all five populations have been moving synchronously since 1999, this appears to reflect a secular trend, suggesting that events in the social environment are reaching everyone. We believe that one such class of events is the increasing media coverage of people suffering adverse outcomes as a result of their ecstasy use, and another is the increasing dissemination of the scientific evidence on effects produced by the National Institute on Drug Abuse.

There was quite a dramatic increase in the reported availability of this drug in recent years, which seems to be substantiated by seizure data. Of the twelfth graders surveyed in 1991, only 22% thought they could get ecstasy fairly easily, but a decade later (in 2001) 62% thought that they could. This increase ended in 2002 finally.

As of 2000 there had been little increase in the perceived degree of risk seniors associate with ecstasy use. The mounting media attention to the drug and its consequences may be behind the dramatic increase in perceived risk of ecstasy use in 2001 and 2002, as we predicted might occur. As a related measure, disapproval gradually declined between 1999 and 2000 before increasing significantly for all three grades.

- In the decade between 1982 and 1992, annual prevalence rates for *amphetamines* use among seniors fell by nearly two thirds, from 20% to 7.1%. Rates among college students fell even more over the same interval, from 21% to 3.6%. Annual use increased by about half among eighth and tenth graders between 1991 and 1996, and there were increases among twelfth graders and college students between 1992 and 1996. In 1997, use declined significantly among eighth graders and leveled among tenth graders, but use continued to increase among twelfth graders. After 1997, use continued to decline in eighth and tenth grade, before leveling in 2000, and remained fairly level at twelfth grade. In 2002, use decreased significantly among eighth graders, decreased some among tenth graders, and held level among twelfth graders. In sum, since 1996 there has been a fair decline in amphetamine use among eighth graders, a small decline among tenth graders, and no change among twelfth graders. Use continued to increase among college students through 2001 and young adults through 2002, however, quite likely reflecting generational replacement.

The increase in use of illicit amphetamines (and a decrease in disapproval) that began among seniors in 1993 followed a sharp drop in perceived risk a year earlier (which, as we have said, often serves as a leading indicator). Following a period of decline, disapproval and perceived risk associated with amphetamine use stabilized in 1997 among seniors, while use showed a leveling. In 1998, there was a bump up in perceived risk, but some correction back the next year. This general pattern of change is consistent with our theoretical position that perceived risk can drive both disapproval and use.

College students showed a modest increase in amphetamine use during the 1990s, but the absolute prevalence rates are only about half those for tenth and twelfth graders; and use among young adults generally is lower still and has changed rather little.

- **Ritalin** has been among the most widely reported specific amphetamines in recent years; its use increased among high school seniors from an annual prevalence of 0.1% in 1992 to 2.8% in 1997, before leveling. (See Appendix E, Table E-2.)<sup>7</sup> Use of **ice (crystal methamphetamine)** increased in the late 1990s through 2002 among seniors and young adults, although it dipped shortly in 1999. **Methamphetamine** questions were introduced in 1999, with a modest decline observed in use among all five populations through 2002. The annual prevalence rates observed in 2002 for methamphetamine are 2.2%, 3.9%, 3.6%, 1.2%, and 2.5% among eighth graders, tenth graders, twelfth graders, college students, and all young adults, respectively.
- **Inhalants** constitute another class of abusable substances in which a troublesome increase (this time a longer-term one) was followed by a reversal among secondary school students. The reversal came after 1995 in this instance. Inhalants are defined as fumes or gases that are inhaled to get high, and they include common household substances such as glues, aerosols, butane, and solvents. One class of inhalants, **amyl and butyl nitrites**, became somewhat popular in the late 1970s, but their use has been almost eliminated. For example, their annual prevalence rate among twelfth-grade students was 6.5% in 1979 but only 1.1% in 2002.

When the nitrites are removed from consideration, it appears that all other inhalants, taken together, showed an upward trend in annual use until 1995. Largely prompted by reports of Monitoring the Future survey findings regarding the rise in inhalant use, the Partnership for a Drug-Free America launched an anti-inhalant ad campaign in mid-April of 1995. By the 1996 spring survey of eighth and tenth graders (twelfth graders are not asked about the dangers of inhalants), there was a sharp increase (of 3 to 6 percentage points, depending on the measure) in the percent who said that using inhalants carries great risk to the user. Inhalant use in all grades began to decline in 1996 and continued declining through 1999 in all grades, after a long and steady increase in the preceding years. This is all the more noteworthy because illicit drug use generally was still increasing in 1996 and (for the upper two grades) 1997 as well. The gradual decline in inhalant use continued into 2002 in all five populations.

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<sup>7</sup>As is discussed in Appendix E, the absolute prevalence for Ritalin is probably higher than these statistics indicate, but the trend story likely is quite accurate.

Some 7.7% of the 2002 eighth graders and 5.8% of the tenth graders indicated inhalant use in the prior 12 months, making inhalants the second most widely used class of illicitly used drugs for eighth graders (after marijuana) and the third most widely used (after marijuana and amphetamines) for tenth graders. Inhalants can and do cause death, which, tragically, often occurs among those in their early teens. Because the use of inhalants decreases with age, this class of drugs shows an unusual pattern, with active use being highest among the eighth graders (7.7% annual prevalence in 2002) and lowest among the young adult population (annual prevalence of only 1.6% in 2002).

- ***Crack cocaine*** use spread rapidly from the early to the mid-1980s. Still, among high school seniors, the overall prevalence of crack leveled in 1987 at a relatively low prevalence rate (3.9% annual prevalence), even though crack use had continued to spread to new communities. Clearly it had quickly attained a reputation as a dangerous drug, and by the time of our first measurement of perceived risk in 1987, it was seen as the most dangerous of all of the drugs. Annual prevalence dropped sharply in the next few years, reaching 1.5% by 1991, where it remained through 1993. Perceived risk began what turned out to be a long and substantial decline after 1990. Use began to rise gradually after 1993, when it was 1.5%, to 2.7% by 1999, before finally declining in 2000 and then leveling.

Among eighth and tenth graders, crack use had risen gradually in the 1990s: from 0.7% in 1991 to 2.1% by 1998 among eighth graders, and from 0.9% in 1992 to 2.5% in 1998 among tenth graders. In 1999 there was a significant decrease in use among eighth graders while use among tenth graders leveled. In contrast, among young adults 1 to 10 years past high school, annual prevalence was only 1.0% in 2002, virtually unchanged since 1992. Nor was there much change in the low rates of crack use among college students during the 1990s and through 2002. Except for the recent modest decline among eighth graders, there does not yet seem to be a turnaround (as we have seen for most other drugs) in the crack situation, and perceived risk continued to decline in 1999 at all grade levels and then inched up through 2002 for twelfth graders and leveled for eighth and tenth graders. This pattern of an increase among younger students but none among older age groups would be consistent with the notion that perceived risk eroded as generational replacement has taken place. Because the crack epidemic of the mid-1980s is not that long ago, the older age groups may still remember the lessons learned during that historical period.

Among seniors in high school, annual crack prevalence among the college-bound is considerably lower than among those not bound for college (1.7% for college-bound versus 4.5% for noncollege-bound, in 2002).

We believe that the particularly intense and early media coverage of the hazards of crack cocaine likely had the effect of “capping” an epidemic early by deterring many would-be users and by motivating many experimenters to desist use. As has been mentioned, when we first measured crack use in 1987, it had the highest level of perceived risk of any illicit drug. Also, it did not turn out to be “instantly addicting” upon first-time use, as had

been reported widely. While 3.8% of seniors in 2002 reported ever having tried crack, only 1.2% reported use in the past month, indicating that 68% of those who tried crack did not establish a pattern of continued use.

In 1993, the levels of perceived risk and disapproval associated with crack dropped in all three grade levels, foretelling the rise in use that occurred in all three grades between 1994 and 1998. Because more than a decade had passed since the media frenzy about crack use peaked in 1986, it is quite possible that “generational forgetting” of the risks of that drug was occurring. Indeed, perceived risk of crack use had been eroding steadily at all grade levels since 1991 (or 1992 in the case of the twelfth graders) through 2000; however, in 2001 the decline halted in all three grades.

- **Cocaine**<sup>8</sup> in general began to decline a year earlier than crack, probably because crack was still in the process of diffusing to new parts of the country, being still quite new. Between 1986 and 1987 the annual prevalence rate for cocaine dropped dramatically, by roughly one fifth in all three populations then being studied—seniors, college students, and young adults. The decline occurred when young people began to view experimental and occasional use—the type of use in which they are most likely to engage—as more dangerous. This change first began to occur in 1987, probably partly because the hazards of cocaine use received extensive media coverage during the preceding year, but almost surely in part because of the highly publicized cocaine-related deaths in 1986 of sports stars Len Bias and Don Rogers. By 1992, the annual prevalence of cocaine use had fallen by about two thirds among the three populations for which long-term data are available (twelfth graders, college students, and young adults).

During the 1990s, however, cocaine use in all five populations increased some, both beginning and ending in a staggered pattern by age. Use rose among eighth graders from 1991 to 1998, among tenth and twelfth graders from 1992 to 1999, among college students from 1994 to 2000, and among young adults from 1996 through 2001. (Note that a turnaround has yet to occur in the two older groups.)

Again, the story regarding attitudes and beliefs is informative. Having risen substantially after 1986, the perceived risk of using cocaine actually showed some (nonsignificant) decline in 1992 among seniors. In 1993, perceived risk for **cocaine other than crack** fell sharply in all grades and disapproval began to decline in all grades, though not as sharply as perceived risk. The decline in perceived risk had virtually ended by 1995 among eighth graders, by 1998 among tenth graders, and by 2000 among twelfth graders. Disapproval declined between 1991 and 1996 among eighth graders, before leveling, and in 1992 through 1998 among tenth and twelfth graders, with the exception of an increase for twelfth graders in 1995. These changes foretold a subsequent leveling of use at each grade level.

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<sup>8</sup>Unless otherwise specified, all references to “cocaine” refer to the use of cocaine in any form, including crack.

Through 1989, there was no decline in perceived availability of cocaine among twelfth graders; in fact, it rose steadily from 1983 to 1989, suggesting that availability played no role in bringing about the substantial downturn in use after 1986. After 1989, however, perceived availability fell some among seniors; the decline may be explained by the greatly reduced proportions of seniors who said they have any friends who use, because friendship circles are an important part of the supply system. From 1992 through 1998 or 1999, there was rather little change in reports of availability of powder cocaine in the three grades, but in the past couple of years there has been some falloff.

As with all the illicit drugs, lifetime cocaine prevalence climbs with age, reaching 39% by age 40 (among the 2002 survey respondents). Unlike all of the other illicit drugs, active use of cocaine—i.e., annual prevalence or monthly prevalence—holds fairly steady after high school (and until recent years increased in use after high school) rather than declining. (See Figure 4-5 in Volume II.) Nearly all of the other illicit drugs show a decline in active use with age.

- **PCP** use fell sharply among high school seniors between 1979 and 1982, from an annual prevalence of 7.0% to 2.2%. It reached a low point of 1.2% in 1988, rose some in the 1990s to 2.6% in 1996, and declined to 1.1% by 2002. For the young adults, the annual prevalence rate rose very slightly from 0.2% in 1996 to 0.6% in 2001 before declining to 0.3% in 2002.
- Looking at the long-term trends, we see that the annual prevalence of **heroin** use among twelfth graders fell by half between 1975 (1.0%) and 1979 (0.5%). It then stabilized for 15 years, through 1994. Heroin use was also stable in the early 1990s among the other four populations covered here. Then, in 1994 in the case of the eighth graders, and in 1995 in the case of all other groups, there was a sudden uptick in use, with rates jumping in one or two years to two or three times what they had been. The new higher levels of heroin use remained among all five populations for the rest of the decade. In 2000, however, there was a significant decrease in use among eighth graders (from 1.4% in 1999 to 1.1% in 2000) and a significant increase in use among seniors (from 1.1% in 1999 to 1.5% in 2000). The increase among seniors was due entirely to an increase in non-injection use. Use of heroin declined significantly among tenth and twelfth graders in 2001, as did their use of heroin without a needle. In 2002 little change took place among the secondary school students, but young adults showed a significant decline in their reported heroin use.

Two factors very likely contributed to the upturn in heroin use in the 1990s. One is a long-term decline in the perceived risk of harm, probably due to “generational forgetting,” because it had been a long time since the country had experienced a heroin epidemic. The second factor, not unrelated to the first, is that in recent years the increased purity of heroin has allowed it to be used by means other than injection. This may have lowered an important psychological barrier for some potential users by making heroin use less aversive, and by making it seem less addictive as well as safer, because avoiding injection reduces the likelihood of transmission of HIV, hepatitis, or other serious diseases. By introducing some new questions on heroin use in 1995, we were

able to show that significant proportions of past-year users in all five populations were indeed taking heroin by means other than injection. (See Table 2-2 and chapter 4 of Volume I for details.)

The risk perceived to be associated with heroin fell for more than a decade after the study began, with 60% of the 1975 seniors seeing a great risk of trying heroin once or twice and only 46% of the 1986 seniors saying the same. (The decline may be an example of generational forgetting, as the heroin epidemic of the early 1970s faded into the distant past.) Between 1986 and 1991 perceived risk rose some, from 46% to 55%, undoubtedly reflecting the newly recognized threat of HIV infection associated with heroin injection. After 1991, however, perceived risk fell again (to 51% by 1995), this time perhaps reflecting the fact that the newer heroin available on the street could be administered by methods other than injection because it was so much purer. In 1996, perceived risk among seniors began to rise once again, rose sharply by 1997, and continued to rise in 1998—perhaps as the result of an anti-heroin campaign launched by the Partnership for a Drug-Free America in June 1996, as well as the visibility of heroin-related deaths of some celebrities in the entertainment and fashion design worlds. The perceived risk of trying heroin began to decrease among seniors in 1999, however, foretelling a significant increase in their use of the drug in 2000. In 2001, as the perceived risk of trying heroin increased slightly, their use finally declined significantly.

Questions about the degree of risk perceived to be associated with heroin use were first introduced into the questionnaires for eighth and tenth graders in 1995. The questions asked specifically and only about use “without using a needle,” because we thought this was the form of heroin use of greatest concern at that point. (Similar questions were asked of twelfth graders, as well, in one of the six questionnaire forms.) In general, perceived risk in all three grades rose in 1996 and 1997, before leveling.

- The use of *narcotics other than heroin* is reported only for the oldest three populations because we believe younger students are not accurately discriminating among the drugs that should be included or excluded from this general class. Use had been declining gradually over most of the life of the study in the age groups under study. Seniors had an annual prevalence rate of 6.4% in 1977, which fell to 3.3% by 1992. But from about 1992 through 2001, all of the older age groups showed a continuing increase, reaching peak levels of use in 2001, with young adults showing a significant one-year increase that year. (A closer look at the age breakdowns suggests that most of this increase among young adults is concentrated among 19- to 24-year-olds.) The specific drugs in this class are listed in Table E-4 in Appendix E of Volume I, which shows that *codeine* and *opium* are among the ones most commonly mentioned by high school seniors in recent years. They also account for much of the increase in the general class, though there have also been increases in the reported use of *morphine* and *Demerol*.
- In 2002 data were gathered for the first time on two other drugs in this class—*Vicodin* and *OxyContin*—and it is very likely that they help to account for the upturn in the use of the general class of narcotics other than heroin. We find that Vicodin has attained surprisingly high prevalence rates in the five populations under study here—an annual

prevalence of 2.5% in eighth grade, 6.9% in tenth grade, 9.6% in twelfth grade, 6.9% among college students, and 8.2% among young adults. Considerably lower rates were found for OxyContin, but considering that it is a highly addictive narcotic drug, the rates are not inconsequential—1.3%, 3.0%, 4.0%, 1.5%, and 1.9% in the same five populations, respectively. Because OxyContin has received considerable adverse publicity in the last year or so, it is possible that perceived risk (which we do not measure) will increase. But, because its use appears to have originated in several fairly delimited geographic areas, it is also likely that it will be diffusing to new communities for some time to come.

- A long, substantial decline, which began in 1977, occurred for *tranquilizer* use among high school seniors. By 1992, annual prevalence reached 2.8%, down from 11% in 1977. Since 1992, use increased significantly (as has been true with most of the drugs), reaching 5.8% in 1999 and 7.7% in 2002. Reported tranquilizer use also exhibited some modest increase among eighth graders, from 1.8% in 1991 to 3.3% in 1996, before declining a bit to 2.6% in 1998. (Use stood at 2.6% in 2002.) Among tenth graders, annual prevalence remained stable between 1991 and 1994, at around 3.3%, and increased significantly to 4.6% by 1996 and to 6.3% by 2002. After a period of stability, college student use also showed an increase between 1994 and 2002, more than tripling. For the young adult sample, after a long period of decline, annual prevalence increased appreciably between 1997 and 2002, more than doubling. Most of the reported tranquilizer use in recent years has involved *Valium* and *Xanax*. (See Table E-3 in Appendix E of Volume I.)
- The long-term gradual decline in *sedative (barbiturate)* use, which began at least as early as 1975, when the study began, halted in 1992. Use among twelfth graders then rose to 6.7% in 2002—still well below the peak rate of 10.7% in 1975. The 2002 annual prevalence of this class of drugs is lower among young adults (3.9%) and college students (3.7%) than among seniors (6.7%). Use among college students began to rise a couple of years later than it did among twelfth graders, no doubt reflecting the impact of generational replacement. (Data are not included here for eighth and tenth grades, again because we believe that the younger students have more problems with proper classification of the relevant drugs.)
- *Methaqualone*, another sedative drug, has shown a trend pattern quite different from barbiturates. Methaqualone use rose among seniors from 1975 to 1981, when annual prevalence reached 7.6%. Its use then fell very sharply, declining to 0.2% by 1993, before rising significantly during the general drug resurgence in the 1990s, to 1.1% by 1996. Use then leveled before decreasing significantly to 0.3% in 2000, but it is now up a bit to 0.9% in 2002. Use also fell among all young adults and among college students, who had annual prevalence rates of only 0.3% and 0.2%, respectively, by 1989—the last year they were asked about this drug. In the late 1980s, shrinking availability may well have played a role in this drop, as legal manufacture and distribution of the drug ceased. Because of its very low usage rates, only the twelfth graders are now asked about use of this drug.

- It should be noted that we are seeing in recent years a virtually uninterrupted increase among high school seniors, college students, and young adults generally in the use of nearly all illicit drugs that are *central nervous system depressants*. These include *sedatives (barbiturates)*, *tranquilizers*, and *narcotics other than heroin*. All of these drugs tended to fall from favor from the mid-1970s through the early 1990s, but many made a comeback in the mid- to late 1990s and into the early 2000s.
- To summarize, for some years five classes of illicitly used drugs—*marijuana*, *amphetamines*, *cocaine*, *LSD*, and *inhalants*—have had an impact on appreciable proportions of young Americans in their late teens and 20s. In 2002 high school seniors showed annual prevalence rates of 36%, 11%, 5.0%, 3.5%, and 4.5%, respectively. Among college students in 2002, the comparable annual prevalence rates are 35%, 7.0%, 4.8%, 2.1%, and 2.0%; and for all young adults the rates are 29%, 5.9%, 5.8%, 1.8%, and 1.6%.
- Joining this set of long-established, more prevalent drugs is *MDMA (ecstasy)*, which has annual prevalence rates in 2002 of 7.4% among twelfth graders, 6.8% among college students, and 6.2% among young adults. The *narcotics other than heroin* are now also reaching appreciable numbers at 7.0%, 6.5%, and 6.1%, respectively, as are *tranquilizers* at 7.7%, 6.7%, and 7.0%, respectively.
- In eighth grade, *inhalants* are second only to marijuana as the most widely used of the illicitly used drugs. Because of their importance among the younger adolescents, a new index of illicit drug use including inhalants was introduced in Tables 2-1 through 2-2 in recent years. The use of inhalants reflects a form of illicit, psychoactive drug use; its inclusion makes relatively little difference in the illicit drug index prevalence rates for the older age groups but considerable difference for the younger ones. For example, in 2002 the proportion of eighth graders reporting any illicit drug use in their lifetime, exclusive of inhalants, was 25%, whereas including inhalants raised the figure to 32%.
- Several additional classes of drugs have been added to the study's coverage in the several years, and they are all discussed in chapter 4 of Volume I. These include *ketamine*, *GHB*, and *Rohypnol*, so-called "club drugs" (in addition to LSD and ecstasy). In general these drugs have not attained high prevalence rates among eighth, tenth, or twelfth graders: the 2002 annual prevalence rates for *ketamine* are 1.3%, 2.2%, and 2.6%, respectively; for *GHB*, 0.8%, 1.4%, and 1.5%; and for *Rohypnol*, 0.3% and 0.7% for eighth and tenth grade (the Rohypnol question for twelfth graders was changed in 2002). There was little change in the use of any of them this year; Rohypnol, which has been in the study since 1996, has had little change since then. The two narcotic drugs added to our coverage in 2002—*OxyContin* and *Vicodin*—show higher prevalence rates, as stated earlier.
- Two new substances used primarily by males to develop their physique and physical strength were added to the question set in 2001. One is *androstenedione*, which is a precursor to anabolic steroid and can be purchased over the counter. Among males,



where use is heavily concentrated, the 2002 annual prevalence rate is quite high, at 1.7%, 2.2%, and 4.7% in grades 8, 10, and 12. (Among females, the rates are 0.8%, 1.6%, and 0.4%.)

- Another physique-enhancing substance that is not a drug, but rather a type of protein supplement, is *creatine*. Because we thought its use often was combined with the use of steroids and androstenedione, we included a question on it in 2001 and found prevalence of use to be very high. Among boys, who again are the primary users, the 2002 annual prevalence for creatine is 3.9%, 13.1%, and 16.8%, in grades 8, 10, and 12. (For girls, the rates are 0.9%, 2.1%, and 1.5%.)
- The study has contained a set of questions about the use of non-prescription stimulants for some years, including stay-awake pills, diet pills, and the so-called “look-alikes.” The annual prevalence among twelfth graders of over-the-counter *stay-awake pills*, which usually contain caffeine as their active ingredient, nearly doubled between 1982 and 1990, increasing from 12% to 23%. After 1990 this statistic fell, reaching 15% by 2002. Earlier decreases also occurred among the college-aged young adult population (ages 19 to 22), in which annual prevalence was 26% in 1989 and declined to 14% in 2002—its lowest level since 1986. The *look-alikes* also have shown some falloff in recent years. Among high school seniors, annual prevalence decreased slightly from 6.8% in 1995 to 5.0% in 1999, increased to 7.1% in 2001, and then leveled in 2002; among young adults aged 19 to 22, use also declined from 6.0% in 1995 to 4.6% in 2002. Over-the-counter *diet pills* have not shown a recent decline. Among high schools seniors, annual prevalence did decline from 1986 to 1995, from 15% to 10%; increased to 12% in 2001, and then increased significantly in 2002 to 15%. (Among twelfth-grade girls in 2002, some 29% had tried diet pills by the end of senior year, 20% used them in the past year, and 12% used them in just the past 30 days.) Among young adults aged 19 to 22 there also had been an earlier decline from 1986 to 1995, with annual prevalence moving from 16.9% to 6.9%. Use then rose to 16.7% in 2002. The use of these over-the-counter drugs is covered in chapter 10 of Volume I.

### College-Noncollege Differences in Illicit Drug Use

- American college students (defined here as those respondents one to four years past high school who were actively enrolled full-time in a two- or four-year college) show annual usage rates for several categories of drugs that are about average for all high school graduates their age; these categories include *any illicit drug*, *marijuana*, *ketamine*, and *inhalants*. For most categories of drugs, however, college students have rates of use that are below those of their age peers, including *any illicit drug other than marijuana*, *hallucinogens*, *LSD* specifically, *ecstasy*, *cocaine*, *crack cocaine* specifically, *heroin*, *narcotics other than heroin*, *amphetamines*, *methamphetamine*, *ice*, *sedatives (barbiturates)*, and *tranquilizers*. Only for *Ritalin* and *Rohypnol* do they show higher than average rates of use.
- Although college-bound seniors have below-average rates of use on *all* of the illicit drugs while they are in high school, these students’ eventual use of some illicit drugs attain parity with those who do not attend college. As results from the study published in recent

books have shown, this college effect of “catching up” is largely explainable in terms of differential rates of leaving the parental home after high school graduation and of getting married. College students are more likely than their age peers to have left the parental home and its constraining influences and less likely to have entered marriage, with its constraining influences.<sup>9</sup>

- In general, the trends since 1980 in illicit substance use among American college students have paralleled those of their age peers not in college. Most drugs showed a period of substantial decline in use sometime after 1980. Further, all young adult high school graduates through age 28, as well as college students taken separately, showed trends highly parallel for the most part to the trends among high school seniors until about 1992. After 1992, a number of drugs showed an increase in use among seniors (as well as eighth and tenth graders), but not among college students and young adults.

This divergence, combined with the fact that the upturn began first among the eighth graders (in 1992), suggests that cohort effects were emerging for illicit drug use, as we discussed earlier. In fact, as those heavier-using cohorts of high school seniors entered the college years, we saw a lagged increase in the use of several drugs in college. For example, annual prevalence reached a low point among twelfth graders in 1992 for a number of drugs (e.g., *cocaine*, *amphetamines*, *sedatives (barbiturates)*, *tranquilizers*, *other narcotics*, and *any illicit drug other than marijuana*) before rising thereafter; among college students, those same drugs reached a low two years later in 1994, and then began to rise gradually. Then, in 1998, as *marijuana* use was declining in the three grades of secondary school, we saw a sharp increase among college students. The evidence for cohort effects resulting from generational replacement is impressive and consistent with our earlier predictions.

### Male-Female Differences in Illicit Drug Use

- Regarding gender differences in the three older populations (high school seniors, college students, and young adults), males are more likely to use *most illicit drugs*, and the differences tend to be largest at the higher frequency levels. *Daily marijuana use* among high school seniors in 2002, for example, is reported by 8.7% of males versus 3.1% of females; among all adults (aged 19 to 30 years) by 5.9% of males versus 3.0% of females; and among college students, specifically, by 5.7% of males versus 3.0% of females.
- In the eighth- and tenth-grade samples there are fewer and smaller gender differences in the use of drugs—perhaps because girls tend to date and then emulate older boys, who are in age groups considerably more likely to use drugs. While the rate of using *marijuana* in the past year is slightly higher for males, the rate for the use of *any illicit drug other than marijuana* is slightly higher for females. There is little male-female difference in eighth and tenth grades in the use of *LSD*, *cocaine*, *crack*, *heroin*,

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<sup>9</sup>Bachman, J. G., Wadsworth, K. N., O'Malley, P. M., Johnston, L. D., & Schulenberg, J. E. (1997). *Smoking, drinking, and drug use in young adulthood: The impacts of new freedoms and new responsibilities*. Mahwah, NJ: Lawrence Erlbaum Associates. See also Bachman, J. G., O'Malley, P. M., Schulenberg, J. E., Johnston, L. D., Bryant, A. L., & Merline, A. C. (2002). *The decline of substance use in young adulthood: Changes in social activities, roles, and beliefs*. Mahwah, NJ: Lawrence Erlbaum Associates.

*methamphetamine*, *Ritalin*, *Rohypnol*, and *GHB*. *Inhalant*, *amphetamine*, and *tranquilizer* use are slightly higher among females.

## TRENDS IN ALCOHOL USE

- Several findings about *alcohol* use in these age groups are noteworthy. First, despite the fact that it is illegal for virtually all secondary school students and most college students to purchase alcoholic beverages, experience with alcohol is almost universal among them. That is, alcohol has been tried by 47% of eighth graders, 67% of tenth graders, 78% of twelfth graders, and 86% of college students; and active use is widespread. Most important, perhaps, is the widespread occurrence of *occasions of heavy drinking*—measured by the percent reporting five or more drinks in a row at least once in the prior two-week period. Among eighth graders this statistic stands at 12%, among tenth graders at 22%, among twelfth graders at 29%, and among college students at 40%. After people pass their early 20s, this behavior recedes somewhat with age, reflected by the 36% rate found in the entire young adult sample and the 26% rate found among 29- to 30-year-olds.
- Alcohol use did not increase as use of other illicit drugs decreased among seniors from the late 1970s to the early 1990s, although it was common to hear such a “displacement hypothesis” asserted. This study demonstrates that the opposite seems to be true. After 1980, when illicit drug use was declining, the monthly prevalence of alcohol use among seniors also declined gradually, but substantially, from 72% in 1980 to 51% in 1992. *Daily alcohol use* declined from a peak of 6.9% in 1979 to 3.4% in 1992; and the prevalence of drinking *five or more drinks in a row* during the prior two-week interval fell from 41% in 1983 to 28% in 1993—nearly a one-third decline. When illicit drug use rose again in the 1990s, there was evidence that alcohol use (particularly binge drinking) was rising some as well—albeit not nearly as sharply as did marijuana use. In the late 1990s, as illicit drug use leveled in secondary schools and began a gradual decline, similar trends are observed for alcohol. Indeed, the drop in alcohol use in 2002 among secondary school students (but not among college students and young adults) is noteworthy.

### College-Noncollege Differences in Alcohol Use

- The data from college students show a quite different pattern of change in relation to alcohol use than that of twelfth graders or noncollege respondents of the same age. (See Figure 9-14 in Volume II.) From 1980 to 1993, college students showed considerably less drop-off in monthly prevalence of *alcohol* use (82% to 70%) than did high school seniors (72% to 49%). *Occasions of heavy drinking* also declined less among college students from 1980 to 1993, from 44% to 40%, compared to a decline from 41% to 28% among high school seniors. Among noncollege age-mates, the decline was from 41% to 34%. Thus, because both their noncollege age-mates and high school students were showing greater declines, the college students stood out as having maintained a high rate of binge or party drinking. Since 1993, the college students changed little (40% in 2002—the same rate observed in 1993), while their noncollege age-mates increased by 1 percentage point, to 35%; high school seniors increased to 32% in 1998, but then

decreased to 29% by 2002. Still, college students stand out as having a relatively high rate of binge or party drinking.

Because the college-bound seniors in high school are consistently less likely to report occasions of heavy drinking than the noncollege-bound, the higher rates of such drinking in college indicate that they “catch up to and pass” their peers in binge drinking after high school graduation.

- Since 1980, college students have generally had *daily drinking* rates that were slightly lower than their age peers, suggesting that they were more likely to confine their drinking to weekends, when they tend to drink a lot. College men have much higher rates of daily drinking than college women (7.0% versus 3.7% in 2002). This gender difference tends to be even larger in the noncollege group (5.3% versus 3.5%, respectively, in 2002).
- Comparisons between the college and noncollege group in terms of binge drinking have typically shown that college students are more likely to engage in this activity.

### Male-Female Differences in Alcohol Use

- There is a substantial gender difference among high school seniors in the prevalence of *occasions of heavy drinking* (23% for females versus 34% for males in 2002); this difference generally had been diminishing very gradually since the study began. (In 1975 there was a 23-percentage-point difference between them, versus a 11-point difference in 2002.)
- As just discussed, there also are substantial gender differences in alcohol use among college students, and young adults generally, with males drinking more. For example, 51% of college males report having *five or more drinks in a row* over the previous two weeks versus 33% of college females. There has not been a great deal of change in this gender difference since 1980.
- The rate of daily drinking fell considerably among the noncollege group, from 8.3% in 1980 to 3.2% in 1994, but by 2000 had risen to 5.8% with some decline thereafter. Daily drinking by the college group moved from 6.5% in 1980 to 3.0% in 1995 and increased to 5.0% in 2002.

### TRENDS IN CIGARETTE SMOKING

- Quite a number of very important findings about *cigarette smoking* among American adolescents and young adults have emerged during the life of the study. Despite the demonstrated health risks associated with smoking, young people continued to establish regular cigarette habits during late adolescence in sizeable and, during the first half of the 1990s, growing proportions. In fact, since the study began in 1975, cigarettes have consistently remained the class of abusable substances most frequently used on a daily basis by high school students.

- During most of the 1980s, when smoking rates were falling steadily among adults, we reported that smoking among adolescents was not declining. Then the situation went from bad to worse. Among eighth and tenth graders, the current smoking rate increased by about half between 1991 (when their use was first measured) and 1996; and among twelfth graders, the current smoking rate rose by nearly one third between 1992 and 1997. This study played an important role in bringing these disturbing increases in adolescent smoking to public attention during those years.

Fortunately, there have been some important declines in current smoking since 1996 in the case of eighth and tenth graders and since 1997 in the case of twelfth graders. In fact, the declines have more than offset the increases observed earlier in the 1990s. In 2002, 11% of eighth graders (versus 14% in 1991) reported smoking one or more cigarettes in the prior 30 days, as well as 18% of tenth graders (versus 21% in 1991) and 27% of twelfth graders (versus 28% in 1991). Despite these very important recent improvements, at present more than one quarter of American young people are current smokers by the time they complete high school; and other research consistently shows that smoking rates are substantially higher among those who drop out before graduating.

- **Daily smoking** rates also increased by about half among eighth graders (from a low of 7.0% in 1992 to 10.4% in 1996) and tenth graders (from a low of 12.3% in 1992 to 18.3% in 1996), while daily smoking among twelfth graders increased by 43% (from a low of 17.2% in 1992 to 24.6% in 1997). In 1997 we saw the first evidence of a change in the situation, as daily smoking rates declined among eighth graders and leveled among tenth graders. There was a significant decline in tenth and twelfth graders' daily smoking rates by 1998. All three grades have been continuing to decline in use through 2002, including declines among all three grades in 2002. Among college students there was a nearly 50% increase in smoking from 1994 (13%) through 1999 (19%)—reflecting the cohort replacement effect of the heavier smoking senior classes—before a turnaround began in 2000, decreasing the levels of use to 16% by 2002. For high school seniors, during a much earlier period (from 1977 to 1981), there had been a substantial decline in daily smoking, a leveling for nearly a decade (through 1990), and a slight decline in 1991 and 1992.
- The dangers perceived to be associated with **pack-a-day** smoking differ greatly by grade level and seem to be unrealistically low at all grade levels. Currently, nearly three quarters of the seniors (74%) report that pack-a-day smokers run a great risk of harming themselves physically or in other ways: more importantly, only 58% of the eighth graders say the same. All three grades showed a decrease in perceived risk between 1993 and 1995, as use was rising rapidly, but a slightly larger and offsetting increase between 1995 and 2000, presaging the subsequent downturn in smoking. After 2000 perceived risk leveled in the lower grades but continued to rise in grade 12, likely reflecting a cohort effect.
- Disapproval of cigarette smoking had been in decline longer: from 1991 through 1996 among eighth and tenth graders, and from 1992 to 1996 among twelfth graders. Since

then there has been an increase in disapproval in all three grades. Undoubtedly the heavy media coverage of the tobacco issue (the proposed settlement with the state attorneys general, the congressional debate, the eventual state settlements, etc.) had an important influence on these attitudes and beliefs. However, that coverage diminished considerably in 1998, raising the question of whether these changes in youth attitudes would continue. It may well be, of course, that the removal of certain kinds of cigarette advertising and promotion, combined with national and state-level anti-smoking campaigns and recent increases in cigarette prices, have served to sustain these changes.

### **Age and Cohort-Related Differences in Cigarette Smoking**

- Initiation of smoking occurs most often in grades six through nine (i.e., at modal ages 11-12 to 14-15), with rather little further initiation after high school, although a number of light smokers make the transition to heavy smoking in the first two years after high school. Analyses presented in this volume and elsewhere have shown that cigarette smoking evidences a clear “cohort effect.” That is, if a class (or birth) cohort establishes an unusually high rate of smoking at an early age relative to other cohorts, the rate is likely to remain high throughout the life cycle relative to that of other birth cohorts at equivalent ages.
- As we reported in the “Other Findings from the Study” chapter in the 1986 volume in this series, some 53% of the half-pack-a-day (or more) smokers in senior year said that they had tried to quit smoking and found they could not. Of those who had been daily smokers in twelfth grade, nearly three quarters were daily smokers seven to nine years later (based on the 1985 follow-up survey), despite the fact that in high school only 5% of them thought they would “definitely” be smoking five years hence. A more recent analysis, based on the 1995 follow-up survey, showed similar results. Nearly two thirds (63%) of those who had been daily smokers in the twelfth grade were still daily smokers seven to nine years later, although in high school only 3% of them had thought they would “definitely” be smoking five years hence. Clearly, the smoking habit is established at an early age, it is difficult to break for those young people who have it, and young people greatly overrate their own ability to quit. Additional data from the eighth and tenth grade students show us that younger children are even more likely than older ones to underestimate seriously the dangers of smoking.
- The surveys of eighth and tenth graders also show that cigarettes are almost universally available to teens. About two thirds (64%) of eighth graders and five sixths (83%) of tenth graders say that cigarettes are “fairly easy” or “very easy” for them to get, if they want them. Until 1997 there had been little change in reported availability since these questions were first asked in 1992. Over the last six years, however, perceived availability of cigarettes decreased significantly for eighth and tenth graders, quite likely reflecting the impact of new regulations and related enforcement efforts aimed at reducing the sale of cigarettes to children.

### College-Noncollege Differences in Cigarette Smoking

- A striking difference in smoking rates has long existed between college-bound and noncollege-bound high school seniors. For example, in 2002 smoking a half-pack or more per day is 2.5 times as prevalent among the noncollege-bound seniors (17.5% versus 6.7%). Among respondents of college age (one to four years past high school), those not in college show the same dramatically higher rate of smoking than those who are in college, with half-pack-a-day smoking standing at 21.9% and 7.9%, respectively. Clearly the differences precede college attendance.
- In the first half of the 1990s, smoking rose some among college students and their same-age peers, although the increases were not as steep for either group as they were among high school seniors. But in 1998 and 1999, while smoking was declining among secondary school students at all grades, smoking increased significantly for college students, no doubt reflecting the cohort effect from earlier, heavier-smoking classes of high school seniors moving into the older age groups. Between 1991 and 1999, the 30-day prevalence of cigarette smoking by college students rose from 23% to 31%, or by about one third, and daily smoking rose from 14% to 19%—or by about 40%. The year 2000 showed, for the first time in several years, a decline in college student smoking, with this decline continuing in 2001 but not in 2002 (27% current prevalence).

### Male-Female Differences in Cigarette Smoking

- In the 1970s, high school senior females caught up to and passed senior males in their rates of *current smoking*. Both genders then showed a decline in use followed by a long, fairly level period, with use by females consistently higher, but with the gender difference diminishing. In the early 1990s there was another crossover—rates rose among males and declined among females. Both genders showed increasing use between 1992 and 1997 and then a decline in use since.

Among college students, females had slightly higher probabilities of being daily smokers from 1980 through 1994—although this long-standing gender difference was not true among their age peers not in college. However, there was a crossover from 1995 through 2002—no doubt an echo of the crossover among seniors in 1991.

## RACIAL/ETHNIC COMPARISONS

The three largest ethnic groupings—Whites, African Americans, and Hispanics taken as a group—are examined here, for eighth, tenth, and twelfth graders. (Sample size limitations simply do not allow finer subgroup breakdowns unless many years are combined. Separate publications from the study have done just that.) A number of interesting findings emerge from

the comparison of these three groups, and the reader is referred to chapters 4 and 5 of Volume I for a full discussion of them.<sup>10</sup>

- African American seniors have consistently shown lower usage rates of most drugs, licit and illicit, than White seniors; this also is true at the lower grade levels where few have yet dropped out of school. The differences are quite large for some drugs, including *inhalants*, *LSD*, and *other cocaine*, at all three grade levels.
- African American students have a much lower 30-day prevalence rate of *cigarette smoking* than White students (12% versus 33% in senior year, in 2002) because their smoking rate continued to decline after 1983, while the rate for White students stabilized for some years. (Smoking rates had been rising among White seniors and African American seniors after 1992, but by 1998 there was a leveling, and since then a reversal, in both groups in all grades.) The White eighth, tenth, and twelfth graders' cigarette use declined significantly in 2002. All three ethnic groups showed a decline in 2002 for all three grades.
- In twelfth grade, *occasions of heavy drinking* are much less likely to be reported by African American students (12%) than by White students (34%) or Hispanic students (26%).
- In twelfth grade, of the three racial/ethnic groups, Whites tend to have the highest rates of use on a number of drugs, including *inhalants*, *hallucinogens*, *LSD* specifically, *hallucinogens other than LSD*, *ecstasy*, *heroin without a needle*, *amphetamines*, *sedatives (barbiturates)*, *tranquilizers*, *narcotics other than heroin*, *alcohol*, *getting drunk*, *cigarettes*, and *smokeless tobacco*.
- However, Hispanics have the highest usage rate in senior year for a number of the most dangerous drugs, for example, *heroin with a needle*, *crack*, and *crystal meth (ice)*. Further, in eighth grade, Hispanics have the highest rates not only for these drugs, but for many of the others, as well. For example, in eighth grade, the annual prevalence of *marijuana* for Hispanics is 21%, versus 15% for Whites and 13% for African Americans; for *binge drinking*, 18% for Hispanics, 13% for Whites, and 9% for African Americans. In other words, Hispanics have the highest rates of use for many drugs in eighth grade, but not in twelfth, which suggests that their considerably higher dropout rate (compared to Whites and African Americans) may change their relative ranking by twelfth grade.

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<sup>10</sup>Periodically we publish comparisons that contain a number of the smaller racial/ethnic groups in the population, based on data combined for a number of contiguous years in order to attain adequate sample sizes. The first was Bachman, J. G., Wallace, J. M. Jr., O'Malley, P. M., Johnston, L. D., Kurth, C. L., & Neighbors, H. W. (1991). Racial/ethnic differences in smoking, drinking, and illicit drug use among American high school seniors, 1976-1989. *American Journal of Public Health*, 81, 372-377. More recent articles are: Wallace, J. M., Jr., Bachman J. G., O'Malley, P. M., Johnston, L. D., Schulenberg, J. E., & Cooper, S. M. (2002). Tobacco, alcohol and illicit drug use: Racial and ethnic differences among U.S. high school seniors, 1976-2000. *Public Health Reports*, 117(Supplement 1), S67-S75; and Wallace, J. M., Jr., Bachman J. G., O'Malley, P. M., Schulenberg, J. E., Cooper, S. M., & Johnston, L. D. (2003). Gender and ethnic differences in smoking, drinking, and illicit drug use among American 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> grade students, 1976-2000. *Addictions*, 98, 225-234.



- With regard to trends, seniors in all three racial/ethnic groups exhibited a decline in **cocaine** use from 1986 through 1992, although the decline was less steep among African American seniors because their earlier increase in use was not as large as the increase among White and Hispanic students.
- For virtually **all of the illicit drugs**, the three groups have tended to trend in parallel. Because White seniors had achieved the highest level of use on a number of drugs—including **amphetamines**, **sedatives (barbiturates)**, and **tranquilizers**—they also had the largest declines; African Americans have had the lowest rates and, therefore, the smallest declines.
- The important racial/ethnic differences in **cigarette smoking** noted earlier among high school seniors have emerged during the life of the study. The three groups were fairly similar in their smoking rates during the mid-1970s, and all three mirrored the general decline in smoking from 1977 through 1981. From 1981 through 1992, however, smoking rates declined very little, if at all, for Whites and Hispanics, but the rates for African Americans continued to decline steadily. As a result, by 1992 the daily smoking rate for African Americans was one fifth that for Whites. Subsequently, all three ethnic groups of twelfth graders exhibited fairly parallel trends in smoking.

## **DRUG USE IN EIGHTH GRADE**

It may be useful to focus specifically on the youngest age group in the study—the eighth graders, most of whom are 13 or 14 years old—because the exceptional levels of both licit and illicit drug use that they already have attained help illustrate the nation’s urgent need to continue to address the substance abuse problems among its young.

- By eighth grade, 47% of youngsters report having tried **alcohol** (more than just a few sips), and about one fifth (21%) say they have already been **drunk** at least once.
- Nearly a third of the eighth graders (31%) have tried **cigarettes**, and one in nine (11%) say they have smoked in the prior month. Shocking to most adults is the fact that only 58% of eighth graders recognize that there is great risk associated with being a pack-a-day smoker. While an increasing proportion will recognize the risk by twelfth grade, for many this is too late, since they already will have become smokers.
- **Smokeless tobacco** has been tried by 17% of male eighth graders, is used currently by 5.4% of them, and is used daily by 1.5%. (Rates are much higher among males than among females.)
- Among eighth graders, 1 in 7 (15%) have used **inhalants**, and 1 in 26 (3.8%) say they have used them in the past month. This is the only class of drugs for which use is substantially higher in eighth grade than in tenth or twelfth grade.

- **Marijuana** has been tried by nearly one in every five eighth graders (19%) and has been used in the prior month by almost one in every twelve (8.3%).
- A surprisingly large number of eighth-grade students (8.7%) say they have tried prescription-type **amphetamines**; 2.8% say they have used them in the prior 30 days.
- Relatively few eighth graders say they have tried most of the **other illicit drugs** yet. (This is consistent with the retrospective reports from seniors concerning the grades in which they first used the various drugs.) But the proportions having at least some experience with them is not inconsequential because a 3.3% prevalence rate, for example, on average represents 1 child in every 30-student classroom. The 2002 eighth-grade proportions reporting experience with the other illicit drugs are **ecstasy** (4.3%), **tranquilizers** (4.3%), **methamphetamine** (3.5%), **hallucinogens other than LSD** (3.3%), **cocaine other than crack** (2.8%), **crack** (2.5%), **LSD** (2.5%), **steroids** (2.5% overall, and 3.2% among males), **heroin** (1.6%), and **Rohypnol** (0.8%).
- In total, 14% of all eighth graders in 2002—one in every seven—have tried **some illicit drug other than marijuana** (excluding inhalants). Put another way, in an average 30-student classroom of eighth graders, about 4 have used some drug other than marijuana and nearly 6 have used marijuana.
- The very large number of students who have already begun use of the so-called “gateway drugs” (**tobacco, alcohol, inhalants, and marijuana**) suggests that a substantial number of eighth-grade students are already at risk of proceeding further to such drugs as LSD, cocaine, amphetamines, and heroin.

## DRUG USE BY AGE 40

Because we have now followed up graduating high school seniors into their 40s, we can characterize the drug-using history of today’s 40-year-olds. This is important not only because it characterizes how use by these respondents has developed over more than two decades since they left high school, but also because many of them are now themselves the parents of adolescents. Their active use of substances may serve as role modeling for their children, and their own past experience may complicate their communications with their children regarding drugs. The level of use they have attained is truly impressive. (See chapter 4 of Volume II for greater detail and discussion.)

- Among 40-year-old high school graduates in 2002, we estimate that three quarters (76%) have tried **marijuana** and that over two thirds (68%) have tried an **illicit drug other than marijuana** (estimates are adjusted for panel attrition as described in Volume II).

Their current behavior is far less extreme than those statistics would imply, however. “Only” 1 in 7 (15%) indicates using marijuana in the last 12 months, while 1 in 10 (10%) affirm use of any other illicit drug in that time period. (Their past-month prevalence rates

are lower still—8.1% and 3.9%, respectively.) At least 1 in 33 40-year-olds (3.0%) is a **current daily marijuana** user, though a great many more have been so at some time in the past.

- Quite high proportions have had some experience during their lifetime with several of the specific illicit drugs other than marijuana. These include **amphetamines** (49%), **cocaine** in any form (44%), **non-crack forms of cocaine** (38%), **tranquilizers** (33%), **hallucinogens** of any type (30%), **narcotics other than heroin** (28%), **sedatives (barbiturates)** (24%), **LSD** (20%), and **other hallucinogens** (19%). In sum, today's 40-year-olds are a very drug-experienced cohort of adults, as might be expected from the fact that they graduated from high school near the peak of the drug epidemic.
- Among the illicit drugs other than marijuana that have been used in just the past year by this age group (outside of medical regimen) are **cocaine** (3.7% annual prevalence), **tranquilizers** (4.2%), **sedatives (barbiturates)** (1.0%), **narcotics other than heroin** (3.4%), and **amphetamines** (1.4%). There is very little active use being reported by our respondents at this age of **LSD**, **other hallucinogens**, **crack**, or **heroin**. (Of course, we would not expect *heavy* heroin or crack users to have remained in the panel studies.)
- **Alcohol** consumption is relatively high at this age, with 65% indicating that they consumed at least one alcoholic drink in the prior 30 days, 6.6% indicating current **daily drinking** (defined as drinking on 20 or more occasions in the prior 30 days), and 25% indicating **occasional heavy drinking** (defined as five or more drinks on at least one occasion in the prior two weeks).
- Nearly one in five (19%) 40-year-old high school graduates currently smokes **cigarettes**. Almost all of those are current **daily smokers**.

## SUMMARY AND CONCLUSIONS

We can summarize the findings on trends as follows: over more than a decade—from the late 1970s to the early 1990s—there were very appreciable declines in use of a number of **illicit drugs** among twelfth-grade students and even larger declines in their use among American college students and young adults. These substantial improvements—which seem largely explainable in terms of changes in attitudes about drug use, beliefs about the risks of drug use, and peer norms against drug use—have some extremely important policy implications. One is that these various substance-using behaviors among American young people are malleable—they *can* be changed. It has been done before. The second is that demand-side factors appear to have been pivotal in bringing about those changes. The reported levels of marijuana availability, as reported by high school seniors, have held fairly steady throughout the life of the study. (Moreover, both abstainers and quitters rank availability and price very low on their list of reasons for not using.) And, in fact, the perceived availability of cocaine actually was rising during the beginning of the sharp decline in cocaine and crack use, which occurred when the risks associated with that drug suddenly rose sharply.

However, improvements surely are not inevitable; and, when they occur, they should not be taken for granted. Relapse is always possible and, indeed, just such a “relapse” in the longer-term epidemic occurred during the early to mid-1990s, as the country let down its guard on many fronts. (See chapter 8 of Volume I for a more detailed discussion of this point.)

In 1992, eighth graders exhibited a significant increase in annual use of *marijuana*, *cocaine*, *LSD*, and *hallucinogens other than LSD*, as well as an increase in *inhalant* use. (In fact, all five populations showed some increase in *LSD* use, continuing a longer-term trend for college students and young adults.) Further, the attitudes and beliefs of seniors regarding drug use began to soften.

In 1993, use of several drugs began to rise among tenth and twelfth graders, as well, fulfilling our earlier predictions that we had made based on their eroding beliefs about the dangers of drugs and their attitudes about drug use. Increases occurred in a number of the so-called “gateway drugs”—*marijuana*, *cigarettes*, and *inhalants*—increases that we argued boded ill for the use of later drugs in the usual sequence of drug-use involvement. Indeed, the proportion of students reporting the use of *any illicit drug other than marijuana* rose steadily after 1991 among eighth and tenth graders and after 1992 among twelfth graders. (This proportion increased by more than half among eighth graders, with annual prevalence rising from 8.4% in 1991 to 13.1% in 1996.) The softening attitudes about *crack* and *other forms of cocaine* also provided a basis for concern—the use of both increased fairly steadily through 1998.

Over the years, this study has demonstrated that changes in perceived risk and disapproval have been important causes of change in the use of several drugs. These beliefs and attitudes surely are influenced by the amount and nature of public attention paid to the drug issue in the historical period during which young people are growing up. A substantial decline in attention to this issue in the early 1990s very likely helps to explain why the increases in perceived risk and disapproval among students ceased and began to backslide. News coverage of the drug issue plummeted between 1989 and 1993 (although it made a considerable comeback as surveys—including this one—began to document that the problem was worsening again), and the media’s *pro bono* placement of ads from the Partnership for a Drug-Free America also fell considerably. (During that period the twelfth graders in this study showed a steady decline in their recalled exposure to such ads and in the judged impact of such ads on their own drug-taking behavior.)

Also, the deterioration in the drug abuse situation first began among our youngest cohorts—perhaps because they had not had the same opportunities for vicarious learning from the adverse drug experiences of people around them and people they learn about through the media. Clearly there was a danger that, as the drug epidemic subsided in the 1980s and early 1990s, newer cohorts would have far less opportunity to learn through informal means about the dangers of drugs—that what we have called a “generational forgetting” of those risks would occur through a process of generational replacement of older, more drug-savvy cohorts with newer, more naive ones. If true, this suggests that as drug use subsides, as it did by the early 1990s, the nation must double its efforts to ensure that such naive cohorts learn these lessons about the dangers of drugs through more formal means—from schools, parents, and focused messages in the media, for example—and that this more formalized prevention effort be *institutionalized* so that it will endure for the long term. Clearly, for the foreseeable future, American young people will be

aware of the psychoactive potential of a host of drugs and will continue to have access to them. That means that each new generation of young people must learn the reasons that they should *not* use drugs. Otherwise their natural curiosity and desires for new experiences will lead a great many of them to use drugs.

The following facts help to put into perspective the magnitude and variety of substance use problems that presently remain among American young people:

- By the end of eighth grade, a third (32%) of American young people have tried an ***illicit drug*** (if inhalants are included as an illicit drug), and by twelfth grade, more than half (55%) have done so.
- By their late 20s, 6 in every 10 (60%) of today's American young adults have tried an ***illicit drug***, and a third (32%) have tried some ***illicit drug other than marijuana*** (usually in addition to marijuana). (These figures do not include inhalants.)
- Today more than one in seven young Americans (15% in 2002) has tried ***cocaine*** by the age of 30, and 8% have tried it by their senior year of high school (i.e., by age 17 or 18). More than 1 in every 25 seniors (3.8%) has tried ***crack***. In the young adult sample, 1 in 20 (4.9%) has tried crack by age 29-30.
- Over 1 in every 16 high school seniors (6.0%) in 2002 currently smokes ***marijuana daily***. Among young adults aged 19 to 28, the percentage is slightly less (4.5%). Among those same seniors in 2002, one in every six (16%) had been daily marijuana smokers at some time for at least a month, and among young adults the comparable figure is nearly one in five (19%).
- Three in ten high school seniors (29%) consumed ***five or more drinks in a row*** at least once in the two weeks prior to the survey, and such behavior tends to increase among young adults one to four years past high school. The prevalence of such behavior among male college students reaches 51%.
- More than one quarter (27%) of high school seniors in 2002 were current ***cigarette*** smokers, and 17% already were current daily smokers. In addition, we know from studying previous cohorts that many young adults increase their rates of smoking within a year or so after they leave high school.
- Despite the substantial improvement in this country's drug situation in the 1980s and the early 1990s, it is still true that this nation's secondary school students and young adults show a level of involvement with illicit drugs that is as great as has been documented in any other industrialized nation in the world.<sup>11</sup> Even by longer-term historical standards in

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<sup>11</sup>A published report from an international collaborative study, modeled largely after Monitoring the Future, suggests that in 2000 none of the 30 European countries in which national school surveys of 15- to 16-year-olds were conducted had rates of illicit drug use comparable to those observed in the United States. (Heroin was the one important exception.) See Hibell, B., Anderson, B., Ahlström, S., Balakireva, O., Bjarnasson, T., Kokkevi, A., & Morgan, M. (Eds.). (2000). *The 1999 ESPAD report (The European School Survey Project on Alcohol and Other Drugs): Alcohol and other drug use among students in 30 European countries*. Stockholm: The Swedish Council for Information on Alcohol and Other Drugs, and the Council of Europe.

this country, these rates remain extremely high, though in general they are not as high as in the peak years of the epidemic in the late 1970s. Heavy drinking also remains widespread and troublesome; and certainly the continuing initiation of a large, though declining, proportion of young people to cigarette smoking remains a matter of the greatest public health concern.

- Finally, we note the seemingly unending capacity of pharmacological experts and amateurs to discover new substances with abuse potential that can be used to alter mood and consciousness. There is also a great capacity for our young people to discover the abuse potential of existing products, such as Rofenon, and to “rediscover” older drugs, such as *LSD* and *heroin*. While as a society we have made significant progress on a number of fronts in the fight against drug abuse, we must remain vigilant against the opening of new fronts, as well as the reemergence of trouble on older ones.
- In fact, one of the dynamics that keeps the drug epidemic rolling is the emergence of new drugs, whose hazards are little known. In 1999 we saw this happen with the drug *ecstasy (MDMA)*. Other drugs like *Rohypnol*, *ketamine*, *GHB*, and *OxyContin* have appeared recently and now must be added to the list of drugs under study. The spread of such new drugs appears to be facilitated and hastened today by young people’s widespread use of chat rooms and other sites on the Internet. We predict a continuous flow of such new substances onto the scene and believe that the task of rapidly documenting their emergence, establishing their adverse consequences, and quickly demystifying them will remain important means by which policymakers, researchers, and educators deal with the continuing threats posed by such drugs.
- The drug problem is not an enemy that can be vanquished, as in a war. It is more a recurring and relapsing problem that must be contained to the extent possible on a long-term, ongoing basis. Therefore, it is a problem that requires an ongoing, dynamic response from our society—one that takes into account the continuing generational replacement of our children, the generational forgetting of the dangers of drugs that can occur with that replacement, and the perpetual additional tracking of new abusable substances that will come onto the scene and threaten to lure our young people into involvement with drugs.

**TABLE 2-1**  
**Trends in Lifetime Prevalence of Use of Various Drugs**  
**for Eighth, Tenth, and Twelfth Graders, College Students, and Young Adults (Ages 19-28)**  
(Entries are percentages)

	<u>Lifetime</u>												'01-'02 change
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	
Any Illicit Drug <sup>a</sup>													
8th Grade	18.7	20.6	22.5	25.7	28.5	31.2	29.4	29.0	28.3	26.8	26.8	24.5	-2.3s
10th Grade	30.6	29.8	32.8	37.4	40.9	45.4	47.3	44.9	46.2	45.6	45.6	44.6	-1.1
12th Grade	44.1	40.7	42.9	45.6	48.4	50.8	54.3	54.1	54.7	54.0	53.9	53.0	-0.9
College Students	50.4	48.8	45.9	45.5	45.5	47.4	49.0	52.9	53.2	53.7	53.6	51.8	-1.8
Young Adults	62.2	60.2	59.6	57.5	57.4	56.4	56.7	57.0	57.4	58.2	58.1	59.0	+0.9
Any Illicit Drug Other Than Marijuana <sup>a,b</sup>													
8th Grade	14.3	15.6	16.8	17.5	18.8	19.2	17.7	16.9	16.3	15.8	17.0	13.7	-3.3sss
10th Grade	19.1	19.2	20.9	21.7	24.3	25.5	25.0	23.6	24.0	23.1	23.6	22.1	-1.5
12th Grade	26.9	25.1	26.7	27.6	28.1	28.5	30.0	29.4	29.4	29.0	30.7	29.5	-1.2
College Students	25.8	26.1	24.3	22.0	24.5	22.7	24.4	24.8	25.5	25.8	26.3	26.9	+0.6
Young Adults	37.8	37.0	34.6	33.4	32.8	31.0	30.5	29.9	30.2	31.3	31.6	32.8	+1.2
Any Illicit Drug Including Inhalants <sup>a,c</sup>													
8th Grade	28.5	29.6	32.3	35.1	38.1	39.4	38.1	37.8	37.2	35.1	34.5	31.6	-2.9ss
10th Grade	36.1	36.2	38.7	42.7	45.9	49.8	50.9	49.3	49.9	49.3	48.8	47.7	-1.1
12th Grade	47.6	44.4	46.6	49.1	51.5	53.5	56.3	56.1	56.3	57.0	56.0	54.6	-1.4
College Students	52.0	50.3	49.1	47.0	47.0	49.1	50.7	55.4	54.4	54.6	53.1	52.3	-0.9
Young Adults	63.4	61.2	61.2	58.5	59.0	58.2	58.4	58.5	58.5	59.5	59.0	59.6	+0.6
Marijuana/Hashish													
8th Grade	10.2	11.2	12.6	16.7	19.9	23.1	22.6	22.2	22.0	20.3	20.4	19.2	-1.2
10th Grade	23.4	21.4	24.4	30.4	34.1	39.8	42.3	39.6	40.9	40.3	40.1	38.7	-1.4
12th Grade	36.7	32.6	35.3	38.2	41.7	44.9	49.6	49.1	49.7	48.8	49.0	47.8	-1.1
College Students	46.3	44.1	42.0	42.2	41.7	45.1	46.1	49.9	50.8	51.2	51.0	49.5	-1.5
Young Adults	58.6	56.4	55.9	53.7	53.6	53.4	53.8	54.4	54.6	55.1	55.7	56.8	+1.1
Inhalants <sup>c,d</sup>													
8th Grade	17.6	17.4	19.4	19.9	21.6	21.2	21.0	20.5	19.7	17.9	17.1	15.2	-1.9s
10th Grade	15.7	16.6	17.5	18.0	19.0	19.3	18.3	18.3	17.0	16.6	15.2	13.5	-1.6s
12th Grade	17.6	16.6	17.4	17.7	17.4	16.6	16.1	15.2	15.4	14.2	13.0	11.7	-1.4
College Students	14.4	14.2	14.8	12.0	13.8	11.4	12.4	12.8	12.4	12.9	9.6	7.7	-1.9
Young Adults	13.4	13.5	14.1	13.2	14.5	14.1	14.1	14.2	14.2	14.3	12.8	12.4	-0.5
Nitrites <sup>e</sup>													
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	1.6	1.5	1.4	1.7	1.5	1.8	2.0	2.7	1.7	0.8	1.9	1.5	-0.4
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—
Young Adults	1.4	1.2	1.3	1.0	—	—	—	—	—	—	—	—	—

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**TABLE 2-1 (cont.)**  
**Trends in Lifetime Prevalence of Use of Various Drugs**  
**for Eighth, Tenth, and Twelfth Graders, College Students, and Young Adults (Ages 19-28)**

	Lifetime												'01-'02 change
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	
Hallucinogens <sup>b,f</sup>													
8th Grade	3.2	3.8	3.9	4.3	5.2	5.9	5.4	4.9	4.8	4.6	‡ 5.2	4.1	-1.0
10th Grade	6.1	6.4	6.8	8.1	9.3	10.5	10.5	9.8	9.7	8.9	‡ 8.9	7.8	-1.0
12th Grade	9.6	9.2	10.9	11.4	12.7	14.0	15.1	14.1	13.7	13.0	‡ 14.7	12.0	-2.7s
College Students	11.3	12.0	11.8	10.0	13.0	12.6	13.8	15.2	14.8	14.4	14.8	13.6	-1.2
Young Adults	15.7	15.7	15.4	15.4	16.1	16.4	16.8	17.4	18.0	18.4	18.3	19.6	+1.3
LSD													
8th Grade	2.7	3.2	3.5	3.7	4.4	5.1	4.7	4.1	4.1	3.9	3.4	2.5	-1.0s
10th Grade	5.6	5.8	6.2	7.2	8.4	9.4	9.5	8.5	8.5	7.6	6.3	5.0	-1.4s
12th Grade	8.8	8.6	10.3	10.5	11.7	12.6	13.6	12.6	12.2	11.1	10.9	8.4	-2.5ss
College Students	9.6	10.6	10.6	9.2	11.5	10.8	11.7	13.1	12.7	11.8	12.2	8.6	-3.5ss
Young Adults	13.5	13.8	13.6	13.8	14.5	15.0	15.0	15.7	16.2	16.4	16.0	15.1	-0.9
Hallucinogens Other Than LSD <sup>b</sup>													
8th Grade	1.4	1.7	1.7	2.2	2.5	3.0	2.6	2.5	2.4	2.3	‡ 3.9	3.3	-0.6
10th Grade	2.2	2.5	2.8	3.8	3.9	4.7	4.8	5.0	4.7	4.8	‡ 6.6	6.3	-0.3
12th Grade	3.7	3.3	3.9	4.9	5.4	6.8	7.5	7.1	6.7	6.9	‡ 10.4	9.2	-1.2
College Students	6.0	5.7	5.4	4.4	6.5	6.5	7.5	8.7	8.8	8.2	10.7	11.0	+0.3
Young Adults	8.4	8.0	7.6	7.4	7.8	7.9	8.5	9.4	9.3	9.9	12.0	15.0	+3.0sss
PCP <sup>g</sup>													
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	2.9	2.4	2.9	2.8	2.7	4.0	3.9	3.9	3.4	3.4	3.5	3.1	-0.5
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—
Young Adults	3.1	2.0	1.9	2.0	2.2	1.9	2.4	2.7	2.3	2.3	3.1	2.5	-0.6
MDMA (Ecstasy) <sup>h</sup>													
8th Grade	—	—	—	—	—	3.4	3.2	2.7	2.7	4.3	5.2	4.3	-0.9
10th Grade	—	—	—	—	—	5.6	5.7	5.1	6.0	7.3	8.0	6.6	-1.4
12th Grade	—	—	—	—	—	6.1	6.9	5.8	8.0	11.0	11.7	10.5	-1.2
College Students	2.0	2.9	2.3	2.1	3.1	4.3	4.7	6.8	8.4	13.1	14.7	12.7	-1.9
Young Adults	3.2	3.9	3.8	3.8	4.5	5.2	5.1	7.2	7.1	11.6	13.0	14.6	+1.6

(Table continued on next page)



**TABLE 2-1 (cont.)**  
**Trends in Lifetime Prevalence of Use of Various Drugs**  
**for Eighth, Tenth, and Twelfth Graders, College Students, and Young Adults (Ages 19-28)**

	<u>Lifetime</u>												<u>'01-'02</u> <u>change</u>
	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	
Cocaine													
8th Grade	2.3	2.9	2.9	3.6	4.2	4.5	4.4	4.6	4.7	4.5	4.3	3.6	-0.7
10th Grade	4.1	3.3	3.6	4.3	5.0	6.5	7.1	7.2	7.7	6.9	5.7	6.1	+0.5
12th Grade	7.8	6.1	6.1	5.9	6.0	7.1	8.7	9.3	9.8	8.6	8.2	7.8	-0.4
College Students	9.4	7.9	6.3	5.0	5.5	5.0	5.6	8.1	8.4	9.1	8.6	8.2	-0.4
Young Adults	21.0	19.5	16.9	15.2	13.7	12.9	12.1	12.3	12.8	12.7	13.1	13.5	+0.4
Crack <sup>i</sup>													
8th Grade	1.3	1.6	1.7	2.4	2.7	2.9	2.7	3.2	3.1	3.1	3.0	2.5	-0.4
10th Grade	1.7	1.5	1.8	2.1	2.8	3.3	3.6	3.9	4.0	3.7	3.1	3.6	+0.5
12th Grade	3.1	2.6	2.6	3.0	3.0	3.3	3.9	4.4	4.6	3.9	3.7	3.8	+0.1
College Students	1.5	1.7	1.3	1.0	1.8	1.2	1.4	2.2	2.4	2.5	2.0	1.9	-0.2
Young Adults	4.8	5.1	4.3	4.4	3.8	3.9	3.6	3.8	4.3	4.6	4.7	4.3	-0.4
Other Cocaine <sup>j</sup>													
8th Grade	2.0	2.4	2.4	3.0	3.4	3.8	3.5	3.7	3.8	3.5	3.3	2.8	-0.5
10th Grade	3.8	3.0	3.3	3.8	4.4	5.5	6.1	6.4	6.8	6.0	5.0	5.2	+0.2
12th Grade	7.0	5.3	5.4	5.2	5.1	6.4	8.2	8.4	8.8	7.7	7.4	7.0	-0.4
College Students	9.0	7.6	6.3	4.6	5.2	4.6	5.0	7.4	7.8	8.1	8.3	8.6	+0.3
Young Adults	19.8	18.4	15.1	13.9	12.4	11.9	11.3	11.5	11.8	11.7	12.1	12.8	+0.7
Heroin <sup>k</sup>													
8th Grade	1.2	1.4	1.4	2.0	2.3	2.4	2.1	2.3	2.3	1.9	1.7	1.6	-0.1
10th Grade	1.2	1.2	1.3	1.5	1.7	2.1	2.1	2.3	2.3	2.2	1.7	1.8	+0.2
12th Grade	0.9	1.2	1.1	1.2	1.6	1.8	2.1	2.0	2.0	2.4	1.8	1.7	-0.1
College Students	0.5	0.5	0.6	0.1	0.6	0.7	0.9	1.7	0.9	1.7	1.2	1.0	-0.3
Young Adults	0.9	0.9	0.9	0.8	1.1	1.3	1.3	1.6	1.7	1.8	2.0	1.8	-0.2
With a needle <sup>l</sup>													
8th Grade	—	—	—	—	1.5	1.6	1.3	1.4	1.6	1.1	1.2	1.0	-0.1
10th Grade	—	—	—	—	1.0	1.1	1.1	1.2	1.3	1.0	0.8	1.0	+0.2
12th Grade	—	—	—	—	0.7	0.8	0.9	0.8	0.9	0.8	0.7	0.8	+0.1
College Students	—	—	—	—	0.4	0.1	0.2	0.5	0.8	0.7	0.2	0.3	+0.2
Young Adults	—	—	—	—	0.4	0.4	0.3	0.4	0.6	0.4	0.6	0.4	-0.1
Without a needle <sup>l</sup>													
8th Grade	—	—	—	—	1.5	1.6	1.4	1.5	1.4	1.3	1.1	1.0	-0.1
10th Grade	—	—	—	—	1.1	1.7	1.7	1.7	1.6	1.7	1.3	1.3	+0.1
12th Grade	—	—	—	—	1.4	1.7	2.1	1.6	1.8	2.4	1.5	1.6	+0.1
College Students	—	—	—	—	0.5	1.0	1.2	2.1	1.0	2.5	1.3	1.2	-0.2
Young Adults	—	—	—	—	0.9	1.3	1.5	1.7	1.9	2.1	2.1	1.8	-0.3
Other Narcotics <sup>m,n</sup>													
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	6.6	6.1	6.4	6.6	7.2	8.2	9.7	9.8	10.2	10.6	9.9	10.1	+0.2 <sup>n</sup>
College Students	7.3	7.3	6.2	5.1	7.2	5.7	8.2	8.7	8.7	8.9	11.0	10.6	-0.4 <sup>n</sup>
Young Adults	9.3	8.9	8.1	8.2	9.0	8.3	9.2	9.1	9.5	10.0	11.5	12.3	+0.8 <sup>n</sup>

(Table continued on next page)

**TABLE 2-1 (cont.)**  
**Trends in Lifetime Prevalence of Use of Various Drugs**  
**for Eighth, Tenth, and Twelfth Graders, College Students, and Young Adults (Ages 19-28)**

	Lifetime												'01-'02 change
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	
Amphetamines <sup>m</sup>													
8th Grade	10.5	10.8	11.8	12.3	13.1	13.5	12.3	11.3	10.7	9.9	10.2	8.7	-1.5s
10th Grade	13.2	13.1	14.9	15.1	17.4	17.7	17.0	16.0	15.7	15.7	16.0	14.9	-1.1
12th Grade	15.4	13.9	15.1	15.7	15.3	15.3	16.5	16.4	16.3	15.6	16.2	16.8	+0.5
College Students	13.0	10.5	10.1	9.2	10.7	9.5	10.6	10.6	11.9	12.3	12.4	11.9	-0.5
Young Adults	22.4	20.2	18.7	17.1	16.6	15.3	14.6	14.3	14.1	15.0	15.0	14.8	-0.2
Methamphetamine <sup>o,p</sup>													
8th Grade	—	—	—	—	—	—	—	—	4.5	4.2	4.4	3.5	-0.9
10th Grade	—	—	—	—	—	—	—	—	7.3	6.9	6.4	6.1	-0.3
12th Grade	—	—	—	—	—	—	—	—	8.2	7.9	6.9	6.7	-0.2
College Students	—	—	—	—	—	—	—	—	7.1	5.1	5.3	5.0	-0.3
Young Adults	—	—	—	—	—	—	—	—	8.8	9.3	9.0	9.1	+0.1
Ice <sup>p</sup>													
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	3.3	2.9	3.1	3.4	3.9	4.4	4.4	5.3	4.8	4.0	4.1	4.7	+0.6
College Students	1.3	0.6	1.6	1.3	1.0	0.8	1.6	2.2	2.8	1.3	2.3	2.0	-0.2
Young Adults	2.9	2.2	2.7	2.5	2.1	3.1	2.5	3.4	3.3	3.9	4.0	4.1	+0.1
Sedatives													
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	6.2	5.5	6.3	7.0	7.4	7.6	8.1	8.7	8.9	9.2	8.7	9.5	+0.9
College Students	3.5	3.8	3.5	3.2	4.0	4.6	5.2	5.7	6.7	6.9	6.0	5.9	-0.1
Young Adults	8.2	7.4	6.5	6.4	6.7	6.6	6.5	6.9	7.4	8.1	7.8	8.0	+0.2
Methaqualone <sup>m,q</sup>													
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	1.3	1.6	0.8	1.4	1.2	2.0	1.7	1.6	1.8	0.8	1.1	1.5	+0.4
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—
Tranquilizers <sup>b,m</sup>													
8th Grade	3.8	4.1	4.4	4.6	4.5	5.3	4.8	4.6	4.4	4.4	5.0	4.3	-0.7
10th Grade	5.8	5.9	5.7	5.4	6.0	7.1	7.3	7.8	7.9	8.0	9.2	8.8	-0.3
12th Grade	7.2	6.0	6.4	6.6	7.1	7.2	7.8	8.5	9.3	8.9	10.3	11.4	+1.2
College Students	6.8	6.9	6.3	4.4	5.4	5.3	6.9	7.7	8.2	8.8	9.7	10.7	+1.0
Young Adults	11.8	11.3	10.5	9.9	9.7	9.3	8.6	9.6	9.6	10.5	11.9	13.4	+1.5s
Rohypnol <sup>r</sup>													
8th Grade	—	—	—	—	—	1.5	1.1	1.4	1.3	1.0	1.1	0.8	-0.3
10th Grade	—	—	—	—	—	1.5	1.7	2.0	1.8	1.3	1.5	1.3	-0.2
12th Grade	—	—	—	—	—	1.2	1.8	3.0	2.0	1.5	1.7	—	—
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—

(Table continued on next page)

**TABLE 2-1 (cont.)**  
**Trends in Lifetime Prevalence of Use of Various Drugs**  
**for Eighth, Tenth, and Twelfth Graders, College Students, and Young Adults (Ages 19-28)**

	<u>Lifetime</u>												<u>'01-'02</u> <u>change</u>
	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	
Alcohol <sup>q</sup>													
Any use													
8th Grade	70.1	69.3	‡55.7	55.8	54.5	55.3	53.8	52.5	52.1	51.7	50.5	47.0	-3.5ss
10th Grade	83.8	82.3	‡71.6	71.1	70.5	71.8	72.0	69.8	70.6	71.4	70.1	66.9	-3.2ss
12th Grade	88.0	87.5	‡80.0	80.4	80.7	79.2	81.7	81.4	80.0	80.3	79.7	78.4	-1.3
College Students	93.6	91.8	89.3	88.2	88.5	88.4	87.3	88.5	88.0	86.6	86.1	86.0	-0.1
Young Adults	94.1	93.4	92.1	91.2	91.6	91.2	90.7	90.6	90.2	90.7	89.9	90.2	+0.3
Been Drunk <sup>p</sup>													
8th Grade	26.7	26.8	26.4	25.9	25.3	26.8	25.2	24.8	24.8	25.1	23.4	21.3	-2.1s
10th Grade	50.0	47.7	47.9	47.2	46.9	48.5	49.4	46.7	48.9	49.3	48.2	44.0	-4.2sss
12th Grade	65.4	63.4	62.5	62.9	63.2	61.8	64.2	62.4	62.3	62.3	63.9	61.6	-2.3
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—
Cigarettes													
Any use													
8th Grade	44.0	45.2	45.3	46.1	46.4	49.2	47.3	45.7	44.1	40.5	36.6	31.4	-5.1sss
10th Grade	55.1	53.5	56.3	56.9	57.6	61.2	60.2	57.7	57.6	55.1	52.8	47.4	-5.4sss
12th Grade	63.1	61.8	61.9	62.0	64.2	63.5	65.4	65.3	64.6	62.5	61.0	57.2	-3.9ss
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—
Smokeless Tobacco <sup>t</sup>													
8th Grade	22.2	20.7	18.7	19.9	20.0	20.4	16.8	15.0	14.4	12.8	11.7	11.2	-0.5
10th Grade	28.2	26.6	28.1	29.2	27.6	27.4	26.3	22.7	20.4	19.1	19.5	16.9	-2.6s
12th Grade	—	32.4	31.0	30.7	30.9	29.8	25.3	26.2	23.4	23.1	19.7	18.3	-1.4
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—
Steroids <sup>p</sup>													
8th Grade	1.9	1.7	1.6	2.0	2.0	1.8	1.8	2.3	2.7	3.0	2.8	2.5	-0.3
10th Grade	1.8	1.7	1.7	1.8	2.0	1.8	2.0	2.0	2.7	3.5	3.5	3.5	0.0
12th Grade	2.1	2.1	2.0	2.4	2.3	1.9	2.4	2.7	2.9	2.5	3.7	4.0	+0.3
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—
Young Adults	1.7	1.9	1.5	1.3	1.5	1.5	1.4	1.4	1.9	1.4	1.4	1.6	+0.1

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001.  
 '—' indicates data not available.  
 ‡ indicates some change in the question. See relevant footnote for that drug. See relevant figure to assess the impact of the wording changes.  
 Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.

SOURCE: The Monitoring the Future Study, the University of Michigan.

### Footnotes for Table 2-1 to Table 2-3

Approximate Weighted Ns	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
8th Graders	17,500	18,600	18,300	17,300	17,500	17,800	18,600	18,100	16,700	16,700	16,200	15,100
10th Graders	14,800	14,800	15,300	15,800	17,000	15,600	15,500	15,000	13,600	14,300	14,000	14,300
12th Graders	15,000	15,800	16,300	15,400	15,400	14,300	15,400	15,200	13,600	12,800	12,800	12,900
College Students	1,410	1,490	1,490	1,410	1,450	1,450	1,480	1,440	1,440	1,350	1,340	1,260
Young Adults	6,600	6,800	6,700	6,500	6,400	6,300	6,400	6,200	6,000	5,700	5,800	5,300

‡ indicates some change in the question. See relevant footnote for that drug. See relevant figure to assess the impact of the wording changes.

<sup>a</sup>For 12th graders, college students, and young adults only: Use of “any illicit drug” includes any use of marijuana, LSD, other hallucinogens, crack, other cocaine, or heroin, or any use of other narcotics, amphetamines, sedatives (barbiturates), or tranquilizers not under a doctor’s orders. For 8th and 10th graders only: The use of other narcotics and barbiturates has been excluded, because these younger respondents appear to overreport use (perhaps because they include the use of nonprescription drugs in their answers).

<sup>b</sup>In 2001 the question text was changed on half of the questionnaire forms for each grade. “Other psychedelics” was changed to “other hallucinogens” and “shrooms” was added to the list of examples. For the tranquilizer list of examples, Miltown was replaced with Xanax. The 2000 data presented here are based on all forms. For 8th, 10th, and 12th graders only: The 2001 data presented here are based on the changed forms only; N is one-half of N indicated. In 2002 the remaining forms were changed to the new wording. The 2002 data are based on all forms. Data for “any illicit drug other than marijuana” and “hallucinogens” are also affected by these changes and have been handled in a parallel manner.

<sup>c</sup>For 12th graders, college students, and young adults only: Data based on five of six forms in 1991–98; N is five-sixths of N indicated. Data based on three of six forms beginning in 1999; N is one-half of N indicated.

<sup>d</sup>Inhalants are unadjusted for underreporting of amyl and butyl nitrites.

<sup>e</sup>For 12th graders only: Data based on one of six forms; N is one-sixth of N indicated. For college students and young adults only: Data based on two of six forms; N is two-sixths of N indicated. Questions about nitrite use were dropped from the young adult questionnaires in 1995.

<sup>f</sup>Hallucinogens are unadjusted for underreporting of PCP.

<sup>g</sup>For 12th graders only: Data based on one of six forms; N is one-sixth of N indicated. For college students and young adults only: Data based on one of six forms; N is one-sixth of N indicated.

<sup>h</sup>For 8th and 10th graders only: Data based on one of two forms in 1996; N is one-half of N indicated. Data based on one-third of N indicated in 1997–2001 due to changes in the questionnaire forms. Data based on two of four forms in 2002; N is one-half of N indicated. For 12th graders only: Data based on one of six forms in 1996–2001; N is one-sixth of N indicated. Data based on two of six forms in 2002; N is two-sixths of N indicated. For college students and young adults only: Data based on two of six forms in 1991–2001; N is two-sixths of N indicated. Data based on three of six forms in 2002; N is one-half of N indicated.

<sup>i</sup>For college students and young adults only: Data based on four of six forms in 1991–2001; N is four-sixths of N indicated. Data based on five of six forms in 2002; N is five-sixths of N indicated.

<sup>j</sup>For 12th graders only: Data based on four of six forms; N is four-sixths of N indicated. For college students and young adults only: Data based on four of six forms; N is four-sixths of N indicated.

<sup>k</sup>In 1995, the heroin question was changed in one of two forms for 8th and 10th graders, in three of six forms for 12th graders, and in two of six forms for college students and young adults. Separate questions were asked for use with injection and without injection. In 1996, the heroin question was changed in all remaining 8th and 10th grade forms. Data presented here represent the combined data from all forms.

<sup>l</sup>For 8th and 10th graders only: Data based on one of two forms in 1995; N is one-half of N indicated. Data based on all forms beginning in 1996. For 12th graders only: Data based on three of six forms; N is one-half of N indicated. For college students and young adults only: Data based on two of six forms; N is two-sixths of N indicated.

<sup>m</sup>Only drug use not under a doctor's orders is included here.

<sup>n</sup>In 2002 the question text was changed in half of the questionnaire forms. The list of examples of narcotics other than heroin was updated: Talwin, laudanum, and paregoric—all of which had negligible rates of use by 2001—were replaced with Vicodin, Oxycontin, and Percocet. The 2001 data presented here are based on all forms. The 2002 estimates are based on the 2001 prevalence of use rate plus the increase observed from 2001 to 2002 in the half-sample in which the question did not change. Thus, the change score given in the right-hand column is the difference between the data from the unchanged forms only in both 2001 and 2002.

<sup>o</sup>For 8th and 10th graders only: Data based on one of four forms; N is one-third of N indicated.

<sup>p</sup>For 12th graders, college students, and young adults only: Data based on two of six forms; N is two-sixths of N indicated for each group.

<sup>q</sup>For 12th graders only: Data based on one of six forms; N is one-sixth of N indicated.

<sup>r</sup>For 8th and 10th graders only: Data based on one of two forms in 1996; N is one-half of N indicated. Data based on three of four forms in 1997–98; N is two-thirds of N indicated. Data based on two of four forms in 1999–2001; N is one-third of N indicated. Data based on one of four forms in 2002; N is one-sixth of N indicated. For 12th graders only: Data based on one of six forms; N is one-sixth of N indicated. Data for 2001 and 2002 are not comparable due to changes in the questionnaire forms. For college students and young adults only: Data based on two of six forms; N is two-sixths of N indicated.

<sup>s</sup>For 8th, 10th, and 12th graders only: In 1993, the question text was changed slightly in half of the forms to indicate that a “drink” meant “more than just a few sips.” The 1993 data are based on the changed forms only; N is one-half of N indicated for these groups. In 1994 the remaining forms were changed to the new wording. The 1994 data are based on all forms. For college students and young adults, the revision of the question text resulted in rather little change in the reported prevalence of use. The data for all forms are used to provide the most reliable estimate of change.

<sup>t</sup>For 8th and 10th graders only: Data based on one of two forms for 1991–96 and on two of four forms beginning in 1997; N is one-half of N indicated. For 12th graders only: Data based on one of six forms; N is one-sixth of N indicated. For college students and young adults only: Questions about smokeless tobacco use were dropped from the analyses in 1989.

<sup>u</sup>For 12th graders only: Data based on two of six forms in 2000; N is two-sixths of N indicated. Data based on three of six forms in 2001; N is one-half of N indicated. Data based on one of six forms in 2002; N is one-sixth of N indicated. For college students and young adults only: Data based on two of six forms; N is two-sixths of N indicated.

<sup>v</sup>For 12th graders only: Data based on two of six forms in 2000; N is two-sixths of N indicated. Data based on three of six forms beginning in 2001; N is one-half of N indicated. For college students and young adults only: Data based on two of six forms; N is two-sixths of N indicated.

<sup>w</sup>Daily use is defined as use on twenty or more occasions in the past thirty days except for cigarettes and smokeless tobacco, for which actual daily use is measured, and for 5+ drinks, for which the prevalence of having five or more drinks in a row in the last two weeks is measured.

**TABLE 2-2**  
**Trends in Annual and 30-Day Prevalence of Use of Various Drugs**  
**for Eighth, Tenth, and Twelfth Graders, College Students, and Young Adults (Ages 19-28)**

	<u>Annual</u>												'01-'02 change	<u>30-Day</u>												'01-'02 change
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002		1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	
Any Illicit Drug <sup>a</sup>	11.3	12.9	15.1	18.5	21.4	23.6	22.1	21.0	20.5	19.5	19.5	17.7	-1.7s	5.7	6.8	8.4	10.9	12.4	14.6	12.9	12.1	12.2	11.9	11.7	10.4	-1.2
8th Grade	21.4	20.4	24.7	30.0	33.3	37.5	38.5	35.0	35.9	36.4	37.2	34.8	-2.4s	11.6	11.0	14.0	18.5	20.2	23.2	23.0	21.5	22.1	22.5	22.7	20.8	-1.9s
10th Grade	29.4	27.1	31.0	35.8	39.0	40.2	42.4	41.4	42.1	40.9	41.4	41.0	-0.5	16.4	14.4	18.3	21.9	23.8	24.6	26.2	25.6	25.9	24.9	25.7	25.4	-0.4
College Students	29.2	30.6	30.6	31.4	33.5	34.2	34.1	37.8	36.9	36.1	37.9	37.0	-0.9	15.2	16.1	15.1	16.0	19.1	17.6	19.2	19.7	21.6	21.5	21.9	21.5	-0.4
Young Adults	27.0	28.3	28.4	28.4	29.8	29.2	29.2	29.9	30.3	30.8	32.1	32.4	+0.3	15.1	14.8	14.9	15.3	15.8	15.8	16.4	16.1	17.1	18.1	18.8	18.9	+0.2
Any Illicit Drug Other Than Marijuana <sup>a,b</sup>	8.4	9.3	10.4	11.3	12.6	13.1	11.8	11.0	10.5	10.2	10.8	8.8	-2.0ss	3.8	4.7	5.3	5.6	6.5	6.9	6.0	5.5	5.5	5.6	5.5	4.7	-0.8
8th Grade	12.2	12.3	13.9	15.2	17.5	18.4	18.2	16.6	16.7	16.7	17.9	15.7	-2.1s	5.5	5.7	6.5	7.1	8.9	8.9	8.8	8.6	8.6	8.5	8.7	8.1	-0.6
10th Grade	16.2	14.9	17.1	18.0	19.4	19.8	20.7	20.2	20.7	20.4	21.6	20.9	-0.7	7.1	6.3	7.9	8.8	10.0	9.5	10.7	10.7	10.4	10.4	11.0	11.3	+0.3
12th Grade	13.2	13.1	12.5	12.2	15.9	12.8	15.8	14.0	15.4	15.6	16.4	16.6	+0.3	4.3	4.6	5.4	4.6	6.3	4.5	6.8	6.1	6.4	6.9	7.5	7.8	+0.3
College Students	14.3	14.1	13.0	13.0	13.8	13.2	13.6	13.2	13.7	14.9	15.4	16.3	+1.0	5.4	5.5	4.9	5.3	5.7	4.7	5.5	5.5	6.0	6.4	7.0	7.7	+0.6
Young Adults																										
Any Illicit Drug Including Inhalants <sup>a,c</sup>	16.7	18.2	21.1	24.2	27.1	28.7	27.2	26.2	25.3	24.0	23.9	21.4	-2.5ss	8.8	10.0	12.0	14.3	16.1	17.5	16.0	14.9	15.1	14.4	14.0	12.6	-1.4s
8th Grade	23.9	23.5	27.4	32.5	35.6	39.6	40.3	37.1	37.7	38.0	38.7	36.1	-2.6s	13.1	12.6	15.5	20.0	21.6	24.5	24.1	22.5	23.1	23.6	23.6	21.7	-1.9s
10th Grade	31.2	28.8	32.5	37.6	40.2	41.9	43.3	42.4	42.8	42.5	42.6	42.1	-0.5	17.8	15.5	19.3	23.0	24.8	25.5	26.9	26.6	26.4	26.4	26.5	25.9	-0.5
12th Grade	29.8	31.1	31.7	31.9	33.7	35.1	35.5	39.1	37.4	37.0	38.2	37.7	-0.4	15.1	16.5	15.7	16.4	19.6	18.0	19.6	21.0	21.8	22.6	21.9	21.9	0.0
College Students	27.8	29.2	28.9	29.2	30.4	30.2	30.1	30.6	30.6	31.2	33.2	32.4	-0.8	15.4	15.3	15.1	16.1	16.1	16.4	16.9	16.7	17.4	18.8	19.2	19.5	+0.2
Young Adults																										
Marijuana/Hashish	6.2	7.2	9.2	13.0	15.8	18.3	17.7	16.9	16.5	15.6	15.4	14.6	-0.8	3.2	3.7	5.1	7.8	9.1	11.3	10.2	9.7	9.7	9.1	9.2	8.3	-0.9
8th Grade	16.5	15.2	19.2	25.2	28.7	33.6	34.8	31.1	32.1	32.2	32.7	30.3	-2.4s	8.7	8.1	10.9	15.8	17.2	20.4	20.5	18.7	19.4	19.7	19.8	17.8	-1.9s
10th Grade	23.9	21.9	26.0	30.7	34.7	35.8	38.5	37.5	37.8	36.5	37.0	36.2	-0.8	13.8	11.9	15.5	19.0	21.2	21.9	23.7	22.8	23.1	21.6	22.4	21.5	-0.9
12th Grade	26.5	27.7	27.9	29.3	31.2	33.1	31.6	35.9	35.2	34.0	35.6	34.7	-0.9	14.1	14.6	14.2	15.1	18.6	17.5	17.7	18.6	20.7	20.0	20.2	19.7	-0.5
College Students	23.8	25.2	25.1	25.5	26.5	27.0	26.8	27.4	27.6	27.9	29.2	29.3	+0.1	13.5	13.3	13.4	14.1	14.0	15.1	15.0	14.9	15.6	16.1	16.7	16.9	+0.1
Young Adults																										
Inhalants <sup>c,d</sup>	9.0	9.5	11.0	11.7	12.8	12.2	11.8	11.1	10.3	9.4	9.1	7.7	-1.4ss	4.4	4.7	5.4	5.6	6.1	5.8	5.6	4.8	5.0	4.5	4.0	3.8	-0.2
8th Grade	7.1	7.5	8.4	9.1	9.6	9.5	8.7	8.0	7.2	7.3	6.6	5.8	-0.9	2.7	2.7	3.3	3.6	3.5	3.3	3.0	2.9	2.6	2.6	2.4	2.4	-0.1
10th Grade	6.6	6.2	7.0	7.7	8.0	7.6	6.7	6.2	5.6	5.9	4.5	4.5	0.0	2.4	2.3	2.5	2.7	3.2	2.5	2.5	2.3	2.0	2.2	1.7	1.5	-0.2
12th Grade	3.5	3.1	3.8	3.0	3.9	3.6	4.1	3.0	3.2	2.9	2.8	2.0	-0.7	0.9	1.1	1.3	0.6	1.6	0.8	0.8	0.6	1.5	0.9	0.4	0.7	+0.3
College Students	2.0	1.9	2.1	2.1	2.4	2.2	2.3	2.1	2.3	2.1	1.7	1.6	-0.1	0.5	0.6	0.7	0.5	0.7	0.5	0.5	0.7	0.8	0.5	0.4	0.5	+0.1
Young Adults																										
Nitrites <sup>e</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	0.9	0.5	0.9	1.1	1.1	1.6	1.2	1.4	0.9	0.6	0.6	1.1	+0.5	0.4	0.3	0.6	0.4	0.4	0.7	0.7	1.0	0.4	0.3	0.5	0.6	+0.1
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Young Adults	0.2	0.1	0.4	0.3	—	—	—	—	—	—	—	—	—	*	0.1	0.2	0.1	—	—	—	—	—	—	—	—	—

(Table continued on next page)

**TABLE 2-2 (cont.)**  
**Trends in Annual and 30-Day Prevalence of Use of Various Drugs**  
**for Eighth, Tenth, and Twelfth Graders, College Students, and Young Adults (Ages 19-28)**

	Annual												30-Day													
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	'01-'02 change	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	'01-'02 change
	Hallucinogens <sup>b,f</sup>	1.9	2.5	2.6	2.7	3.6	4.1	3.7	3.4	2.9	2.8	3.4	2.6	-0.8	0.8	1.1	1.2	1.3	1.7	1.9	1.8	1.4	1.3	1.2	1.6	1.2
8th Grade	4.0	4.3	4.7	5.8	7.2	7.8	7.6	6.9	6.9	6.1	6.2	4.7	-1.5s	1.6	1.8	1.9	2.4	3.3	2.8	3.3	3.2	2.9	2.3	2.1	1.6	-0.4
10th Grade	5.8	5.9	7.4	7.6	9.3	10.1	9.8	9.0	9.4	8.1	9.1	6.6	-2.5sss	2.2	2.1	2.7	3.1	4.4	3.5	3.9	3.8	3.5	2.6	3.3	2.3	-1.0ss
12th Grade	6.3	6.8	6.0	6.2	8.2	6.9	7.7	7.2	7.8	6.7	7.5	6.3	-1.2	1.2	2.3	2.5	2.1	3.3	1.9	2.1	2.1	2.0	1.4	1.8	1.2	-0.6
College Students	4.5	5.0	4.5	4.8	5.6	5.6	5.9	5.2	5.4	5.4	5.4	4.7	-0.7	1.1	1.5	1.2	1.4	1.7	1.2	1.5	1.4	1.3	1.2	1.2	0.9	-0.3
Young Adults	LSD																									
8th Grade	1.7	2.1	2.3	2.4	3.2	3.5	3.2	2.8	2.4	2.4	2.2	1.5	-0.7s	0.6	0.9	1.0	1.1	1.4	1.5	1.5	1.1	1.1	1.0	1.0	0.7	-0.3
10th Grade	3.7	4.0	4.2	5.2	6.5	6.9	6.7	5.9	6.0	5.1	4.1	2.6	-1.6sss	1.5	1.6	1.6	2.0	3.0	2.4	2.8	2.7	2.3	1.6	1.5	0.7	-0.8sss
12th Grade	5.2	5.6	6.8	6.9	8.4	8.8	8.4	7.6	8.1	6.6	6.6	3.5	-3.1sss	1.9	2.0	2.4	2.6	4.0	2.5	3.1	3.2	2.7	1.6	2.3	0.7	-1.6sss
College Students	5.1	5.7	5.1	5.2	6.9	5.2	5.0	4.4	5.4	4.3	4.0	2.1	-2.0ss	0.8	1.8	1.6	1.8	2.5	0.9	1.1	1.5	1.2	0.9	1.0	0.2	-0.8ss
Young Adults	3.8	4.3	3.8	4.0	4.6	4.5	4.4	3.5	4.0	3.7	3.4	1.8	-1.6sss	0.8	1.1	0.8	1.1	1.3	0.7	0.9	1.0	0.8	0.8	0.7	0.3	-0.4ss
Hallucinogens Other Than LSD <sup>b</sup>																										
8th Grade	0.7	1.1	1.0	1.3	1.7	2.0	1.8	1.6	1.5	1.4	2.4	2.1	-0.3	0.3	0.4	0.5	0.7	0.8	0.9	0.7	0.7	0.6	0.6	1.1	1.0	-0.2
10th Grade	1.3	1.4	1.9	2.4	2.8	3.3	3.3	3.4	3.2	3.1	4.3	4.0	-0.4	0.4	0.5	0.7	1.0	1.0	1.0	1.2	1.4	1.2	1.2	1.4	1.4	0.0
12th Grade	2.0	1.7	2.2	3.1	3.8	4.4	4.6	4.6	4.3	4.4	5.9	5.4	-0.4	0.7	0.5	0.8	1.2	1.3	1.6	1.7	1.6	1.6	1.7	1.9	2.0	+0.1
College Students	3.1	2.6	2.7	2.8	4.0	4.1	4.9	4.4	4.5	4.4	5.5	5.8	+0.3	0.6	0.7	1.1	0.8	1.6	1.2	1.2	0.7	1.2	0.8	0.8	1.1	+0.3
Young Adults	1.7	1.9	1.9	2.0	2.5	2.8	3.1	3.0	3.0	3.4	3.5	4.0	+0.5	0.3	0.5	0.6	0.6	0.6	0.6	0.7	0.5	0.6	0.7	0.6	0.8	+0.2
PCP <sup>g</sup>																										
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	1.4	1.4	1.4	1.6	1.8	2.6	2.3	2.1	1.8	2.3	1.8	1.1	-0.7	0.5	0.6	1.0	0.7	0.6	1.3	0.7	1.0	0.8	0.9	0.5	0.4	-0.1
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Young Adults	0.3	0.3	0.2	0.3	0.3	0.2	0.5	0.6	0.6	0.3	0.6	0.3	-0.3	0.1	0.2	0.2	0.1	0.0	0.1	0.1	0.2	0.2	0.0	0.0	0.1	+0.1
MDMA (Ecstasy) <sup>h</sup>																										
8th Grade	—	—	—	—	—	2.3	2.3	1.8	1.7	3.1	3.5	2.9	-0.6	—	—	—	—	—	1.0	1.0	0.9	0.8	1.4	1.8	1.4	-0.5
10th Grade	—	—	—	—	—	4.6	3.9	3.3	4.4	5.4	6.2	4.9	-1.3s	—	—	—	—	—	1.8	1.3	1.3	1.8	2.6	2.6	1.8	-0.8s
12th Grade	—	—	—	—	—	4.6	4.0	3.6	5.6	8.2	9.2	7.4	-1.8	—	—	—	—	—	2.0	1.6	1.5	2.5	3.6	2.8	2.4	-0.4
College Students	0.9	2.0	0.8	0.5	2.4	2.8	2.4	3.9	5.5	9.1	9.2	6.8	-2.4	0.2	0.4	0.3	0.2	0.7	0.7	0.8	0.8	2.1	2.5	1.5	0.7	-0.8
Young Adults	0.8	1.0	0.8	0.7	1.6	1.7	2.1	2.9	3.6	7.2	7.5	6.2	-1.3	0.1	0.3	0.3	0.2	0.4	0.3	0.6	0.8	1.3	1.9	1.8	1.3	-0.5
Cocaine																										
8th Grade	1.1	1.5	1.7	2.1	2.6	3.0	2.8	3.1	2.7	2.6	2.5	2.3	-0.3	0.5	0.7	0.7	1.0	1.2	1.3	1.1	1.4	1.3	1.2	1.2	1.1	-0.1
10th Grade	2.2	1.9	2.1	2.8	3.5	4.2	4.7	4.7	4.9	4.4	3.6	4.0	+0.5	0.7	0.7	0.9	1.2	1.7	1.7	2.0	2.1	1.8	1.8	1.3	1.6	+0.3
12th Grade	3.5	3.1	3.3	3.6	4.0	4.9	5.5	5.7	6.2	5.0	4.8	5.0	+0.2	1.4	1.3	1.3	1.5	1.8	2.0	2.3	2.4	2.6	2.1	2.1	2.3	+0.2
College Students	3.6	3.0	2.7	2.0	3.6	2.9	3.4	4.6	4.6	4.8	4.7	4.8	+0.1	1.0	1.0	0.7	0.6	0.7	0.8	1.6	1.6	1.2	1.4	1.9	1.6	-0.3
Young Adults	6.2	5.7	4.7	4.3	4.4	4.1	4.7	4.9	5.4	5.4	5.8	5.8	0.0	2.0	1.8	1.4	1.3	1.5	1.2	1.6	1.7	1.9	1.7	2.2	2.2	0.0
Crack <sup>l</sup>																										
8th Grade	0.7	0.9	1.0	1.3	1.6	1.8	1.7	2.1	1.8	1.8	1.7	1.6	-0.1	0.3	0.5	0.4	0.7	0.7	0.8	0.7	0.9	0.8	0.8	0.8	0.8	0.0
10th Grade	0.9	0.9	1.1	1.4	1.8	2.1	2.2	2.5	2.4	2.2	1.8	2.3	+0.5s	0.3	0.4	0.5	0.6	0.9	0.8	0.9	1.1	0.8	0.9	0.7	1.0	+0.2
12th Grade	1.5	1.5	1.5	1.9	2.1	2.1	2.4	2.5	2.7	2.2	2.1	2.3	+0.2	0.7	0.6	0.7	0.8	1.0	1.0	0.9	1.0	1.1	1.0	1.1	1.2	+0.1
College Students	0.5	0.4	0.6	0.5	1.1	0.6	0.4	1.0	0.9	0.9	0.9	0.4	-0.4	0.3	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.1	0.3	+0.2
Young Adults	1.2	1.4	1.3	1.1	1.1	1.1	1.0	1.1	1.4	1.2	1.3	1.0	-0.2	0.4	0.4	0.4	0.3	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.3	-0.1

(Table continued on next page)

**TABLE 2-2 (cont.)**  
**Trends in Annual and 30-Day Prevalence of Use of Various Drugs**  
**for Eighth, Tenth, and Twelfth Graders, College Students, and Young Adults (Ages 19-28)**

	Annual												30-Day														
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	'01-'02 change	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	'01-'02 change	
Other Cocaine <sup>i</sup>																											
8th Grade	1.0	1.2	1.3	1.7	2.1	2.5	2.2	2.4	2.3	1.9	1.9	1.8	-0.1	0.5	0.5	0.6	0.9	1.0	1.0	0.8	1.0	1.1	0.9	0.9	0.8	-0.2	
10th Grade	2.1	1.7	1.8	2.4	3.0	3.5	4.1	4.0	4.4	3.8	3.0	3.4	+0.4	0.6	0.6	0.7	1.0	1.4	1.3	1.6	1.8	1.6	1.6	1.2	1.3	+0.2	
12th Grade	3.2	2.6	2.9	3.0	3.4	4.2	5.0	4.9	5.8	4.5	4.4	4.4	0.0	1.2	1.0	1.2	1.3	1.3	1.6	2.0	2.0	2.5	1.7	1.8	1.9	+0.1	
College Students	3.2	2.4	2.5	1.8	3.3	2.3	3.0	4.2	4.2	4.1	4.1	5.0	+0.9	1.0	0.9	0.6	0.3	0.8	0.6	1.3	1.5	1.0	0.9	1.5	1.4	-0.1	
Young Adults	5.4	5.1	3.9	3.6	3.9	3.8	4.3	4.5	4.8	4.8	5.3	5.6	+0.4	1.8	1.7	1.1	1.0	1.3	1.1	1.5	1.5	1.6	1.5	1.8	2.0	+0.1	
Heroin <sup>k</sup>																											
8th Grade	0.7	0.7	0.7	1.2	1.4	1.6	1.3	1.3	1.4	1.1	1.0	0.9	-0.1	0.3	0.4	0.4	0.6	0.6	0.7	0.6	0.6	0.6	0.5	0.6	0.5	-0.1	
10th Grade	0.5	0.6	0.7	0.9	1.1	1.2	1.4	1.4	1.4	1.4	0.9	1.1	+0.1	0.2	0.2	0.3	0.4	0.6	0.5	0.6	0.7	0.7	0.5	0.3	0.5	+0.2	
12th Grade	0.4	0.6	0.5	0.6	1.1	1.0	1.2	1.0	1.1	1.5	0.9	1.0	+0.1	0.2	0.3	0.2	0.3	0.6	0.5	0.5	0.5	0.7	0.4	0.5	+0.1		
College Students	0.1	0.1	0.1	0.1	0.3	0.4	0.3	0.6	0.2	0.5	0.4	0.1	-0.2	0.1	0.0	*	0.0	0.1	*	0.2	0.1	0.1	0.2	0.1	0.0	-0.1	
Young Adults	0.1	0.2	0.2	0.1	0.4	0.4	0.3	0.4	0.4	0.4	0.5	0.2	-0.3 <sub>ss</sub>	*	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	*	-0.2 <sub>ss</sub>
With a needle <sup>l</sup>																											
8th Grade	—	—	—	—	0.9	1.0	0.8	0.8	0.9	0.6	0.7	0.6	-0.1	—	—	—	—	0.4	0.5	0.4	0.5	0.4	0.3	0.4	0.3	-0.1	
10th Grade	—	—	—	—	0.6	0.7	0.7	0.8	0.6	0.5	0.4	0.6	+0.1	—	—	—	—	0.3	0.3	0.3	0.4	0.3	0.3	0.2	0.3	+0.1	
12th Grade	—	—	—	—	0.5	0.5	0.5	0.4	0.4	0.4	0.3	0.4	+0.1	—	—	—	—	0.3	0.4	0.3	0.2	0.2	0.2	0.2	0.3	+0.1	
College Students	—	—	—	—	0.1	0.0	0.1	0.2	0.1	0.1	0.1	0.0	-0.1	—	—	—	—	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.0	0.0	
Young Adults	—	—	—	—	0.1	0.1	0.1	0.1	0.1	*	0.3	0.0	-0.3 <sub>s</sub>	—	—	—	—	0.0	0.0	0.1	*	0.1	*	0.2	0.0	-0.2	
Without a needle <sup>l</sup>																											
8th Grade	—	—	—	—	0.8	1.0	0.8	0.8	0.9	0.7	0.6	0.6	0.0	—	—	—	—	0.3	0.4	0.4	0.3	0.4	0.3	0.4	0.3	-0.1	
10th Grade	—	—	—	—	0.8	0.9	1.1	1.0	1.1	1.1	0.7	0.8	+0.1	—	—	—	—	0.3	0.3	0.4	0.5	0.5	0.4	0.2	0.4	+0.1	
12th Grade	—	—	—	—	1.0	1.0	1.2	0.8	1.0	1.6	0.8	0.8	0.0	—	—	—	—	0.6	0.4	0.6	0.4	0.4	0.7	0.3	0.5	+0.1	
College Students	—	—	—	—	0.0	0.8	0.4	0.9	0.3	0.8	0.6	0.2	-0.4	—	—	—	—	0.0	0.1	0.2	0.2	0.3	0.4	0.3	0.0	-0.3	
Young Adults	—	—	—	—	0.3	0.4	0.4	0.7	0.6	0.5	0.9	0.2	-0.7 <sub>ss</sub>	—	—	—	—	0.1	*	0.1	0.2	0.2	0.2	0.4	*	-0.4 <sub>ss</sub>	
Other Narcotics <sup>m,n</sup>																											
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
12th Grade	3.5	3.3	3.6	3.8	4.7	5.4	6.2	6.3	6.7	7.0	6.7	7.0	+0.2 <sup>n</sup>	1.1	1.2	1.3	1.5	1.8	2.0	2.3	2.4	2.6	2.9	3.0	3.1	+0.2 <sup>n</sup>	
College Students	2.7	2.7	2.5	2.4	3.8	3.1	4.2	4.2	4.3	4.5	5.7	5.9	+0.2 <sup>n</sup>	0.6	1.0	0.7	0.4	1.2	0.7	1.3	1.1	1.0	1.7	1.7	1.6	-0.1 <sup>n</sup>	
Young Adults	2.5	2.5	2.2	2.5	3.0	2.9	3.3	3.4	3.8	4.1	5.0	5.1	+0.1 <sup>n</sup>	0.6	0.7	0.7	0.6	0.9	0.7	0.9	0.9	1.2	1.4	1.7	1.7	0.0 <sup>n</sup>	
Oxycontin <sup>o,p</sup>																											
8th Grade	—	—	—	—	—	—	—	—	—	—	—	1.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	3.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
12th Grade	—	—	—	—	—	—	—	—	—	—	—	4.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
College Students	—	—	—	—	—	—	—	—	—	—	—	1.5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Young Adults	—	—	—	—	—	—	—	—	—	—	—	1.9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Vicodin <sup>o,p</sup>																											
8th Grade	—	—	—	—	—	—	—	—	—	—	—	2.5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	6.9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
12th Grade	—	—	—	—	—	—	—	—	—	—	—	9.6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
College Students	—	—	—	—	—	—	—	—	—	—	—	6.9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Young Adults	—	—	—	—	—	—	—	—	—	—	—	8.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	

(Table continued on next page)



**TABLE 2-2 (cont.)  
Trends in Annual and 30-Day Prevalence of Use of Various Drugs  
for Eighth, Tenth, and Twelfth Graders, College Students, and Young Adults (Ages 19-28)**

	Annual												'01-'02 change	30-Day												'01-'02 change
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002		1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	
Amphetamines <sup>m</sup>																										
8th Grade	6.2	6.5	7.2	7.9	8.7	9.1	8.1	7.2	6.9	6.5	6.7	5.5	-1.2s	2.6	3.3	3.6	3.6	4.2	4.6	3.8	3.3	3.4	3.4	3.2	2.8	-0.4
10th Grade	8.2	8.2	9.6	10.2	11.9	12.4	12.1	10.7	10.4	11.1	11.7	10.7	-1.0	3.3	3.6	4.3	4.5	5.3	5.5	5.1	5.1	5.0	5.4	5.6	5.2	-0.4
12th Grade	8.2	7.1	8.4	9.4	9.3	9.5	10.2	10.1	10.2	10.5	10.9	11.1	+0.2	3.2	2.8	3.7	4.0	4.0	4.1	4.8	4.6	4.5	5.0	5.6	5.5	-0.2
College Students	3.9	3.6	4.2	4.2	5.4	4.2	5.7	5.1	5.8	6.6	7.2	7.0	-0.2	1.0	1.1	1.5	1.5	2.2	0.9	2.1	1.7	2.3	2.9	3.3	3.0	-0.4
Young Adults	4.3	4.1	4.0	4.5	4.6	4.2	4.6	4.5	4.7	5.4	5.8	5.9	+0.1	1.5	1.5	1.5	1.7	1.7	1.5	1.7	1.7	1.9	2.3	2.4	2.5	+0.1
Ritalin <sup>o,p</sup>																										
8th Grade	—	—	—	—	—	—	—	—	—	—	2.9	2.8	-0.1	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	4.8	4.8	0.0	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	—	—	—	—	—	—	—	—	—	—	5.1	4.0	-1.1	—	—	—	—	—	—	—	—	—	—	—	—	—
College Students	—	—	—	—	—	—	—	—	—	—	—	—	5.7	—	—	—	—	—	—	—	—	—	—	—	—	—
Young Adults	—	—	—	—	—	—	—	—	—	—	—	2.9	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Methamphetamine <sup>o,p</sup>																										
8th Grade	—	—	—	—	—	—	—	—	—	3.2	2.5	2.8	2.2	-0.6	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	4.6	4.0	3.7	3.9	+0.2	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	—	—	—	—	—	—	—	—	—	4.7	4.3	3.9	3.6	-0.3	—	—	—	—	—	—	—	—	—	—	—	—
College Students	—	—	—	—	—	—	—	—	—	3.3	1.6	2.4	1.2	-1.2	—	—	—	—	—	—	—	—	—	—	—	—
Young Adults	—	—	—	—	—	—	—	—	—	2.8	2.5	2.8	2.5	-0.3	—	—	—	—	—	—	—	—	—	—	—	—
Ice <sup>p</sup>																										
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	1.4	1.3	1.7	1.8	2.4	2.8	2.3	3.0	1.9	2.2	2.5	3.0	+0.6	0.6	0.5	0.6	0.7	1.1	1.1	0.8	1.2	0.8	1.0	1.1	1.2	+0.1
College Students	0.1	0.2	0.7	0.8	1.1	0.3	0.8	1.0	0.5	0.5	0.6	0.8	+0.2	0.0	0.0	0.3	0.5	0.3	0.1	0.2	0.3	0.0	0.0	0.1	0.0	-0.1
Young Adults	0.3	0.4	0.8	0.9	1.2	0.9	0.9	1.1	0.9	1.2	1.1	1.4	+0.4	*	0.1	0.3	0.5	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.5	+0.1
Sedatives (Barbiturates) <sup>m</sup>																										
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	3.4	2.8	3.4	4.1	4.7	4.9	5.1	5.5	5.8	6.2	5.7	6.7	+1.0s	1.4	1.1	1.3	1.7	2.2	2.1	2.1	2.6	2.6	3.0	2.8	3.2	+0.4
College Students	1.2	1.4	1.5	1.2	2.0	2.3	3.0	2.5	3.2	3.7	3.8	3.7	-0.2	0.3	0.7	0.4	0.4	0.5	0.8	1.2	1.1	1.1	1.1	1.5	1.7	+0.2
Young Adults	1.8	1.6	1.9	1.8	2.1	2.2	2.4	2.5	2.8	3.4	3.7	3.9	+0.2	0.5	0.5	0.6	0.6	0.8	0.8	0.9	0.9	1.1	1.3	1.7	1.5	-0.2
Methaqualone <sup>m,q</sup>																										
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	0.5	0.6	0.2	0.8	0.7	1.1	1.0	1.1	1.1	0.3	0.8	0.9	+0.2	0.2	0.4	0.1	0.4	0.4	0.6	0.3	0.6	0.4	0.2	0.5	0.3	-0.2
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tranquillizers <sup>b,m</sup>																										
8th Grade	1.8	2.0	2.1	2.4	2.7	3.3	2.9	2.6	2.5	2.6	2.8	2.6	-0.3	0.8	0.8	0.9	1.1	1.2	1.5	1.2	1.2	1.1	1.4	1.2	1.2	0.0
10th Grade	3.2	3.5	3.3	3.3	4.0	4.6	4.9	5.1	5.4	5.6	7.3	6.3	-1.0	1.2	1.5	1.1	1.5	1.7	1.7	2.2	2.2	2.2	2.5	2.9	2.9	0.0
12th Grade	3.6	2.8	3.5	3.7	4.4	4.6	4.7	5.5	5.8	5.7	6.9	7.7	+0.8	1.4	1.0	1.2	1.4	1.8	2.0	1.8	2.4	2.5	2.6	2.9	3.3	+0.4
College Students	2.4	2.9	2.4	1.8	2.9	2.8	3.8	3.9	3.8	4.2	5.1	6.7	+1.5	0.6	0.6	0.4	0.4	0.5	0.7	1.2	1.3	1.1	2.0	1.5	3.0	+1.5ss
Young Adults	3.5	3.4	3.1	2.9	3.4	3.2	3.1	3.8	3.7	4.6	5.5	7.0	+1.5ss	0.9	1.0	1.0	0.8	1.1	0.7	1.1	1.2	1.3	1.8	2.1	2.8	+0.7s

(Table continued on next page)

**TABLE 2-2 (cont.)**  
**Trends in Annual and 30-Day Prevalence of Use of Various Drugs**  
**for Eighth, Tenth, and Twelfth Graders, College Students, and Young Adults (Ages 19-28)**

	Annual												'01-'02 change	30-Day												'01-'02 change	
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002		1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002		
<b>Rohypnol<sup>r</sup></b>																											
8th Grade	—	—	—	—	—	1.0	0.8	0.8	0.5	0.5	0.7	0.3	-0.4	—	—	—	—	—	0.5	0.3	0.4	0.3	0.3	0.4	0.2	-0.2	
10th Grade	—	—	—	—	—	1.1	1.3	1.2	1.0	0.8	1.0	0.7	-0.3	—	—	—	—	—	0.5	0.5	0.4	0.5	0.4	0.2	0.4	+0.2	
12th Grade	—	—	—	—	—	1.1	1.2	1.4	1.0	0.8	0.9	1.6	— <sup>r</sup>	—	—	—	—	—	0.5	0.3	0.3	0.3	0.4	0.3	—	—	
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
<b>GHB<sup>o,u</sup></b>																											
8th Grade	—	—	—	—	—	—	—	—	—	1.2	1.1	0.8	-0.2	—	—	—	—	—	—	—	—	—	—	—	—	—	
10th Grade	—	—	—	—	—	—	—	—	—	1.1	1.0	1.4	+0.4	—	—	—	—	—	—	—	—	—	—	—	—	—	
12th Grade	—	—	—	—	—	—	—	—	—	1.9	1.6	1.5	-0.1	—	—	—	—	—	—	—	—	—	—	—	—	—	
College Students	—	—	—	—	—	—	—	—	—	—	—	0.6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Young Adults	—	—	—	—	—	—	—	—	—	—	—	0.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
<b>Ketamine<sup>o,v</sup></b>																											
8th Grade	—	—	—	—	—	—	—	—	—	1.6	1.3	1.3	0.0	—	—	—	—	—	—	—	—	—	—	—	—	—	
10th Grade	—	—	—	—	—	—	—	—	—	2.1	2.1	2.2	+0.1	—	—	—	—	—	—	—	—	—	—	—	—	—	
12th Grade	—	—	—	—	—	—	—	—	—	2.5	2.5	2.6	+0.1	—	—	—	—	—	—	—	—	—	—	—	—	—	
College Students	—	—	—	—	—	—	—	—	—	—	—	1.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Young Adults	—	—	—	—	—	—	—	—	—	—	—	1.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
<b>Alcohol<sup>h</sup></b>																											
<b>Any use</b>																											
8th Grade	54.0	53.7	45.4	46.8	45.3	46.5	45.5	43.7	43.5	43.1	41.9	38.7	-3.2 <sup>ss</sup>	25.1	26.1	24.3	25.5	24.6	26.2	24.5	23.0	24.0	22.4	21.5	19.6	-1.9 <sup>s</sup>	
10th Grade	72.3	70.2	63.4	63.9	63.5	65.0	65.2	62.7	63.7	65.3	63.5	60.0	-3.5 <sup>sss</sup>	42.8	39.9	38.2	39.2	38.8	40.4	40.1	38.8	40.0	41.0	39.0	35.4	-3.6 <sup>sss</sup>	
12th Grade	77.7	76.8	72.7	73.0	73.7	72.5	74.8	74.3	73.8	73.2	73.3	71.5	-1.8	54.0	51.3	48.6	50.1	51.3	50.8	52.7	52.0	51.0	50.0	49.8	48.6	-1.2	
College Students	88.3	86.9	85.1	82.7	83.2	82.9	82.4	84.6	83.6	83.2	83.0	82.9	-0.1	74.7	71.4	70.1	67.8	67.5	67.0	65.8	68.1	69.6	67.4	67.0	68.9	+1.9	
Young Adults	86.9	86.2	85.3	83.7	84.7	84.0	84.3	84.0	84.1	84.0	84.3	84.9	+0.6	70.6	69.0	68.3	67.7	68.1	66.7	67.5	66.9	68.2	66.8	67.0	68.3	+1.1	
<b>Been Drunk<sup>p</sup></b>																											
8th Grade	17.5	18.3	18.2	18.2	18.4	19.8	18.4	17.9	18.5	18.5	16.6	15.0	-1.6 <sup>s</sup>	7.6	7.5	7.8	8.7	8.3	9.6	8.2	8.4	9.4	8.3	7.7	6.7	-1.0	
10th Grade	40.1	37.0	37.8	38.0	38.5	40.1	40.7	38.3	40.9	41.6	39.9	35.4	-4.5 <sup>sss</sup>	20.5	18.1	19.8	20.3	20.8	21.3	22.4	21.1	22.5	23.5	21.9	18.3	-3.6 <sup>sss</sup>	
12th Grade	52.7	50.3	49.6	51.7	52.5	51.9	53.2	52.0	53.2	51.8	53.2	50.4	-2.8	31.6	29.9	28.9	30.8	33.2	31.3	34.2	32.9	32.9	32.3	32.7	30.3	-2.4	
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
<b>Cigarettes</b>																											
<b>Any use</b>																											
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	14.3	15.5	16.7	18.6	19.1	21.0	19.4	19.1	17.5	14.6	12.2	10.7	-1.5 <sup>s</sup>	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	20.8	21.5	24.7	25.4	27.9	30.4	29.8	27.6	25.7	23.9	21.3	17.7	-3.6 <sup>sss</sup>	
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	28.3	27.8	29.9	31.2	33.5	34.0	36.5	35.1	34.6	31.4	29.5	26.7	-2.8 <sup>s</sup>	
College Students	35.6	37.3	38.8	37.6	39.3	41.4	43.6	44.3	44.5	41.3	39.0	38.3	-0.7	23.2	23.5	24.5	23.5	26.8	27.9	28.3	30.0	30.6	28.2	25.7	26.7	+0.9	
Young Adults	37.7	37.9	37.8	38.3	38.8	40.3	41.8	41.6	41.1	40.9	41.1	39.1	-2.0 <sup>s</sup>	28.2	28.3	28.0	28.0	29.2	30.1	29.9	30.9	30.3	30.1	30.2	29.2	-0.9	
<b>Bidis<sup>o,p</sup></b>																											
8th Grade	—	—	—	—	—	—	—	—	—	3.9	2.7	2.7	0.0	—	—	—	—	—	—	—	—	—	—	—	—	—	
10th Grade	—	—	—	—	—	—	—	—	—	6.4	4.9	3.1	-1.8 <sup>sss</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	
12th Grade	—	—	—	—	—	—	—	—	—	9.2	7.0	5.9	-1.2	—	—	—	—	—	—	—	—	—	—	—	—	—	
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	

(Table continued on next page)

**TABLE 2-2 (cont.)**  
**Trends in Annual and 30-Day Prevalence of Use of Various Drugs**  
**for Eighth, Tenth, and Twelfth Graders, College Students, and Young Adults (Ages 19-28)**

	Annual												30-Day													
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	'01-'02 change	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	'01-'02 change
Kreteks <sup>op</sup>																										
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	-0.1	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	2.6	2.6	-1.2	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	—	—	—	—	—	—	—	—	—	—	—	6.0	4.9	-1.7	—	—	—	—	—	—	—	—	—	—	—	—
College Students	—	—	—	—	—	—	—	—	—	—	—	10.1	8.4	—	—	—	—	—	—	—	—	—	—	—	—	—
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Smokeless Tobacco <sup>†</sup>																										
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	6.9	7.0	6.6	7.7	7.1	7.1	5.5	4.8	4.5	4.2	4.0	3.3	-0.8
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	10.0	9.6	10.4	10.5	9.7	8.6	8.9	7.5	6.5	6.1	6.9	6.1	-0.8
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	11.4	10.7	11.1	12.2	9.8	9.7	8.8	8.4	7.6	7.8	6.5	-1.4
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Steroids <sup>p</sup>																										
8th Grade	1.0	1.1	0.9	1.2	1.0	0.9	1.0	1.2	1.7	1.7	1.6	1.5	-0.1	0.4	0.5	0.5	0.5	0.6	0.4	0.5	0.5	0.7	0.8	0.7	0.8	0.0
10th Grade	1.1	1.1	1.0	1.1	1.2	1.2	1.2	1.2	1.7	2.2	2.1	2.2	+0.1	0.6	0.6	0.5	0.6	0.6	0.5	0.7	0.6	0.9	1.0	0.9	1.0	+0.1
12th Grade	1.4	1.1	1.2	1.3	1.5	1.4	1.4	1.7	1.8	1.7	2.4	2.5	+0.1	0.8	0.6	0.7	0.9	0.7	0.7	1.0	1.1	0.9	0.8	1.3	1.4	+0.1
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Young Adults	0.5	0.4	0.3	0.4	0.5	0.3	0.5	0.4	0.6	0.4	0.4	0.4	0.0	0.2	0.1	0.0	0.1	0.2	0.2	0.2	0.2	0.3	0.1	0.1	0.1	0.0

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001.

'—' indicates data not available. '\*' indicates less than .05 percent but greater than 0 percent.

† indicates some change in the question. See relevant footnote for that drug. See relevant figure to assess the impact of the wording changes.

Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.

See Table 2-1 for relevant footnotes.

SOURCE: The Monitoring the Future Study, the University of Michigan.

**TABLE 2-3**

**Trends in 30-Day Prevalence of Daily Use of Various Drugs for Eighth, Tenth, and Twelfth Graders, College Students, and Young Adults (Ages 19-28)**

	Daily												'01-'02 change
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	
Marijuana/Hashish, daily <sup>w</sup>													
8th Grade	0.2	0.2	0.4	0.7	0.8	1.5	1.1	1.1	1.4	1.3	1.3	1.2	-0.1
10th Grade	0.8	0.8	1.0	2.2	2.8	3.5	3.7	3.6	3.8	3.8	4.5	3.9	-0.6s
12th Grade	2.0	1.9	2.4	3.6	4.6	4.9	5.8	5.6	6.0	6.0	5.8	6.0	+0.1
College Students	1.8	1.6	1.9	1.8	3.7	2.8	3.7	4.0	4.0	4.6	4.5	4.1	-0.4
Young Adults	2.3	2.3	2.4	2.8	3.3	3.3	3.8	3.7	4.4	4.2	5.0	4.5	-0.4
Alcohol <sup>s,w</sup>													
Any daily use													
8th Grade	0.5	0.6	‡ 1.0	1.0	0.7	1.0	0.8	0.9	1.0	0.8	0.9	0.7	-0.2
10th Grade	1.3	1.2	‡ 1.8	1.7	1.7	1.6	1.7	1.9	1.9	1.8	1.9	1.8	-0.1
12th Grade	3.6	3.4	‡ 3.4	2.9	3.5	3.7	3.9	3.9	3.4	2.9	3.6	3.5	-0.1
College Students	4.1	3.7	3.9	3.7	3.0	3.2	4.5	3.9	4.5	3.6	4.7	5.0	+0.3
Young Adults	4.9	4.5	4.5	3.9	3.9	4.0	4.6	4.0	4.8	4.1	4.4	4.7	+0.3
Been Drunk, daily <sup>s,w</sup>													
8th Grade	0.1	0.1	0.2	0.3	0.2	0.2	0.2	0.3	0.4	0.3	0.2	0.3	0.0
10th Grade	0.2	0.3	0.4	0.4	0.6	0.4	0.6	0.6	0.7	0.5	0.6	0.5	-0.2
12th Grade	0.9	0.8	0.9	1.2	1.3	1.6	2.0	1.5	1.9	1.7	1.4	1.2	-0.2
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—
5+ drinks in a row in last 2 weeks													
8th Grade	12.9	13.4	13.5	14.5	14.5	15.6	14.5	13.7	15.2	14.1	13.2	12.4	-0.8
10th Grade	22.9	21.1	23.0	23.6	24.0	24.8	25.1	24.3	25.6	26.2	24.9	22.4	-2.4s
12th Grade	29.8	27.9	27.5	28.2	29.8	30.2	31.3	31.5	30.8	30.0	29.7	28.6	-1.1
College Students	42.8	41.4	40.2	40.2	38.6	38.3	40.7	38.9	40.0	39.3	40.9	40.1	-0.8
Young Adults	34.7	34.2	34.4	33.7	32.6	33.6	34.4	34.1	35.8	34.7	35.9	35.9	0.0
Cigarettes													
Any daily use													
8th Grade	7.2	7.0	8.3	8.8	9.3	10.4	9.0	8.8	8.1	7.4	5.5	5.1	-0.3
10th Grade	12.6	12.3	14.2	14.6	16.3	18.3	18.0	15.8	15.9	14.0	12.2	10.1	-2.1ss
12th Grade	18.5	17.2	19.0	19.4	21.6	22.2	24.6	22.4	23.1	20.6	19.0	16.9	-2.1s
College Students	13.8	14.1	15.2	13.2	15.8	15.9	15.2	18.0	19.3	17.8	15.0	15.9	+0.8
Young Adults	21.7	20.9	20.8	20.7	21.2	21.8	20.6	21.9	21.5	21.8	21.2	21.2	-0.1
1/2 pack+/day													
8th Grade	3.1	2.9	3.5	3.6	3.4	4.3	3.5	3.6	3.3	2.8	2.3	2.1	-0.2
10th Grade	6.5	6.0	7.0	7.6	8.3	9.4	8.6	7.9	7.6	6.2	5.5	4.4	-1.2s
12th Grade	10.7	10.0	10.9	11.2	12.4	13.0	14.3	12.6	13.2	11.3	10.3	9.1	-1.2
College Students	8.0	8.9	8.9	8.0	10.2	8.4	9.1	11.3	11.0	10.1	7.8	7.9	+0.1
Young Adults	16.0	15.7	15.5	15.3	15.7	15.3	14.6	15.6	15.1	15.1	14.6	14.2	-0.4
Smokeless Tobacco, daily <sup>t</sup>													
8th Grade	1.6	1.8	1.5	1.9	1.2	1.5	1.0	1.0	0.9	0.9	1.2	0.8	-0.4
10th Grade	3.3	3.0	3.3	3.0	2.7	2.2	2.2	2.2	1.5	1.9	2.2	1.7	-0.6
12th Grade	—	4.3	3.3	3.9	3.6	3.3	4.4	3.2	2.9	3.2	2.8	2.0	-0.9
College Students	—	—	—	—	—	—	—	—	—	—	—	—	—
Young Adults	—	—	—	—	—	—	—	—	—	—	—	—	—

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001.  
 '—' indicates data not available.  
 ‡ indicates some change in the question. See relevant footnote for that drug. See relevant figure to assess the impact of the wording changes.  
 Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.  
 See Table 2-1 for relevant footnotes.

SOURCE: The Monitoring the Future Study, the University of Michigan.

## Chapter 3

### STUDY DESIGN AND PROCEDURES

Monitoring the Future has a complex cohort-sequential design appropriate for distinguishing and explaining three types of change: period-related, age-related, and cohort-related. This chapter contains a description of this research design, including the sampling plans and field procedures used in both the in-school surveys of the eighth-, tenth-, and twelfth-grade students and the follow-up surveys of younger and middle-aged adults. Related methodological issues such as response rates, population coverage, and the validity of the measures are also discussed. We begin with a description of the design that has been used consistently over 28 years to survey high school seniors; then we describe the more recently instituted design for eighth and tenth graders. Finally, the designs for the *follow-up* surveys of former twelfth graders, and former eighth and tenth graders, are covered.<sup>12, 13</sup>

#### RESEARCH DESIGN AND PROCEDURES FOR THE SURVEYS OF SENIORS

The data from high school seniors have been collected during the spring of each year starting with the class of 1975. Each year's data collection takes place in approximately 120 to 146 public and private high schools selected to provide an accurate representative cross section of high school seniors throughout the coterminous United States (see Figure 3-1).

##### The Population Under Study

The senior year of high school was chosen for several reasons as an optimal point for monitoring the drug use and related attitudes of youth. First, completion of high school represents the end of an important developmental stage in this society because it demarcates both the end of universal education and, for many, the end of living in the parental home. Therefore, it is a logical point at which to take stock of the cumulated influences of these two environments on American youth. Further, completion of high school represents the jumping-off point from which young people diverge into widely differing social environments and experiences. Senior year, then, represents a good time to take a "before" measure that allows calculation of changes that may be attributable to the many environmental and role transitions that occur in young adulthood. Finally, there were some important practical advantages to building the original system of data collections around samples of high school seniors. The need for systematically repeated, large-scale samples from which to make reliable estimates of change requires that considerable stress be laid on cost efficiency as well as feasibility. The last year of high school constitutes the final

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<sup>12</sup>For a more detailed description of the study design, see Bachman, J. G., Johnston, L. D., & O'Malley, P. M. (2001). *The Monitoring the Future project after twenty-seven years: Design and procedures*. (Monitoring the Future Occasional Paper No. 54.) Ann Arbor, MI: Institute for Social Research.

<sup>13</sup>For a more detailed description of the full range of research objectives of Monitoring the Future, see Johnston, L. D., O'Malley, P. M., Schulenberg, J. E., & Bachman, J. G. (2001). *The aims and objectives of the Monitoring the Future study and progress toward fulfilling them as of 2001*. (Monitoring the Future Occasional Paper No. 52.) Ann Arbor, MI: Institute for Social Research.

point at which a reasonably good national sample of an age-specific cohort can be drawn and studied economically.

### **The Omission of Dropouts**

One limitation in the study design is the exclusion of those young men and women who drop out of high school before graduation—between 15% and 20% of each age cohort nationally, according to U.S. Census statistics. Clearly, the omission of high school dropouts introduces biases in the estimation of certain characteristics of the entire age group; however, for most purposes, the small proportion of dropouts sets outer limits on the bias. Further, since the bias from missing dropouts should remain just about constant from year to year, their omission should introduce little or no bias in *change* estimates. Indeed, we believe the changes observed over time for those who finish high school are likely to parallel the changes for dropouts in most instances. Appendix A to Volume I addresses the likely effects of the exclusion of dropouts on estimates of drug use prevalence and trends among the entire age cohort; the reader is referred there for a more detailed discussion of this issue.

### **Sampling Procedures**

A multi-stage random sampling procedure is used to secure the nationwide sample of high school seniors each year. Stage 1 is the selection of particular geographic areas, Stage 2 is the selection (with probability proportionate to size) of one or more high schools in each area, and Stage 3 is the selection of seniors within each high school. Within each school, up to about 350 seniors may be included. In schools with fewer seniors, the usual procedure is to include all of them in the data collection, though a smaller sample is sometimes taken to accommodate the needs of the school. When a subset of seniors is to be selected, it is done either by randomly sampling entire classrooms or by some other unbiased, random method. Weights are assigned to compensate for differential probabilities of selection at each stage of sampling. Final weights are normalized to average 1.0 (so that the weighted number of cases equals the unweighted number of cases overall). This three-stage sampling procedure has yielded the numbers of participating schools and students over the years shown in Table 3-1.

### **Questionnaire Administration**

About 10 days before the questionnaire administration date, the target respondents are given flyers explaining the study. Local Institute for Social Research representatives and their assistants conduct the actual questionnaire administrations following standardized procedures that are detailed in a project instruction manual. The questionnaires are administered in classrooms during a normal class period whenever possible; however, circumstances in some schools require the use of larger group administrations.

### **Questionnaire Format**

Because many questions are needed to cover all of the topic areas in the study, much of the questionnaire content intended for high school seniors is divided into six different questionnaire forms distributed to participants in an ordered sequence that ensures six virtually identical random sub-samples. (Five questionnaire forms were used between 1975 and 1988.) About one third of each questionnaire form consists of key, or “core,” variables common to all forms. All demographic variables, and nearly all of the drug *use* variables included in this report, are

contained in this core set of measures. Many of the questions dealing with attitudes, beliefs, and perceptions of relevant features of the social environment are in a single form only, and the data are thus based on one fifth as many cases in 1975-1988 (approximately 3,300) and on one sixth as many cases in 1989-2002 (approximately 2,600). All tables in this report list the sample sizes upon which the statistics are based, stated in terms of the weighted number of cases (which is roughly equivalent to the actual number of cases).

## **RESEARCH DESIGN AND PROCEDURES FOR THE SURVEYS OF LOWER GRADES**

Beginning in 1991, there was an important expansion of the study to include nationally representative samples of eighth- and tenth-grade students. Surveys at these two grade levels have been conducted on an annual basis since 1991.

In general, the procedures used for the annual in-school surveys of eighth- and tenth-grade students closely parallel those used for high school seniors, including the procedures for selecting schools and students, questionnaire administration, and questionnaire formats. A major exception is that only two different questionnaire forms were used from 1991 to 1996, expanding to four forms beginning in 1997, rather than the six used with seniors. Eighth and tenth grades both receive the same questionnaire forms and, for the most part, the questionnaire content is drawn from the twelfth-grade questionnaires. Thus, key demographic variables and measures of drug use and related attitudes and beliefs are generally identical for all three grades. The forms used in both eighth and tenth grades have a common core (Parts B and C) that parallels the core used in twelfth-grade forms. Many fewer questions about lifestyles and values are included in the eighth- and tenth-grade forms, in part because we think that many of these attitudes are likely to be more fully formed by twelfth grade and, therefore, are best monitored there. For the national survey of eighth graders each year, approximately 150 schools (mostly junior high schools and middle schools) are sampled, and approximately 17,000 students have been surveyed. For the tenth graders, approximately 130 high schools have been sampled, and about 15,000 students surveyed. (See Table 3-1 for specifics.)

The research design originally called for follow-up surveys of sub-samples of the eighth and tenth graders participating in the study, carried out at two-year intervals, similar to the twelfth-grade follow-up samples. From 1991 to 1994, this plan influenced the design of the cross-sectional studies of eighth and tenth graders in an important way. In order to “recapture” many of the eighth-grade participants two years later in the normal tenth-grade cross-sectional study for that year, we selected the eighth-grade schools by drawing a sample of high schools and then selecting a sample of their “feeder schools” that contained eighth graders. This extra stage in the sampling process meant that many of the eighth-grade participants in, say, the 1991 cross-sectional survey were also participants in the 1993 cross-sectional survey of tenth graders. Thus, a fair amount of panel data was generated at no additional cost. However, having followed this design from 1991 through 1993, we concluded that the saving in follow-up costs did not justify the complexities in sampling, administration, and interpretation. Therefore, since 1994, we have used a simplified design in which eighth-grade schools were drawn independently of the tenth-grade school sample. Further follow-ups (at two-year intervals) have been conducted only

on panels of students drawn from the first three cohorts of students surveyed in the eighth and tenth grades, that is, those surveyed in school in 1991, 1992, and 1993.

### **Mode of Administration**

When follow-up surveys of new cohorts of eighth and tenth graders were no longer being conducted, the collection of personal identification information for follow-up purposes was no longer a necessity. For confidentiality reasons, this personal information had been gathered on a tear-off sheet at the back of each questionnaire. We felt that there were potential advantages in moving toward a fully anonymous procedure for these grade levels, including the following: (a) school cooperation might be easier to obtain; (b) any suppression effect that the confidential mode of administration might have could be both eliminated and quantified; and (c) if there *were* any mode of administration effect, it would be removed from the national data, which are widely used for comparison purposes in state and local surveys (nearly all of which use anonymous questionnaires), and thus make those comparisons more valid. Therefore, in 1998 for the first time, in half of the eighth- and tenth-grade schools surveyed, the questionnaires administered were made fully anonymous. Specifically, the half-sample of schools beginning their two-year participation in Monitoring the Future in 1998 received the anonymous questionnaires, while the half-sample participating in the study for their second and final year continued to get the confidential questionnaires.

A careful examination of the 1998 results, based on the two equivalent half-samples at grade 8, and also at grade 10, revealed that there was no effect of this methodological change among tenth graders, and, at most, only a very modest effect in the self-reported substance use rates among eighth graders (with prevalence rates slightly higher in the anonymous condition). The net effect of this methodological change is a possible increase in the observed eighth-grade prevalence estimates for marijuana, alcohol, and cigarettes in 1998 from what they would have been had there been no change in questionnaire administration. For those three drugs, that means that the declines in use in 1998 may be slightly understated for the eighth graders only. In other words, the direction of the change is the same as that shown in the tables, but the actual declines may be slightly larger than those shown. For example, the annual prevalence of marijuana use among eighth graders is shown to have fallen by 0.8 percentage points between 1997 and 1998; however, the half-sample of eighth-grade schools receiving exactly the same type of questionnaire that was used in 1997 showed a slightly greater decline of 1.5 percentage points.

For cigarettes, this change in method appeared to have no effect on self-reported rates of daily use or half-pack per day use and to have had only a very small effect on 30-day prevalence. Thus, for example, the 30-day prevalence of cigarette use among all of the eighth graders surveyed is shown to have fallen 0.3 percentage points between 1997 and 1998; while the half-sample of eighth-grade schools receiving exactly the same type of questionnaire as was used in 1997 showed a slightly greater decline of 0.6 percentage points. Finally, lifetime cigarette prevalence is shown as falling by 1.6 percentage points between 1997 and 1998, but in the half-sample of schools with a constant methodology, it fell by 2.6 percentage points.



We have examined in detail the effects of administration mode in a published journal article, in which we use multivariate controls to assess the effects of the change on the eighth-grade self-report data. It generally shows even less effect than is to be found without such controls.<sup>14</sup>

All tables and figures in Volume I use data from both half-samples of eighth graders surveyed in a given year, combined. This is also true for the tenth graders (for whom we found no methodological effect) and the twelfth graders (for whom it is assumed there is no such effect since none was found among the tenth graders). (See Representativeness and Sample Accuracy, School Participation, for a further discussion of half-samples among all three grades.) In 1999 the remaining half of the participating schools (all beginning the first of their two years of participation) received anonymous questionnaires, as well. Thus, from 1999 on, all data from eighth- and tenth-grade students are gathered using anonymous questionnaires. We continue to use confidential questionnaires with twelfth graders in order to permit follow-up of the small proportion who are randomly selected into the panel studies.

### **Questionnaire Forms and Sample Proportions**

Another consequence of not interlocking the school samples at eighth and tenth grades was that we could consider having more forms of the questionnaire. Earlier, from 1991 through 1996, two questionnaire forms were used in the surveys of eighth and tenth grade students, with a random half-sample of students in each grade receiving each of the two forms. (By having only two forms distributed randomly at each grade, we could by chance emerge with half of the students being surveyed both times with the same form, making panel analysis possible.) The constraint of “recapturing” students removed, we could consider having a larger number of forms. Beginning in 1997, the number of forms was expanded to four, but the four forms are not distributed in equal numbers. Forms 1, 2, 3, and 4 are assigned to one third, one third, one sixth, and one sixth of the students, respectively. Thus, if a question appears on only one form, it may be administered to either one third or one sixth of the sample. Similarly, a question in two forms may be assigned to one third of the sample (one sixth plus one sixth), one half of the sample (one third plus one sixth), or two thirds of the sample (one third plus one third). No questions appear on three forms. Footnotes to the tables indicate what proportion of all respondents in each grade complete the question, if that proportion is other than the entire sample.

The two additional forms were introduced to allow for more questions. The new forms 1 and 2 substantially follow the content of the previous forms 1 and 2, but each was now assigned to a third of the sample instead of half. Form 3 builds on form 1, with some questions omitted to make room for more content; and form 4 builds on the content of form 2 in a similar manner. Much of the new content was placed in both of the new forms (forms 3 and 4), each of which is administered to one sixth of the sample, in order to assign one third of the total sample to those new questions.

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<sup>14</sup>O'Malley, P. M., Johnston, L. D., Bachman, J. G., & Schulenberg, J. (2000). A comparison of confidential versus anonymous survey procedures: Effects on reporting of drug use and related attitudes and beliefs in a national study of students. *Journal of Drug Issues, 30*, 35-54.

## **RESEARCH DESIGN AND PROCEDURES FOR THE FOLLOW-UP SURVEYS OF SENIORS**

Beginning with the graduating class of 1976, some members of each senior class have been selected to be surveyed by mail after high school graduation. From the roughly 15,000 to 17,000 seniors originally participating in a given senior class, a representative sample of 2,400 individuals is chosen for follow-up. In order to ensure sufficient numbers of drug users in the follow-up surveys, seniors reporting 20 or more occasions of using marijuana in the previous 30 days (i.e., “daily users”), or *any* use of any of the other illicit drugs in the previous 30 days, are selected with higher probability (by a factor of 3.0) than the remaining seniors. Differential weighting is then used in all follow-up analyses to compensate for these differential sampling probabilities. Because those in the drug-using stratum receive a weight of only 0.33 in the calculation of all statistics to correct for their overrepresentation at the selection stage, there are actually more follow-up respondents than are reported in the weighted Ns given in the tables.

The 2,400 participants selected from each twelfth-grade class are randomly split into two matching groups of 1,200 each—one group to be surveyed on even-numbered calendar years, and the other group to be surveyed on odd-numbered years. This two-year cycle is intended to reduce the burden on individual respondents, thus yielding a better retention rate across the years. By alternating the two half-samples, we have data from a given graduating class every year, even though any given respondent participates only every other year.

Until 2002, each respondent was followed for up to seven times; at the seventh follow-up, which would occur either 13 or 14 years after graduation, the respondents had reached modal age of 31 or 32. Beginning in 2002, the seventh follow-up was discontinued, and each respondent was followed for up to six times, corresponding to modal age of 29 or 30. Additional follow-ups occur at modal age 35 and again at modal age 40. (Age 45 follow-ups will begin in 2003, when the Class of 1976 will be at that age.)

### **Follow-Up Procedures**

Using information provided by high school senior respondents on a tear-off card (containing the respondent’s name, address, phone number, and the name and address of someone who would always know how to reach them), mail contact is maintained with the subset of people selected for inclusion in the follow-up panels. Newsletters are sent to them each year, and name and address corrections are requested. Questionnaires are sent to each individual biennially in the spring of each year by certified mail. A check for \$10.00, made payable to the respondent, is attached to the front of each questionnaire.<sup>15</sup> Reminder letters and postcards are sent at fixed intervals thereafter; finally, those who have not responded receive a prompting phone call from the Survey Research Center’s phone interviewing facility in Ann Arbor, Michigan. If requested, a second copy of the questionnaire is sent; but no questionnaire content is administered by phone. If a respondent asks not to be bothered further, that wish is honored.

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<sup>15</sup>Note that, for the class of 1991 and all prior classes, the follow-up checks were for \$5.00. The rate was raised, beginning with the class of 1992, to compensate for the effects of inflation over the life of the study. An experiment was first conducted that suggested that the increased payment was justified based on the increased panel retention it achieved.

### **Follow-Up Questionnaire Format**

The questionnaires used in the follow-up surveys are very much like those used in the senior year. They are optically scanned; all forms contain a common core section that includes questions on drug use, background factors, and demographic factors; and they have questions about a wide range of topics at the beginning and ending sections, many of which are unique to each questionnaire form. Many of the questions asked of seniors are retained in the corresponding follow-up questionnaires, and respondents are consistently mailed the same version (or form) of the questionnaire that they first received in senior year, so that *changes over time* in their behaviors, attitudes, experiences, and so forth can be measured. Questions specific to high school status and experiences are dropped in the follow-up, of course, and questions relevant to post-high school status and experiences are added. Thus, there are questions about college, military service, civilian employment, marriage, parenthood, and so on. Most of these are added to the core section.

For the early follow-up cohorts, the numbers of cases on single-form questions were one fifth the size of the total follow-up sample because five different questionnaire forms were used. Beginning with the Class of 1989, a sixth form was introduced in senior year. That new questionnaire form was first sent to follow-up respondents in 1990; single-form data since then have Ns one sixth the total follow-up sample size. In the follow-up studies, single-form samples from a single cohort are too small to make reliable estimates; therefore, in most cases where they are reported, the data from several adjacent cohorts are combined or concatenated.

## **REPRESENTATIVENESS AND SAMPLE ACCURACY**

### **School Participation**

Schools are invited to participate in the study for a two-year period. For each school that declines to participate, a similar school (in terms of size, geographic area, urbanicity, etc.) is recruited as a replacement for that “slot.” In 2002, either an original school or a replacement school was obtained in 97% of the sample units, or “slots.” With very few exceptions, each school participating in the first year has agreed to participate in the second year as well. Figure 3-2 provides the year-specific school participation rates and the percentage of “slots” filled since 1977. (The data for the years prior to 1991 are for twelfth grade only; beginning in 1991, the data are for eighth, tenth, and twelfth grades, combined.) As shown in the table, replacements for declining schools are obtained in the vast majority of cases.

There are two questions that are sometimes raised with respect to school participation rates: (a) Are participation rates so low as to compromise the representativeness of the sample? (b) Does variation in participation rates over time contribute to changes in estimates of drug use?

With respect to the first issue, the selection of replacement schools (which occurs in practically all instances of an original school refusal) almost entirely removes problems of bias in region, urbanicity, and the like that might result from certain schools refusing to participate. Other potential biases could be more subtle, however. If, for example, it turned out that most schools with “drug problems” refused to participate, the sample would be seriously biased. And if any

other single factor were dominant in most refusals, that reason for refusal also might suggest a source of serious bias. In fact, however, the reasons given for a school refusing to participate tend to be varied and are often a function of happenstance specific to that particular year; only a very small proportion specifically object to the drug-related or “sensitive” nature of the content of the survey.

If it were the case that schools differed substantially in drug use, then which particular schools participated could have a greater effect on estimates of drug use. However, the great majority of variance in drug use lies within schools, not between schools. For example, for tenth graders in 1992, between-schools variance for marijuana use was 4%-6% of the total variance (depending on the specific measure); for inhalant use, 1%-2%; for LSD, 2%-4%; for crack cocaine, 1.0%-1.5%; for alcohol use, 4%-5%; and for cigarette use, 3%-4%. (Eighth- and twelfth-grade values are similar.) To the extent that schools tend to be fairly similar in drug use, then which particular schools participate (within a selection framework that seeks national representation) has a smaller effect on estimates of drug use. The fact that the overwhelming majority of variance in drug use lies within schools implies that, at least with respect to drug use, schools are for the most part fairly similar.<sup>16</sup> Further, some, if not most, of the between-schools variance is due to differences related to region, urbanicity, etc.—factors that remain well controlled in the present sampling design because of the way in which replacement schools are selected.

With respect to the second issue, the observed data from the series make it extremely unlikely that results have been significantly affected by changes in response rate. If changes in response rates seriously affected prevalence estimates, there would be noticeable bumps up or down in concert with the changing rates. But in fact the trend figures that result from this series of surveys are very smooth and change in a very orderly fashion from one year to the next. This suggests very strongly that the level of school-related error in the estimates does not vary much over time. Moreover, the fact that different substances trend in very different ways further refutes any likelihood that changes in response rates are affecting prevalence estimates. We have observed, for example, marijuana use decreasing while cocaine use was stable (in the early 1980s); alcohol use declining while cigarette use was stable (in the mid- to late 1980s); and marijuana use increasing while inhalant use was decreasing (from 1994 to 1997). All of these patterns are explainable in terms of psychological, social, and cultural factors (as described in this and previous volumes in this series) and cannot be explained by the common factor of changes in response rates.

Of course, there could be some sort of a constant bias across the years, but even in the unlikely event that there was, it seems highly improbable that it would be of much consequence for policy purposes, given that it would not affect trends and likely would have a very modest effect on prevalence rates. Thus we have a high degree of confidence that school refusal rates have not

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<sup>16</sup>Among the schools that actually participated in the study, there is very little difference in substance use rates between the schools that were original selections, taken as a set, and the schools that were replacement schools. Averaged over the years 1991 through 2000, for grades 8, 10, and 12 combined, the difference between original schools and replacement schools averaged 0.03% in the observed prevalence rates averaged across two indexes of annual illicit drug use, the annual prevalence of each of the major illicit drug classes, and several measures of alcohol and cigarette use. For the individual drugs and drug indexes, the differences between the original and replacement schools, averaged across grades and years, fell within  $\pm 0.9\%$ .

seriously biased the survey results. Nevertheless, it is apparent that, for a host of reasons, securing high school cooperation rates has become more difficult in recent years. This is a problem common to the field, not specific to Monitoring the Future. Therefore, in the study's most recent proposal for continuation we requested funding to permit the payment of schools as a means of increasing their incentives to participate. (Several other ongoing school survey studies already use payments to schools.) Such payments were approved and will be implemented in the 2003 survey.

At each grade level, schools are selected in such a way that half of each year's sample is comprised of schools that participated the previous year, and half is comprised of schools that will participate the next year. (Both samples are national replicates, meaning that each is drawn to be nationally representative by itself.) This staggered half-sample design is used to check on possible errors in the year-to-year trend estimates due to school turnover. For example, separate sets of one-year trend estimates are computed based on students in the half-sample of schools that participated in both 2000 *and* 2001, then based on the students in the half-sample that participated in both 2001 *and* 2002, and so on. Thus, each one-year *matched half-sample* trend estimate derived in this way is based on a constant set of schools (about 65 in twelfth grade, for example). When the trend data derived from the matched half-sample (examined separately for each class of drugs) are compared with trends based on the total sample of schools, the results are usually highly similar, indicating that the trend estimates are little affected by turnover or shifting refusal rates in the school samples. As would be expected, the *absolute* prevalence of use estimates for a given year are not as accurate using just the half-sample because the sample size is only half as large.

### Student Participation

In 2002, completed questionnaires were obtained from 91% of all sampled students in eighth grade, 85% in tenth grade, and 83% in twelfth grade. (See Table 3-1 for response rates in earlier years.) The single most important reason that students are missed is absence from class at the time of data collection; in most cases, for reasons of cost efficiency, we do not schedule special follow-up data collections for absent students. Students with fairly high rates of absenteeism also report above-average rates of drug use; therefore, some degree of bias is introduced into the prevalence estimates by missing the absentees. Much of that bias could be corrected through the use of special weighting based on the reported absentee rates of the students who *did* respond; however, we decided not to use such a weighting procedure because the bias in overall drug use estimates was determined to be quite small *and* because the necessary weighting procedures would have introduced greater sampling variance in the estimates. Appendix A in an earlier report<sup>17</sup> provides a discussion of this point, and Appendix A in this volume illustrates the changes in trend and prevalence estimates that would result if corrections for absentees had been included. Of course, some students are not absent from class but simply refuse, when asked, to complete a questionnaire. However, the proportion of explicit refusals amounts to less than 1.5% of the target sample for each grade.

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<sup>17</sup>Johnston, L. D., O'Malley, P. M., & Bachman, J. G. (1984). *Drugs and American high school students: 1975-1983*. DHHS (ADM) 85-1374. Washington, DC: U.S. Government Printing Office.

### **Sampling Accuracy of the Estimates**

Confidence intervals (95%) are provided in Tables 4-1a through 4-1d (Volume I) for lifetime, annual, 30-day, and daily prevalence of use for eighth-, tenth-, and twelfth-grade students. As can be seen in Table 4-1a, confidence intervals for lifetime prevalence for seniors average less than  $\pm 1.5\%$  across a variety of drug classes. That is, if we took a large number of samples of this size from the universe of all schools containing twelfth graders in the coterminous United States, 95 times out of 100 the sample would yield a result that would be less than 1.5 percentage points divergent from the result we would get from a comparable massive survey of *all* seniors in *all* schools. This is a high level of sampling accuracy, and it should permit detection of fairly small changes from one year to the next. Confidence intervals for the other prevalence periods (past 12 months, past 30 days, and current daily use) are generally smaller than those for lifetime use. In general, confidence intervals for eighth and tenth graders are very similar to those observed for twelfth graders. Some drugs (smokeless tobacco, PCP, nitrites, and others, as indicated in Table 2-1 footnotes) are measured on only one or two forms; these drugs will have somewhat larger confidence intervals due to their smaller sample sizes. Appendix C contains information for the interested reader on how to calculate confidence intervals around other point estimates; it also provides the information needed to compare trends across time or to test the significance of differences between subgroups in any given year.

### **PANEL RETENTION**

We discuss here the nature of the problem of panel attrition generally, the response rates we have attained in the Monitoring the Future panel surveys in recent years, and evidence relevant to assessing the impact of attrition on the study's research results.

#### **The Problem of Panel Attrition**

Virtually all longitudinal studies of drug use, including Monitoring the Future, experience attrition, which is often differential with respect to substance use.<sup>18</sup> In addition, survey response rates in general have been declining over the past few decades,<sup>19</sup> highlighting an important challenge in the conduct of population-based research.

A vital feature of the Monitoring the Future panel studies is their very low cost per respondent. There are many advantages to collecting panel data through low-cost mail surveys, as we have done since the outset of the study. Indeed, given the number of panel surveys we administer each year (roughly 15,000) across the entire coterminous United States, using low-cost mail surveys is our best (and really the only) cost-effective option. One disadvantage of this mode of data collection is that attrition rates tend to be higher than those that might be obtained with much more expensive methods, for example, with more intensive and expensive personal tracking and interviewing. Certainly there exist a few large epidemiological/etiologic surveys that have better retention rates than Monitoring the Future, but their procedures are extremely

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<sup>18</sup>McGuigan, K. A., Ellickson, P. L., Hays, R. D., & Bell, R. M. (1997). Adjusting for attrition in school-based samples: Bias, precision, and cost trade-off of three methods. *Evaluation Review*, 21, 554-567.

<sup>19</sup>Groves, R. M., Dillman, D. A., Eltinge, J. L., & Little, R. J. A. (Eds.). (2002). *Survey nonresponse*. New York: Wiley.

expensive and not realistic for an ongoing effort like this one.<sup>20</sup> Nevertheless, our retention rates compare reasonably favorably with those of most longitudinal studies (including interview studies) reported in the field.

### Response Rates Attained

We begin with the college student segment in the follow-up sample. The series of survey data on American college students now goes back 22 years. We know about actual college attendance only from the follow-up questionnaire answers; however, we can use senior year questionnaire answers (i.e., college intentions and program of study) to predict college attendance with a high degree of accuracy. The study's retention of college-bound seniors remains quite good. Among those follow-up respondents who, in high school, reported planning to attend college *and* being enrolled in a college-prep curriculum, the follow-up retention rates in 2001 for the three most recent classes surveyed at each follow-up point were 70% in the first follow-up, one to two years past high school (based on the classes of 1998-2000); 67% in the second follow-up, three to four years past high school (based on the classes of 1996-1998); and 65% in the third follow-up, five to six years past high school (based on the classes of 1994-1996). While to date we have reported in Volume II only on college students who are one to four years past high school graduation, the average age of attendance has been rising. Therefore, having the extended age coverage is of growing importance. The follow-up participation rates just noted compare favorably with the other major national survey of substance use among college students, the Harvard College Alcohol Study, which in both 1997 and 1999 had cross-sectional response rates of 60%.<sup>21</sup>

Retention rates in the biennial follow-ups of *all* panel members ages 19-30 (corresponding to the first six follow-ups) decline with the length of the follow-up interval, of course. For the five-year period from 1997 to 2001, the response rate in the first follow-up (corresponding to 1-2 years past high school) averaged 65%; for the second through sixth follow-ups (corresponding to 3-12 years past high school) response rates were (respectively) 62%, 60%, 55%, 55%, and 53%. Among the very long-term respondents—the 35- and 40-year-olds—the retention rates are quite good, apparently because some of the decline in retention rates reflects cohort differences. Among the 35-year-old respondents surveyed from 1997 to 2001 (corresponding to 17 years past high school), the average response rate was 57%. Among the 40-year-old respondents surveyed from 1998 (the first survey of this age group) to 2001, corresponding to a 22-year follow-up interval, the average retention rate was 61%.

In sum, the response rates attained under the current design range from respectable to quite good, especially when the low-cost nature of the procedures and the substantial length of the questionnaires are taken into account. More important, the evidence leaves us confident that the data resulting from these follow-up panels are reasonably accurate, which brings us to our adjustments for panel attrition and the comparison of our results with those from other sources.

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<sup>20</sup>See, for example, footnote 7.

<sup>21</sup>Wechsler, H., Lee, J. E., Kuo, M., & Lee, H. (2000). College binge drinking in the 1990s: A continuing problem. Results of the Harvard School of Public Health 1999 College Alcohol Study. *Journal of American College Health*, 48, 195-198.

### **The Impact of Panel Attrition on Research Results**

One of the important purposes of the Monitoring the Future follow-ups is to allow estimation of drug prevalence rates among American high school graduates at various age levels, published annually in Volume II of this series. Thus, we have always been concerned about making the appropriate adjustments to take account of panel attrition. In essence, our standard adjustment procedure is a post-stratification procedure in which we re-weight the obtained follow-up samples so as to reproduce the original (senior year) distribution of usage reports for (separately) cigarettes, alcohol, marijuana, and (combined) other illicit drugs. As expected, this procedure produces estimates that are somewhat higher than those uncorrected for attrition, indicating that there is indeed some positive association between drug use and panel attrition. However, the adjustments are relatively modest, as documented next. One reason the adjustments are modest is that attrition rates do not differ greatly by levels of senior year substance use; they do differ, but less than one might expect. For example, among all respondents who had never used marijuana, an average of 81% of the classes of 1976-1993 participated in the first follow-up. The proportion responding is somewhat lower among those who had used marijuana once or twice in the past 12 months: 78%. This proportion decreases gradually with increasing levels of marijuana use; but even among those who used marijuana on 20-39 occasions in the past 30 days in their high school senior year, 71% participated in the first follow-up. The corresponding participation rates for the same drug-use strata at the fourth follow-up (i.e., at ages 25-26) were 68%, 65%, and 60%, respectively. Thus, even among those who in high school were quite heavy users of marijuana, response rates at the fourth follow-up were only 8 percentage points lower than among those who had never used marijuana by high school senior year. That is not to say that we assume that all types of drug users remain in the panels at high rates. We believe that people who become dependent on, or addicted to, heroin or cocaine are unlikely to be retained in any reasonable proportions. That is why we are careful to not quantify or characterize these special segments of the population. But we note that they constitute very low proportions of the entire population and even low proportions of the drug-using portion of the adult population. Therefore, for a great many purposes, our samples are extremely useful.

The National Household Survey on Drug Abuse (NHSDA) would seem to provide the best available data against which to validate the estimates generated for adult age groups in Monitoring the Future, because it is also based on national samples but uses cross-sectional surveys that do not carry the burden of panel attrition. (Their results, of course, may be affected by their own non-response rates; but that will be true of any comparison survey. The overall response rates for the NHSDA were about 73% in 1997 and 1998, and 61% in 1999.)

We compared the prevalence rates on a set of drugs—cigarettes, alcohol, marijuana, and cocaine—for which there was reasonable similarity in question wording across the two studies. The comparisons to follow are for the age group 19-28 in the Monitoring the Future panel data and for 19-28 (or 19-29 for 1999 only) in the NHSDA cross-sectional data. The most recent data from NHSDA that were readily available were for 1999, so the following comparisons are for that year. (However, similar comparisons were run for a number of prior years, and the outcomes are highly consistent.) The comparisons are not perfect; most notably, the NHSDA data contain school dropouts and, other things equal, that would lead one to expect its rates to be higher than those from Monitoring the Future. Nevertheless, the Monitoring the Future estimates



for the 30-day prevalence of marijuana actually are higher (14.0% without post-stratification and 15.6% with it) than the NHSDA estimate (11.0%). The same is true for the 12-month cocaine prevalence estimate (4.8% without post-stratification and 5.4% with it, vs. 4.3% in the NHSDA).

The other two comparisons made were for alcohol and cigarettes. Both of these drugs show larger differences, with alcohol use consistently higher in Monitoring the Future and cigarette use consistently higher in NHSDA. We believe it likely that both are due to definitional differences in the exact question wording. In 1999, Monitoring the Future estimates of 30-day alcohol prevalence were 68.0% and 68.2% (with post-stratification) vs. 59.5% in NHSDA. For cigarettes, the 30-day Monitoring the Future prevalence estimates were 28.3% and 30.3%, respectively, vs. 37.4% in NHSDA. It is worth noting that the nature and magnitude of the differences between Monitoring the Future and NHSDA estimates tend to be quite consistent for each of the four drugs since at least 1992.

The fact that Monitoring the Future estimates for both marijuana and cocaine are higher than NHSDA estimates (especially after applying the post-stratification re-weighting) suggests that attrition does not produce substantially lower estimates of drug use than would be obtained if response rates were higher. Our estimates come out as high as, and in fact a bit higher than, the best available comparison study for estimating rates using cross-sectional data, and that despite our loss of dropouts and absentees.

It is also worth noting that even with the attrition, there remain in the Monitoring the Future follow-up samples substantial proportions of recent users of the various substances. About 15%-16% of respondents report marijuana use in just the past 30 days, and about 5% reported past 12-month use of cocaine. These proportions and the underlying numbers of actual cases are quite adequate for analytic purposes, particularly given the fact that the follow-up surveys over-sample those who reported illicit drug use in the senior year surveys.

An important point worth emphasizing here is that in the present study, attrition is not necessarily as great a problem as is nonresponse in a cross-sectional study. This is because we already know a great deal about each of the follow-up non-respondents, including their substance use, based on a lengthy questionnaire in senior year (and, for many, in subsequent years as well). Thus, adjustments can be made utilizing data that are highly informative about the lost individuals. As stated by Schafer and Graham, “We recommend procedures that use all the available data for each participant, because missing information can then be partially recovered from earlier or later waves. Longitudinal modeling by ML [Maximum Likelihood] can be a highly efficient way to use the available data. MI [Multiple Imputation] of missing responses is also highly effective if we impute under a longitudinal model that borrows information across waves” (p. 150).<sup>22</sup>

### **Effects on Relational Analyses**

While differential attrition (uncorrected) may contribute to some bias in point estimates and other univariate statistics, such attrition tends to have less influence on bivariate and multivariate statistics. This was found to be true in a secondary analysis of data from seven panel studies that

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<sup>22</sup>Schafer, J. L., & Graham, J. W. (2002). Missing data: Our view of the state of the art. *Psychological Methods*, 7(2), 147-177.

followed adolescents over time,<sup>23</sup> and we have found this to be true in our Monitoring the Future panel analyses,<sup>24</sup> and in analyses with other panel data sets.<sup>25</sup> Thus, differential attrition may be less of a concern in multivariate panel analyses focused on understanding the course, causes, and consequences of substance use. Still, as we summarized above, correcting for attrition is important, and we continue to do so.

## VALIDITY OF THE MEASURES OF SELF-REPORTED DRUG USE

Are sensitive behaviors such as drug use honestly reported? Like most studies dealing with sensitive behaviors, we have no direct, totally objective validation of the present measures; however, the considerable amount of existing inferential evidence strongly suggests that the self-report questions used in Monitoring the Future produce largely valid data. A more complete discussion of the contributing evidence that leads to this conclusion may be found in other publications; here we only briefly summarize the evidence.<sup>26</sup>

First, using a three-wave panel design, we established that the various measures of self-reported drug use have a high degree of reliability—a necessary condition for validity.<sup>27</sup> In essence, respondents were highly consistent in their self-reported behaviors over a three- to four-year time interval. Second, we found a high degree of consistency among logically related measures of use within the same questionnaire administration. Third, the proportion of seniors reporting some illicit drug use by senior year has reached two-thirds of all respondents in peak years and over 80% in some follow-up years, constituting *prima facie* evidence that the degree of underreporting must be very limited. Fourth, the seniors' reports of use by their unnamed friends—about whom they would presumably have less reason to distort reports of use—has been highly consistent with self-reported use in the aggregate in terms of both prevalence *and* trends in prevalence, as will be discussed later in this report. Fifth, we have found self-reported drug use to relate in consistent and expected ways to a number of other attitudes, behaviors,

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<sup>23</sup>Cordray, S., & Polk, K. (1983). The implication of respondent loss in panel studies of deviant behavior. *Journal of Research in Crime and Delinquency*, 20, 214-242.

<sup>24</sup>Bryant, A. L., Schulenberg, J., Bachman, J. G., O'Malley, P. M., & Johnston, L. D. (2000). Understanding the links among school misbehavior, academic achievement, and cigarette use: A national panel study of adolescents. *Prevention Science*, 1(2), 71-87; Schulenberg, J., Bachman, J. G., O'Malley, P. M., & Johnston, L. D. (1994). High school educational success and subsequent substance use: A panel analysis following adolescents into young adulthood. *Journal of Health and Social Behavior*, 35, 45-62.

<sup>25</sup>Bachman, J. G., O'Malley, P. M., & Johnston, J. (1978). *Youth in Transition: Vol. 6. Adolescence to adulthood: A study of change and stability in the lives of young men*. Ann Arbor, MI: Institute for Social Research; Schulenberg, J., Bryant, A. L., Bachman, J. G., O'Malley, P. M., & Johnston, L. D. (1999, April). *Transitional floundering among well-functioning adolescents: National panel data spanning the transition to young adulthood*. Presentation in symposium "Falling Apart and Getting It Together: Discontinuity in Health and Well-Being during the Transition to Young Adulthood" (J. Schulenberg & A. Bryant, Chairs). 1999 Biennial Meetings of the Society for Research in Child Development, Albuquerque, NM.

<sup>26</sup>Johnston, L. D., & O'Malley, P. M. (1985). Issues of validity and population coverage in student surveys of drug use. In B. A. Rouse, N. J. Kozel, & L. G. Richards (Eds.), *Self-report methods of estimating drug use: Meeting current challenges to validity* (NIDA Research Monograph No. 57 (ADM) 85-1402). Washington, DC: U.S. Government Printing Office; Johnston, L. D., O'Malley, P. M., & Bachman, J. G. (1984). *Drugs and American high school students: 1975-1983*. DHHS (ADM) 85-1374. Washington, DC: U.S. Government Printing Office; Wallace, J. M., Jr., & Bachman, J. G. (1993). Validity of self-reports in student-based studies on minority populations: Issues and concerns. In M. de LaRosa (Ed.), *Drug abuse among minority youth: Advances in research and methodology*. NIDA Research Monograph. Rockville, MD: National Institute on Drug Abuse.

<sup>27</sup>O'Malley, P. M., Bachman, J. G., & Johnston, L. D. (1983). Reliability and consistency in self-reports of drug use. *International Journal of the Addictions*, 18, 805-824.

beliefs, and social situations—in other words, there is strong evidence of “construct validity.” Sixth, the missing data rates for the self-reported use questions are only very slightly higher than for the preceding nonsensitive questions, in spite of explicit instructions to respondents immediately preceding the drug section to leave blank those drug use questions they felt they could not answer honestly. Seventh, an examination of consistency in reporting of lifetime use conducted on the long-term panels of graduating seniors found quite low levels of recanting of earlier-reported use of the illegal drugs.<sup>28</sup> There was a higher level of recanting for the psychotherapeutic drugs, which we interpreted as suggesting that adolescents actually may overestimate their use of some of these drugs because of misinformation about definitions that is corrected as they get older. Finally, the great majority of respondents, when asked, say they would answer such questions honestly if they were users.<sup>29</sup>

This is not to argue that self-reported measures of drug use are valid in all cases. In the present study we have gone to great lengths to create a situation and set of procedures in which students feel that their confidentiality will be protected. We have also tried to present a convincing case as to why such research is needed. We think the evidence suggests that a high level of validity has been obtained. Nevertheless, insofar as any remaining reporting bias exists, we believe it to be in the direction of underreporting. Thus, we believe our estimates to be lower than their true values, even for the obtained samples, but not substantially so.

One procedure we undertake to help assure the validity of our data is worth noting. We check for logical inconsistencies in the triplets of answers about the use of each drug (i.e., about lifetime, past year, and past 30-day use), and if a respondent exceeds a minimum number of inconsistencies, his or her record is deleted from the data set. Similarly, we check for improbably high rates of use of multiple drugs and delete such cases, on the assumption that the respondents are not taking the task seriously. Relatively few cases are eliminated for these reasons.

### **Consistency and the Measurement of Trends**

One further point is worth noting in a discussion of the validity of the findings. The Monitoring the Future project is designed to be sensitive to changes from one time period to another. A great strength of this study, in our opinion, is that the measures and procedures have been standardized and applied consistently across many years. To the extent that any biases remain because of limits in school and/or student participation, and to the extent that there are distortions (lack of validity) in the responses of some students, it seems very likely that such problems will exist in much the same way from one year to the next. In other words, biases in the survey estimates will tend to be consistent from one year to another, which means that our measurement of *trends* should be affected very little by any such biases. The smooth and consistent nature of

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<sup>28</sup>Johnston, L. D. & O'Malley, P. M. (1997). The recanting of earlier reported drug use by young adults. In Harrison, L. (Ed.), *The validity of self-reported drug use: Improving the accuracy of survey estimates* (pp. 59-80). (NIDA Research Monograph 167, pp 59-79). Rockville, MD: National Institute on Drug Abuse.

<sup>29</sup>For a discussion of reliability and validity of student self-report measures of drug use like those used in Monitoring the Future across varied cultural settings, see also Johnston, L. D., Driessen, F. M. H. M., & Kokkevi, A. (1994). *Surveying student drug misuse: A six-country pilot study*. Strasbourg, France: Council of Europe.

## *Monitoring the Future*

most trend curves reported for the various drugs provides rather compelling empirical support for this assertion.

**TABLE 3-1**  
**Sample Sizes and Response Rates**

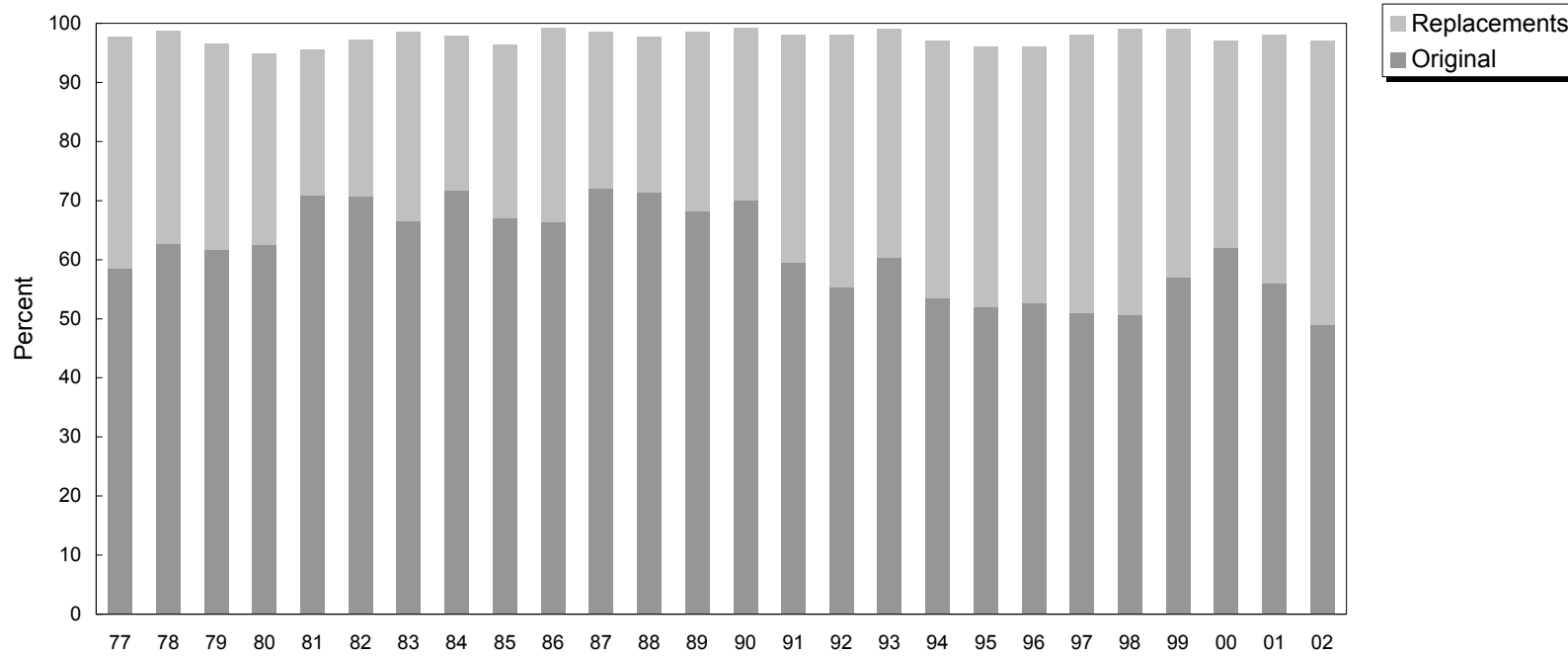
Grade:	<u>Number of Public Schools</u>			<u>Number of Private Schools</u>			<u>Total Number of Schools</u>				<u>Total Number of Students</u>				<u>Student Response Rate</u>		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	Total	8th	10th	12th	Total	8th	10th	12th
1975	—	—	111	—	—	14	—	—	125	—	—	—	15,791	—	—	—	78%
1976	—	—	108	—	—	15	—	—	123	—	—	—	16,678	—	—	—	77
1977	—	—	108	—	—	16	—	—	124	—	—	—	18,436	—	—	—	79
1978	—	—	111	—	—	20	—	—	131	—	—	—	18,924	—	—	—	83
1979	—	—	111	—	—	20	—	—	131	—	—	—	16,662	—	—	—	82
1980	—	—	107	—	—	20	—	—	127	—	—	—	16,524	—	—	—	82
1981	—	—	109	—	—	19	—	—	128	—	—	—	18,267	—	—	—	81
1982	—	—	116	—	—	21	—	—	137	—	—	—	18,348	—	—	—	83
1983	—	—	112	—	—	22	—	—	134	—	—	—	16,947	—	—	—	84
1984	—	—	117	—	—	17	—	—	134	—	—	—	16,499	—	—	—	83
1985	—	—	115	—	—	17	—	—	132	—	—	—	16,502	—	—	—	84
1986	—	—	113	—	—	16	—	—	129	—	—	—	15,713	—	—	—	83
1987	—	—	117	—	—	18	—	—	135	—	—	—	16,843	—	—	—	84
1988	—	—	113	—	—	19	—	—	132	—	—	—	16,795	—	—	—	83
1989	—	—	111	—	—	22	—	—	133	—	—	—	17,142	—	—	—	86
1990	—	—	114	—	—	23	—	—	137	—	—	—	15,676	—	—	—	86
1991	131	107	117	31	14	19	162	121	136	419	17,844	14,996	15,483	48,323	90%	87%	83
1992	133	106	120	26	19	18	159	125	138	422	19,015	14,997	16,251	50,263	90	88	84
1993	126	111	121	30	17	18	156	128	139	423	18,820	15,516	16,763	51,099	90	86	84
1994	116	116	119	34	14	20	150	130	139	419	17,708	16,080	15,929	49,717	89	88	84
1995	118	117	120	34	22	24	152	139	144	435	17,929	17,285	15,876	51,090	89	87	84
1996	122	113	118	30	20	21	152	133	139	424	18,368	15,873	14,824	49,065	91	87	83
1997	125	113	125	27	18	21	152	131	146	429	19,066	15,778	15,963	50,807	89	86	83
1998	122	110	124	27	19	20	149	129	144	422	18,667	15,419	15,780	49,866	88	87	82
1999	120	117	124	30	23	19	150	140	143	433	17,287	13,885	14,056	45,228	87	85	83
2000	125	121	116	31	24	18	156	145	134	435	17,311	14,576	13,286	45,173	89	86	83
2001	125	117	117	28	20	17	153	137	134	424	16,756	14,286	13,304	44,346	90	88	82
2002	115	113	102	26	20	18	141	133	120	394	15,489	14,683	13,544	43,716	91	85	83

SOURCE: The Monitoring the Future Study, the University of Michigan.

FIGURE 3-1  
Schools Included in One Year's Data Collection  
Eighth, Tenth and Twelfth Grades



**FIGURE 3-2  
School Response Rates**



	<u>77</u>	<u>78</u>	<u>79</u>	<u>80</u>	<u>81</u>	<u>82</u>	<u>83</u>	<u>84</u>	<u>85</u>	<u>86</u>	<u>87</u>	<u>88</u>	<u>89</u>	<u>90</u>	<u>91</u>	<u>92</u>	<u>93</u>	<u>94</u>	<u>95</u>	<u>96</u>	<u>97</u>	<u>98</u>	<u>99</u>	<u>00</u>	<u>01</u>	<u>02</u>
Original	59	63	62	63	71	71	66	72	67	66	72	71	68	70	59	55	60	53	52	53	51	51	57	62	56	49
Replacements	39	36	35	32	25	26	32	26	29	33	26	26	30	29	39	43	39	44	44	43	47	48	42	35	42	48
Total	98	99	97	95	96	97	99	98	96	99	99	98	99	99	98	98	99	97	96	96	98	99	99	97	98	97

## Chapter 4

### PREVALENCE OF DRUG USE AMONG EIGHTH-, TENTH-, AND TWELFTH-GRADE STUDENTS

Two important questions asked about any health-related condition are (a) how widespread is the condition? and (b) in what segments of the population is it concentrated? These two questions are addressed in this chapter with respect to a large number of abusable substances, both licit and illicit. Both prevalence and frequency of use data for the year 2002 are presented for each drug on (a) lifetime use, (b) use in the past 12 months, and (c) use in the prior 30 days. The prevalence of current daily use also is provided, as are the prevalence and frequency of having five or more drinks in a row. For cigarettes, the rate of smoking a half-pack or more per day is included, in addition to a measure of daily smoking.

Later in the chapter, prevalence estimates are given for key *subgroups* in the population based on six cross-break dimensions: gender, college plans, region of the country, population density (or urbanicity), socioeconomic status (as measured by the average educational level of the parents), and racial/ethnic identification. These estimates are provided separately for each of the three grade levels covered in this research—grades 8, 10, and 12.

It should be noted that all of the prevalence statistics are based on students in attendance on the day of the survey administration. Selected prevalence rate estimates for twelfth-grade students, reflecting adjustments for the missing absentees, as well as for dropouts, may be found in Appendix A to this report (17% of twelfth graders were absent on the day of the survey in 2002). (The adjustments turn out not to be particularly large and to have virtually no effect on trend estimates.) For eighth and tenth graders, the adjustments for absenteeism and dropping out would be much smaller than those given in Appendix A for twelfth graders because eighth and tenth graders have considerably lower rates of absenteeism (9% and 15%, respectively, in 2002) and far lower rates of dropping out.

#### PREVALENCE AND FREQUENCY OF DRUG USE IN 2002: ALL STUDENTS

##### Prevalence of Lifetime, Annual, and 30-Day Use

A number of tables and figures, upon which the following discussion is based, are provided at the end of this chapter. *Prevalence of use* estimates are provided in Tables 4-1a through 4-1d, respectively, for lifetime, past 12-month, past 30-day, and current daily use. These tables also include the 95% confidence intervals around each estimate, which means that if samples of this size and type were drawn repeatedly from all students at that grade level in the coterminous United States, they would be expected to generate observed prevalence rates that fell within the confidence interval 95 times out of 100. The confidence intervals take into account the effects of sample stratification, the clustering of the sample in schools, and unequal weighting. Of course, the single best estimate that we can make is the value actually observed in our sample—our point estimate.



Table 4-2 brings together on a single page, to facilitate comparisons, the point estimates for all four prevalence periods.

Table 4-3 gives a more detailed breakdown for *heroin* by the mode of administration, differentiating use with and without a needle.

Table 4-4a provides data on *frequency* of use for lifetime, 12-month, and 30-day periods.

Table 4-4b provides additional frequency of use estimates for alcohol, cigarettes, and smokeless tobacco.

- More than half of all seniors (53%) in 2002 reported *any illicit drug use* at some time in their lives (see Table 4-2). Some 45% of tenth graders and 25% of eighth graders said they have used an illicit drug at some time.<sup>30</sup>
- Of all the students in each grade reporting some illicit drug use in their lifetime, just under half reported using *only marijuana*: 44% of all eighth-grade users of any illicit drug (or 11% of the total eighth-grade sample), 50% of all tenth-grade users of any illicit drug (or 23% of the total tenth-grade sample), and 44% of the twelfth-grade users of any illicit drug (or 24% of the total twelfth-grade sample). (These figures are not explicitly provided in the tables but can be derived from the information therein.) Put another way, more than half of the eighth and twelfth graders and half of the tenth graders who have ever used an illicit drug have used something in addition to, or other than, marijuana.
- When inhalants are also included in the index of illicit drug use, the proportions categorized as having ever used an illicit drug rise, especially for eighth graders. The percentages using *any illicit drug including inhalants* in their lifetime are 32% for eighth graders, 48% for tenth graders, and 55% for twelfth graders.
- *Marijuana* is by far the most widely used illicit drug. Nearly half of all seniors (48%) reported some marijuana use in their lifetime, 36% reported some use in the past year, and 22% reported some use in the past month. Among tenth graders, the corresponding rates are 39%, 30%, and 18%, respectively. Even among eighth-grade students, marijuana has been used by one in five (19%), with 15% reporting use in the prior year and 8% use in the prior month. Current *daily marijuana use* (defined as use on 20 or more occasions in the past 30 days) is also noteworthy. One in 17 twelfth graders (6.0%) uses marijuana daily, as do one in 26 tenth graders (3.9%) and about one in 83 eighth graders (1.2%).

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<sup>30</sup>For twelfth graders, use of "other illicit drugs" includes any use of hallucinogens, cocaine, or heroin *and/or* any use of other narcotics, amphetamines, sedatives (barbiturates), methaqualone (excluded since 1990), or tranquilizers that is not under a doctor's orders. For eighth and tenth graders the list of drugs is the same except that the use of other narcotics and sedatives (barbiturates) has been excluded both from the illicit drug indexes and from separate presentation in this volume. Questions on these drugs were included in the questionnaires given to eighth and tenth graders, but the results led us to believe that some respondents were including nonprescription drugs in their answers, resulting in exaggerated prevalence of use rates.

- **Inhalants** have become an important class of drugs, showing the second highest lifetime prevalence of use rate among eighth graders, the third highest among tenth graders, and the fourth highest among twelfth graders of any of the illicit drugs used, with lifetime prevalence rates of 15%, 14%, and 12%, respectively. However, in terms of any use in the past 30 days (current use), inhalants rank lower in the upper grade levels because many who had used them at a younger age have discontinued use.

An examination of the trends in lifetime prevalence by grade level (see Table 2-1) shows that a difference emerged among the grades in the early nineties, with the upper grades showing *lower* lifetime prevalence than the lower grades. This seemingly anomalous finding could be due to various factors, though we think the most likely is that, because inhalant use was rising in that period, the rise expressed itself most vigorously in the ages in which inhalant use is most popular, that is, the early teens. Those in their later teens were past the age at which they were most likely to initiate use. Thus, this could be a cohort effect in which a period effect expressed itself most in a particular age group. A more general reason that there might be lower lifetime prevalence at older ages than younger is because the dropout segment is only represented in the younger ages. But, because dropping out has been fairly stable in recent years, that fact could hardly account for a change in the degree of difference. Changing validity of reporting with age is possible, of course, but in order to account for the data one would have to hypothesize that this tendency became stronger in the 1990s.

- **Amyl and butyl nitrites**, a specific class of inhalants, have been tried by 1.5% of 2002 seniors. These inhalants have been sold legally in the past and have gone by such street names as “poppers” or “snappers” and such brand names as Locker Room and Rush. When questions specifically about nitrite use were included for the first time in one 1979 senior questionnaire form, we discovered that some users of amyl and butyl nitrites did not report themselves as inhalant users, although they should have. We were able to make estimates of the degree to which inhalant use was being underreported. As a result, we introduced ***inhalants adjusted*** prevalence estimates, which correct for the under-inclusion of nitrite use. Such correction has made very little difference in recent years because of the low rates of nitrite use.<sup>31</sup>
- For eighth graders, inhalant use is followed closely in the rankings by ***amphetamines***, with a lifetime prevalence of use rate of 8.7%.<sup>32</sup> But amphetamine use comes ahead of inhalant use in the rankings for tenth and twelfth graders, with 15% of tenth graders and 17% of twelfth graders reporting some use in their lifetime. (Considerably lower prevalence rates are found for the specific class ***methamphetamine***, with 4%, 6%, and 7%, of eighth, tenth, and twelfth graders reporting any lifetime use. Lower still is the use

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<sup>31</sup>Because the data to adjust inhalant and hallucinogen use for seniors are available from only a single questionnaire form in a given year, the original uncorrected variables will be used in most relational analyses. We believe relational analyses will be least affected by these underestimates and that the most serious impact is on prevalence estimates, which have been adjusted appropriately. Today, the very low levels of use for nitrites and PCP—the two drugs that were used to adjust the estimates for inhalants and hallucinogens, respectively—are so low that these adjustments are hardly relevant any longer. Therefore, questions about their use were not even included in the eighth- and tenth-grade questionnaires.

<sup>32</sup>For findings on the specific amphetamine drugs, including Ritalin, see Appendix E.

of *crystal methamphetamine* (“ice”), which has a lifetime prevalence of 5% among twelfth graders; use is not asked in the lower grades.)

- **Hallucinogens** are the next most widely used class of substances. Lifetime prevalence of use is 4.1% for eighth graders, 7.8% for tenth graders, and 12.0% for twelfth graders. Until last year, hallucinogen prevalence rates ranked this high primarily due to the prevalence of **LSD** use (2.5%, 5.0%, and 8.4%, respectively, for the three grade levels). Now, a larger proportion of students indicate using **hallucinogens other than LSD** (3.3%, 6.3%, and 9.2%).
- Another drug used for its somewhat hallucinogenic properties is **ecstasy (MDMA)**. At present the lifetime prevalence rates for this drug stand at 4.3%, 6.6%, and 10.5% in grades 8, 10, and 12—rates that are higher than LSD and cocaine in all three grades.
- When specific questions about **PCP** use were added in 1979, we discovered that some users of PCP did not report themselves as users of hallucinogens, even though PCP is explicitly included as an example in the questions about hallucinogens. Thus, from 1979 onward, we have included the **hallucinogens adjusted** prevalence and trend estimates for seniors to correct for this known underreporting. As with the correction for underreporting of nitrites, such correction has made very little difference in recent years among seniors, because the rate of PCP use is so low. (See earlier footnote regarding nitrites.)
- Lifetime prevalence of use among seniors for the specific hallucinogenic drug **PCP** now stands at 3.1%, substantially lower than the lifetime prevalence of the other most widely used hallucinogens, **LSD** (8.4%) and **ecstasy** (10.5%).
- Lifetime prevalence rates for **cocaine** use by eighth, tenth, and twelfth graders are 3.6%, 6.1%, and 7.8%, respectively.
- **Crack**, a form of cocaine that comes in small chunks or “rocks,” can be smoked to produce a rapid and intense high. It currently has a relatively low lifetime prevalence of use rate in all grade levels: 2.5% for eighth graders, 3.6% for tenth graders, and 3.8% for twelfth graders.

Of all students reporting *any* cocaine use, a significant proportion have some experience with crack: two thirds of the eighth-grade cocaine users (69%), over one half of the tenth-grade users (59%), and nearly one half of the twelfth-grade users (49%) reported using crack.

- **Heroin** is one of the least commonly used of the illicit drugs for each grade level. Lifetime use is 1.7% for twelfth graders, 1.8% for tenth graders, and 1.6% for eighth graders. For many years the heroin available in the United States had such a low purity that the only practical way to use it was by injection, usually intravenously. However, due to high production at the world level, purity rose substantially and, as a result, smoking and snorting became more common modes of use. Because of these changes, in

1995 we added separate questions on taking heroin with and without a needle. We found that significant proportions of those reporting any heroin use in the previous 12 months indicated using *heroin without a needle*. In 2002 this was true of a third of the eighth-grade heroin users (0.3% out of the 0.9% indicating any use), nearly one half of the tenth-grade users (0.5% out of 1.1%), and more than half of the twelfth-grade users (0.6% out of 1.0%). In addition, roughly half of the remaining users of heroin in each grade reported use both with and without a needle (see Table 4-3 for more detail on heroin use by mode of administration).

- *Other narcotics* are in the top third of the ranking for seniors (10% lifetime prevalence). (Data for eighth and tenth graders are not reported for other narcotics because the data are of questionable validity.)
- Questions were introduced in 2002 about the use of two specific narcotic drugs, OxyContin and Vicodin. Because we often are not sure how widespread the use of such new drugs is, we have developed a measurement approach that begins with what we call a single “tripwire” question, which asks *only* about the frequency of use in the last twelve months. The purpose of such a question is to determine whether the drug is making sufficient inroads to justify the larger allocation of questionnaire space given to most drugs. The results for OxyContin showed a modest rate of OxyContin use in these age groups, with annual prevalence rates of 1.3%, 3.0%, and 4.0% for grades 8, 10, and 12. The rates for Vicodin were considerably higher at 2.5%, 6.9%, and 9.6%, respectively. These prevalence rates are far higher than for heroin. Among twelfth graders (where the comparison is possible), more students reported that they used Vicodin in the past 12 months than said they used any *narcotic other than heroin*, of which it is a subclass. It thus appears that some Vicodin users do not see it as a narcotic drug.
- *Tranquilizers* also fall in the top third of the prevalence rankings of illicit drugs, with lifetime prevalence rates of 4.3%, 8.8%, and 11.4% for grades 8, 10, and 12, respectively.
- Within the general class of sedatives, the specific drug *methaqualone* is used by many fewer seniors (1.5% lifetime prevalence of use) than the much broader subclass of sedatives, which are labeled in the tables as “*sedatives (barbiturates)*” (9.5% lifetime prevalence of use).<sup>33</sup> Because methaqualone use has become so limited, questions about its use have not been included in the eighth- and tenth-grade questionnaires. The sedative (barbiturate) questions have been included in the grade 8 and 10 questionnaires, but the results are not reported because we suspect that the younger respondents include the use of drugs that are not sedatives (barbiturates).
- The illicit drug classes remain in roughly the same order whether ranked by lifetime, annual, or monthly prevalence of use, as the data in Figure 41 illustrate. The only

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<sup>33</sup>Barbiturates were the dominant form of sedatives in use when these questions were first introduced. In the intervening years, a number of non-barbiturate sedatives have entered the market and largely displaced barbiturate sedatives. Because our question did not change, we believe that a number of users of non-barbiturate sedatives are reporting them in answer to the barbiturate question, which also defines them in terms of the conditions for which they are prescribed. In recognition of this fact we will now label them as “sedatives” though to date the question specifies “barbiturates.”

important change in ranking occurs for *inhalant* use among the tenth and twelfth graders, for whom inhalants rank lower for current use than for lifetime use. This variation occurs because use of a number of inhalants, such as glues and aerosols, tend to be discontinued at a relatively early age. Among the eighth graders, however, it should be noted that nearly 1 in 13 (7.7%) sniffed or “huffed” some inhalant in the prior 12 months, and 1 in 26 (3.8%) did so in just the 30-day interval preceding the survey.

- Two of the newer drugs reported to be on the scene were included in the 2000 survey for the first time, *GHB* and *ketamine*. These two drugs were each measured with a single “tripwire question” asking about their frequency of use in the prior 12 months.
- Neither of these drugs turned out to have particularly high annual prevalence rates. (See Table 4-6.) In 2002, *GHB*, which stands for gamma-hydroxybutyrate (a central nervous system depressant) and goes by such street names as “grievous bodily harm” and “G,” had annual prevalence rates of 0.8%, 1.4%, and 1.5% in grades 8, 10, and 12, respectively. It is known as a “date rape” drug, because of its ability to induce amnesia of events that occurred while under the influence. There has been considerable adverse publicity in the media about this drug in recent years, which may explain the limited rates of use.
- *Ketamine*, also known as “*special K*” and “*K*,” had only slightly higher annual prevalence rates: 1.3%, 2.2%, and 2.6%, respectively, for grades 8, 10, and 12. It is an anesthetic used mostly in veterinary medicine; and it can induce dream-like states and hallucinations.
- Use of either of the two major licit drugs, *alcohol* and *cigarettes*, remains more widespread than use of any of the illicit drugs. Nearly four out of every five students (78%) have at least tried *alcohol* by twelfth grade, and half of all twelfth graders (49%) reported using alcohol in the month prior to the survey (Table 4-2). Even among eighth graders, the number of students who reported some alcohol use in their lifetime is high: almost half (47%) said they have tried alcohol and a fifth (20%) are current (past 30 days) drinkers.<sup>34</sup>
- Of greater concern than just any use of alcohol is its use to the point of inebriation: 21% of the eighth graders, 44% of the tenth graders, and 62% of the twelfth graders said they have *been drunk* at least once in their lifetime. The prevalence rates of self-reported drunkenness during the 30 days immediately preceding the survey are strikingly high—7%, 18%, and 30%, respectively, for grades 8, 10, and 12.

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<sup>34</sup>In 1993 the text of the alcohol prevalence of use question was changed slightly in half of the questionnaire forms used at each grade such that the respondent was told explicitly to *exclude* those occasions when the respondent had “just a few sips” of an alcoholic beverage. In 1994 this change was made to the remaining forms. The 2002 data presented here are all based on the revised question. In graphs in this volume, the 1993 data are presented for both the original question and the revised question. As would be expected, the prevalence of use rates dropped slightly as a result of this methodological change, with the largest shifts observed in the lifetime prevalence of use measures and among the eighth-grade respondents.

- Another measure of heavy drinking asks respondents to report how many occasions during the previous two-week period they had consumed **five or more drinks in a row**. Prevalence rates for this behavior are 12%, 22%, and 29% for the three grades, respectively.<sup>35</sup>
- Over half (57%) of seniors reported having tried **cigarettes** at some time, and more than one quarter (27%) smoked at least some in the prior month. Even among eighth graders, three in every ten (31%) reported having tried cigarettes and 11% smoked in the prior month.
- **Bidis**, a type of flavored cigarette imported from India, was included in the questionnaires for the first time in 2000, with a single “tripwire” question asking about the frequency of use in the past year. The 2002 proportions using bidis during the past year were 3% in eighth and tenth grades and 6% in twelfth grade. Presumably, 30-day and daily use would be far lower.
- **Kreteks**, a type of clove cigarette that also is usually imported, was added in 2001 to the list of “tripwire” questions. In 2002, prevalence was found to be fairly similar to bidis, with 3%, 5%, and 8% reporting use in the past 12 months in eighth, tenth, and twelfth grades, respectively.
- **Smokeless tobacco** is used by a surprisingly large number of young people. Among eighth, tenth, and twelfth graders, lifetime prevalence of use rates are 11%, 17%, and 18%, respectively, while current (past 30 days) prevalence of use rates are 3.3%, 6.1%, and 6.5%, respectively. As will be discussed later in this chapter, the rates are considerably higher among boys, who account for most of the use of smokeless, or “spit,” tobacco.
- Questions about **anabolic steroids** were added to the study in 1989. These drugs bear some resemblance to a number of other drugs in the study in that their distribution and sale are legally controlled (with some important exceptions) and, like those other drugs, they often find their way into an illicit market. They also carry a particular danger for HIV transmission since they are often taken by injection. However, they differ from all the other drugs discussed here in one important way: they are not usually taken for their direct psychoactive effects (although they may have some) but rather for their enhancement of the user’s musculature and for healing physical injuries. Clearly their potential unintended consequences, including the transmission of HIV, make their illicit use a public health concern. It is for these reasons that they were added to the study.

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<sup>35</sup>We have noted previously that the prevalence of heavy drinking (five or more drinks in a row at least once in the past two weeks) seems inconsistent with eighth-grade students’ reported prevalence of getting drunk. In 2002, 12% of eighth graders said they had had five or more drinks in a row at least once in the past two weeks. However, only 7% said they had been drunk or very high from drinking in the past 30 days. It seems unlikely that about one half of eighth graders who reported having five or more drinks in a row would not have become intoxicated from such an amount. We suspect that they may be overreporting their occasions of heavy drinking, perhaps forgetting what a drink means, even though the questionnaire explicitly tells them that a drink means a bottle of beer, a glass of wine, a wine cooler, a shot of liquor, or a mixed drink. We believe that of the two measures, the reports of getting drunk or very high are likely to be the more accurate for eighth graders, at least.

The overall prevalence rates for anabolic steroids are modest relative to many other drugs. For eighth, tenth, and twelfth graders, lifetime prevalence rates are 2.5%, 3.5%, and 4.0%, respectively, while current (past 30 days) prevalence of use rates are 0.8%, 1.0%, and 1.4%, respectively. Annual prevalence rates are 1.5%, 2.2% and 2.5%. However, the annual prevalence rates for males are distinctly higher at 1.8%, 3.2%, and 3.8%, respectively, compared to 1.2%, 1.2%, and 1.3% for females.

- Another closely related class of substance is *androstenedione*, which is a precursor to anabolic steroids and which is used for much the same purpose—to enhance strength and physique. It is different in that it is currently legal to purchase over the counter. Concern grew about adolescents' use of androstenedione when their reported use of anabolic steroids increased sharply in 1999, a year marked by press reports of its use by prominent professional athletes. A single “tripwire” question was added in 2001 to determine how widespread the use of this class of drug actually is, partly in order to check whether some of the increase in reported steroid use actually was due to androstenedione use. The 2002 annual prevalence rates were 1.2%, 1.9%, and 2.5% in eighth, tenth, and twelfth grades, respectively—somewhat lower than for steroid use for eighth and tenth grades but by no means insignificant. (As with steroids, the annual prevalence rates are considerably higher among males; in this case, they are 1.7%, 2.2%, and 4.7%.) In the questionnaire forms containing both drugs, we find that a significant minority of those students reporting anabolic steroid use in 2002 also reported using androstenedione in the later tripwire question specifically addressing androstenedione: 38%, 30%, and 28% in grades 8, 10, and 12, respectively. Therefore, it is possible that some of the reported steroid use is, in fact, androstenedione use and that some of the increase in reported steroid use in the late 1990s was indeed due to increasing use of androstenedione.<sup>36</sup>
- Another physique-enhancing substance is *creatine*, though it is not usually considered a drug at all but rather a type of protein supplement that is believed by some to help build muscle mass. Because we thought that a number of boys were probably using this substance along with steroids and/or androstenedione, we added a tripwire question about its use in 2001. It turns out that we were correct; in fact, the use of creatine, which is sold over the counter, was even more widespread than we expected. This is troublesome, given the limited research knowledge about the long-term effects of using this substance. The proportion of boys reporting use of creatine in the past 12 months was 4%, 13%, and 17% in grades 8, 10, and 12. Many fewer girls report use—0.9%, 2.1%, and 1.5%, respectively.

### Frequency of Lifetime, Annual, and 30-Day Use

While most of the discussion in this volume focuses on prevalence of use rates for different time periods (i.e., lifetime, annual, and 30-day), some readers may be interested in more detailed information about the frequency with which various drugs have been used in these same time

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<sup>36</sup>Looked at the the other way around, the proportion of those who reported any androstenedione use in the prior twelve months who *also* reported any steroid use in the same interval is 43%, 36%, and 24% for eighth, tenth, and twelfth graders, respectively. Put another way, roughly between a quarter and a half of androstenedione users are also reporting steroid use, which sets outer limits on the degree to which these two questions are double-counting the same behaviors.

periods. Tables 4-4a and 4-4b present frequency-of-use information in the full detail contained in the original question-and-answer sets.

### Prevalence of Current Daily Use

Frequent use of illicit or licit drugs is a great concern for the health and safety of adolescents. Table 4-2 (and Table 5-4 in chapter 5) and Figure 4-2 show the prevalence of current daily or near-daily use of the various classes of drugs. For all drugs except cigarettes and smokeless tobacco, respondents are considered current daily users if they indicated that they had used the drug on 20 or more occasions in the preceding 30 days. Respondents are considered daily users of cigarettes if they explicitly stated the use of one or more cigarettes per day and daily users of smokeless tobacco if they stated using “about once a day” or more often.

- Across all three grade levels, there are more current daily users of *cigarettes* than of any of the other drug classes: 5.1%, 10%, and 17% in grades 8, 10, and 12, respectively, in 2002. Many of these daily smokers say they currently smoke a half-pack or more per day (2.1%, 4.4%, and 9.1% of all respondents in grades 8, 10, and 12, respectively).
- Daily use of *smokeless tobacco* is considerably lower than daily use of cigarettes, at 0.8%, 1.7%, and 2.0%, for eighth, tenth, and twelfth grades, respectively. The rates among boys are quite a bit higher, however, as is discussed later in a section on gender differences in use rates.
- The proportions of students who consume *tobacco* daily in either or both forms (i.e., as cigarettes and/or smokeless tobacco) are only slightly higher than the proportions who use cigarettes alone. This is because there are relatively few daily users of smokeless tobacco, as just noted, but also because two thirds of the daily smokeless users did not use cigarettes on a daily basis.
- For many years *alcohol* was the next most frequently used drug on a daily basis at all three grade levels, but because daily marijuana use rose substantially in the 1990s, it now exceeds daily alcohol use. The daily alcohol use rates in 2002 were 0.7%, 1.8%, and 3.5% in grades 8, 10, and 12, respectively.
- *Marijuana* is now used on a daily or near-daily basis by 1 of every 17 seniors (6%); somewhat fewer tenth-grade students and considerably fewer eighth-grade students use it daily (3.9% and 1.2%, respectively). (See chapter 10 for information on levels of past daily use and cumulative daily use of marijuana.)
- Less than 1% of the twelfth-grade respondents reported daily use of any one of the illicit drugs other than marijuana. Only 0.7% reported daily use of *amphetamines*, followed by 0.4% or fewer using a number of drug classes (see Table 5-4). While very low, these figures are not inconsequential because 1% of the high school class of 2002, for example, represents roughly 35,000 individuals nationwide.



## NONCONTINUATION RATES

One indication of the proportion of people who try a drug but do not continue to use it can be derived from calculating the percentage of those who ever used a drug (once or more) who did *not* use it in the 12 months preceding the survey.<sup>37</sup> We use the word “noncontinuation” to describe this operational definition, rather than “discontinuation,” because the latter might imply discontinuing an established pattern of use, whereas our current operational definition includes noncontinuation by experimental users as well as established users. Figure 4-3 provides these noncontinuation rates for all drug classes for all grades in 2002. This figure shows that noncontinuation rates vary widely among the various drugs.

- Among twelfth graders the highest noncontinuation rates are observed for **PCP** (65%). **Inhalants** follow closely (at 62%); since many inhalants are used primarily at a younger age, use is often not continued into the senior year. After inhalants, the rank ordering for noncontinuation rates is as follows: **LSD** (58%), **heroin with and without a needle** (both 50%), **methamphetamine** (46%), **hallucinogens in general** (45%), **hallucinogens other than LSD** and **heroin in general** (both 41%), **crack cocaine** and **methaqualone** (both 40%), **steroids** (38%), **other cocaine** (37%), **cocaine in general** and **crystal methamphetamine** (both 36%), **amphetamines** (34%), **tranquilizers** (33%), **narcotics other than heroin** (31%), **sedatives (barbiturates)** and “**ecstasy**” (both 30%), **nitrite inhalants** (27%), and **marijuana** (24%).
- Because a relatively high proportion of users continues to use **marijuana** at some level over an extended period, it consistently has had one of the lowest noncontinuation rates in the senior year of any of the illicit drugs (24% in 2002).
- It is noteworthy that of all the seniors who have ever used **crack** (3.8%), only one third (1.2%) are current users and only 0.1% of the total sample are current daily users. While there is no question that crack is highly addictive, the evidence from this study has consistently suggested that it is not usually addictive on the first use, as was sometimes alleged.
- In contrast to illicit drugs, noncontinuation rates for the two licit drugs are extremely low. **Alcohol**, tried by the great majority of seniors (78%), is still used in the senior year by nearly all who have ever tried it (72% of all seniors), yielding a noncontinuation rate for alcohol of only 9%.<sup>38</sup>
- Noncontinuation is defined differently for **cigarettes**, because respondents are not asked to report on cigarette use in the past year. The noncontinuation rate is thus defined as the percentage of those who say they ever smoked “regularly” who also reported not

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<sup>37</sup>This operationalization of noncontinuation has an inherent problem in that users of a given drug who initiated use during the past year by definition cannot be noncontinuers. Thus, the definition tends to understate the noncontinuation rate, particularly for drug use that tends to be initiated late in high school rather than in earlier years.

<sup>38</sup>Specifically, dividing the 71.5% annual rate by the 78.4% lifetime rate yields a *continuation* rate of 91.2%; the *noncontinuation* rate is thus 8.8%.

smoking at all during the past 30 days. Of the seniors who said they were regular smokers, only 17% have ceased active use.

- Noncontinuation is defined for *smokeless tobacco* much the same way as for cigarettes. It also has a relatively low rate of noncontinuation by senior year—only 20% of the lifetime “regular” users had not used it in the past 30 days.

## PREVALENCE COMPARISONS FOR IMPORTANT SUBGROUPS

The differences in prevalence of use for the various drugs associated with gender, college plans, region of the country, population density, parents’ education level, and racial/ethnic identification are presented and discussed next. Tables 4-5 through 4-9 provide the statistics on the usage rates for the various subgroups defined on these dimensions.

### Gender Differences

In general, higher proportions of males than females are involved in illicit drug use, especially heavy drug use; however, this picture is a somewhat complicated one (see Tables 4-5 through 4-8).

- Overall, the proportion of twelfth graders using *marijuana* is higher among males (annual prevalence of use is 40%, versus 32% among females), and daily use of marijuana is even more concentrated among males (8.7% versus 3.1% for females). This is also true among eighth- and tenth-grade students (see Tables 4-6 and 4-8).
- Males have considerably higher prevalence of use rates on most other illicit drugs, too. The annual prevalence of use rates in the senior year tend to be at least one and one half to two times as high among males as among females for *inhalants*, *nitrites*, *hallucinogens*, *hallucinogens other than LSD*, *LSD*, *PCP*, *cocaine*, *heroin with a needle*, *OxyContin*, *Vicodin*, *Ritalin*, *Rohypnol*, *GHB*, *ketamine*, *bidis*, *kreteks*, and *steroids*. Further, males account for an even greater share of the frequent or heavy users of these various classes of drugs. For many of these drugs, there is little gender difference in use among eighth and tenth graders, however. In fact, for some drugs, including *any illicit drug other than marijuana*, *inhalants*, *MDMA*, *other cocaine*, *heroin*, *amphetamines*, *methamphetamine*, and *tranquilizers*, females have slightly higher rates of annual use in eighth grade. Thus, the gender differences observed in twelfth grade, with males more likely to use many drugs, seem to emerge over the course of middle to late adolescence.
- In twelfth grade, females have an annual prevalence rate for *amphetamines* (10.7%) nearly equivalent to that for males (11.3%), and in the earlier grades females actually have higher rates of amphetamine use. Indeed, it is probably largely due to their higher use of amphetamines in the lower grades that females show higher levels of using *some illicit drug other than marijuana* in those grades.

- The proportions of high school seniors who reported using *some illicit drug other than marijuana* during the last year do not differ significantly by gender (22% for males versus 19% for females; see Figure 5-7 in chapter 5). If going beyond marijuana is an important threshold point in the sequence of illicit drug use, then fairly similar proportions of both genders were willing to cross that threshold at least once during the year. However, on average, female users take fewer types of drugs and tend to use them with less frequency than their male counterparts.
- The use of *anabolic steroids* is heavily concentrated among males: twelfth-grade males have an annual prevalence of use rate of 3.8% compared to 1.3% among females. In eighth grade, the difference is less: 1.8% versus 1.2%, respectively.
- Frequent use of *alcohol* also tends to be disproportionately concentrated among males. *Daily alcohol use*, for example, is reported by 5.3% of the twelfth-grade males versus only 1.7% of the twelfth-grade females. Males are more likely than females to drink large quantities of alcohol in a single sitting: 34% of twelfth-grade males reported drinking *five or more drinks in a row* in the prior two weeks versus 23% of twelfth-grade females.<sup>39</sup> These gender differences are observable at all three grade levels, but they become considerably larger at the higher grade levels.
- In recent years, *smoking* rates among seniors have been similar for males and females. In 2002 twelfth-grade males and females reported almost equal rates of *smoking daily* in the past month (17% for males versus 16% for females) and similar rates of smoking *a half-pack or more per day* (10% for males and 8% for females). In eighth and tenth grades, daily smoking rates are also very close for the two genders (5.4% for males versus 4.9% for females in eighth grade, and 9.4% versus 10.8% in tenth grade.)
- The smoking of *bidis* tends to be more concentrated among males. (See Table 4-6.)
- The use of *smokeless tobacco* is almost exclusively a male behavior. Although 12% of the twelfth-grade males reported some use in the prior month, only 1.2% of the females did. Rates of daily use by males are 1.5% among eighth graders, 3.0% among tenth graders, and 4.3% among twelfth graders. The comparable statistics for females are only 0.2%, 0.2%, and 0.0%, respectively.

### Differences Related to College Plans

Overall, students who say they probably or definitely will complete four years of college (referred to here as the “college-bound”) have lower rates of illicit drug use in secondary school than those who say they probably or definitely will not. (See Tables 4-5 through 4-8 and Figures 5-8 through 5-9 in chapter 5.)

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<sup>39</sup>Because females tend to weigh less than males and may metabolize alcohol somewhat differently, a given quantity of ingested alcohol would, on average, lead to higher blood alcohol concentrations for females compared to males. Therefore, the difference in terms of a fixed number of drinks, such as five or more drinks, may not reflect the difference in intoxication rates. The difference in self-reported 30-day prevalence of drunkenness among seniors is 9 percentage points (34% for males versus 27% for females), which is nearly two thirds of the 11-percentage-point gender difference in having five or more drinks in a row (34% versus 23%).

It is interesting to note that while the great majority of students at all three grade levels expect to complete college (see Table 4-7), the proportion who indicate college plans is higher at the lower grade levels than in the upper grades, despite the fact that the lower grades contain the 15% to 20% of each cohort who eventually will drop out of high school. There likely are cohort shifts in college attendance taking place, as there have been throughout the life of the study, that may partially explain this anomaly; but there also likely is a considerable age effect, as well, wherein early aspirations become reality tested (and adjusted) as secondary school experience cumulates.

For any given drug, the differences between these two self-identified groups of college- or noncollege-bound students tend to be greatest in the eighth grade. This difference in the lower grades could reflect noncollege-bound students' earlier age of drug use initiation and/or the fact that some eventual dropouts still attend school at eighth grade.

- Annual *marijuana* use is reported by 35% of the college-bound seniors versus 41% of the noncollege-bound, but among eighth graders it is reported by only 13% of the college-bound versus 33% of the noncollege-bound.
- Among 2002 seniors, 19% of the college-bound reported using *any illicit drug other than marijuana* in the prior year versus 27% of the noncollege-bound.
- Frequent use of many of these illicit drugs shows even larger contrasts related to college plans (see Table 4-8). *Daily marijuana* use among twelfth graders, for example, is twice as high among those who do not plan to attend college (10.3%) as among those who are college-bound (4.6%). Among tenth graders it is three times as high and among eighth graders it is six times as high.
- An examination of Table 4-6 will show that quite large ratio differences may be found between the college-bound and the noncollege-bound on virtually *all of the illicit drugs other than marijuana*; and the ratios tend to be highest in the earlier grades. In all cases, the noncollege-bound have the higher annual prevalence rate.
- Frequent alcohol use also is considerably more prevalent among the noncollege-bound. For example, *daily drinking* is reported by 4.8% of the noncollege-bound seniors versus 3.1% of the college-bound seniors. *Binge drinking* (five or more drinks in a row at least once during the preceding two weeks) is reported by 34% of the noncollege-bound seniors versus 27% of the college-bound. There are also modest differences between the noncollege-bound and college-bound seniors in lifetime (81% versus 78%), annual (75% versus 71%), and 30-day (53% versus 47%) prevalence of alcohol use. In the lower grades, there are even larger differences in the various drinking measures between those who say they expect to go to college and those who do not (see Tables 4-6 though 4-8).
- At all three grade levels, more noncollege-bound students use *steroids* compared to college-bound students.

- By far, the largest and most dramatic difference in substance use between the college- and noncollege-bound involves *cigarette* smoking—6.7% of the college-bound seniors reported smoking *a half-pack or more daily* compared to 17.5% of the noncollege-bound seniors. The proportional differences are even larger in the lower grades: 1.5% versus 8.4%, respectively, in eighth grade and 3.1% versus 11.5% in tenth grade. (The absence of dropouts by twelfth grade undoubtedly reduces the ratio, since dropouts have a particularly high rate of smoking.)

### **Regional Differences**

Some regional differences in the rates of illicit drug use among high school seniors may be observed in Tables 4-5 through 4-8 and Figure 5-10a-c in chapter 5. See Figure 4-4 for a regional division map showing the states included in the four regions of the country as defined by the Census Bureau. The states in each region are also listed in Appendix B.

- In 2002 the overall rates of *any illicit drug* use differed some among the regions. The highest rate was in the Northeast, where 46% of seniors said they had used an *illicit drug* in the past year, followed closely by the North Central (42%), the West (41%), and then the South (38%) (see Figure 5-10a in chapter 5).
- Among twelfth graders, there generally has been little difference in *marijuana* use among the regions, except that use in the South typically has been lower than in the other three regions. That remains generally true this year, except that the Northeast (at 42%) shows a somewhat higher annual prevalence than the North Central (at 38%) and the West (at 35%). (The South is at 33%.)
- At present, there is little regional variation in terms of the percentage of seniors using some *illicit drug other than marijuana* in the past year: the Northeast is at 22%, with the South and West at 21% and the North Central at 20%.
- In the past, there consistently was a large regional difference in the use of *ice*, or crystal methamphetamine, with the West having the highest rate. The highest rate in 2002 among seniors is still in the West, with 4.0% annual prevalence of use, followed by the South (3.5%), the Northeast (2.6%), and the North Central (2.0%).
- In the past, the largest observed regional differences have been in *cocaine* use, and the West tended to have the highest level of use. Regional differences in recent years are much smaller, although the West has the highest rate of use of both cocaine and crack among tenth graders.
- Generally, the South has had the highest rate of *tranquilizer* use at all three grades for some years.
- The South has the highest rate of *barbiturate* use in twelfth grade (the only grade for which it is reported).

- **Rohypnol**—which, like tranquilizers and sedatives (barbiturates), is a central nervous system depressant—does not show regional differences that are at all consistent across grades.
- The use of **ecstasy** does not vary much by region, except that the Northeast is particularly high among twelfth graders at 10% annual prevalence.
- For some years, the annual prevalence rates of **alcohol** use among seniors have been somewhat lower in the South and West than in the Northeast and North Central regions, though there has been little regional difference in the lower grades. This year the same remains true, although the differences are slight.
- The West continues to have considerably lower rates of **daily smoking** than the other regions at all three grade levels (Table 4-8).
- The use of **smokeless tobacco**, particularly current daily use, tends to be concentrated in the South and North Central.

### Differences Related to Population Density

Three levels of population density (or urbanicity) have been distinguished for analytical purposes: (a) large MSAs, which are the largest Metropolitan Statistical Areas in the 1990 Census; (b) other MSAs, which are the remaining Metropolitan Statistical Areas; and (c) non-MSAs, which are the sampling areas not designated as metropolitan by the Census Bureau. (See Appendix B for further details.)

In general, the differences in the use of most illicit drugs across these various-sized communities are small, reflecting how widely illicit drug use has diffused through the population (see Tables 4-5 through 4-8).

- In twelfth grade, annual **marijuana** use is somewhat lower in the non-urban areas (31%) than in the large and other metropolitan areas (38%).
- On the other hand, at all three grade levels, **amphetamine** use is slightly higher in non-urban areas than in the metropolitan areas.
- In eighth and tenth grades, **binge drinking** is highest in the nonmetropolitan areas (Table 4-8); the differences are slight among twelfth graders.
- **Daily cigarette** use is inversely related to community size at all three grade levels. (See Table 4-8.) The proportional differences are larger at the lower grades; for example, among eighth graders use is about twice as high in the non-urban areas as in the other strata. In 2002 the daily smoking rates for eighth graders were 3.2% in the large cities, 5.1% in the other cities, and 7.6% in the nonmetropolitan areas.

- **Smokeless tobacco** use also is highest in the non-urban areas at all three grade levels, and again, the differences are large. Current prevalence of use (past 30 days) is two to four times as high in the non-urban areas as in the most urban (e.g., for eighth graders, 30-day prevalence is 1.5% in the large MSAs, 2.9% in the other MSAs, and 6.2% in the non-MSAs). Daily use of smokeless tobacco is even more concentrated in the more rural areas (see Table 4-8). Clearly, the use of smokeless or “spit” tobacco continues to be a largely rural phenomenon, particularly among rural males in the South and North Central regions of the country.

### **Differences Related to Parental Education**

The best measure of family socioeconomic status available in the study is an index of parental education, which is based on the average of the educational levels reported for both parents by the respondent (or on the data for one parent, if data for both are not available). The scale values on the original questions read as follows: (1) completed grade school or less, (2) some high school, (3) completed high school, (4) some college, (5) completed college, and (6) graduate or professional school after college. The respondent is instructed to indicate on this scale the highest level of education each parent attained. (It should be noted that the average educational level obtained by students’ parents has risen over the years.) Tables 4-5 through 4-8 give the distributions for 2002 for each grade level.

- By senior year there is rather little association with family socioeconomic status for the use of **most drugs**. This again speaks to the extent to which illicit drug use has permeated all social strata in American society.

However, an examination of Table 4-6 shows that in eighth grade, there tends to be a negative ordinal relationship between socioeconomic level and annual prevalence of use of various drugs, although the relationships are not always entirely ordinal.

- Many of these differences have disappeared by tenth grade or twelfth grade. This is true for **marijuana**, **inhalants**, **hallucinogens**, **LSD**, and **tranquilizers** but *not* for **cocaine**, **crack**, or **heroin**. For these latter drugs the lower strata (or lowest stratum in some cases) generally continue to have the highest proportion of users, even at the upper grade levels.

The diminished socioeconomic differences by twelfth grade could be explained by the higher status teenagers “catching up” with their more precocious peers from lower status backgrounds. But the diminished differences may also be explained by the fact that dropping out of school is correlated both with socioeconomic status (negatively) and with drug use (positively). Thus, the lower strata may have lost more of their drug users to dropping out by the time they reach the upper grades.

- **Cigarette smoking** tends to bear a strong inverse relationship with parental education among eighth graders (see Table 4-7), but this relationship attenuates considerably by grade 12. (The attenuation is much less for heavier smoking.)

### Racial/Ethnic Differences

Racial/ethnic comparisons for African Americans, Hispanics, and Whites were added to this monograph series for the first time in 1991.<sup>40</sup> Although the design of this project did not include an oversampling of any minority groups, the large overall sample sizes at each grade level do produce fair numbers of African American and Hispanic respondents each year. However, in the findings presented in this volume, we routinely present combined data from two adjacent years to increase the sample sizes on which they are based and, thus, the reliability of the estimates. Otherwise, misleading findings about the size of racial/ethnic differences may emerge, as well as, perhaps more importantly, misleading findings about their trends. We caution the reader that the sampling error of differences between groups is likely to be larger than would be true for other demographic and background variables such as gender or college plans because African Americans and Hispanics are more likely to be clustered by school. Table 4-9 gives the combined 2001-2002 lifetime, annual, 30-day, and selected daily use statistics for the three racial/ethnic groups at all three grade levels, along with the numbers of cases upon which the estimates are based. These percentages all are based on the 2001 and 2002 surveys combined.

- Several general points can be derived from Table 4-9. First, for virtually *all drugs*, licit and illicit, African American students in twelfth grade reported lifetime, annual, 30-day, and daily prevalence of use rates that are lower—sometimes dramatically lower—than those for White or Hispanic seniors.
- Second, the same can be said for African American students in eighth and tenth grades; therefore, the low usage rates in twelfth grade almost certainly are not due to differential dropout rates. (There are two exceptions: for eighth-grade lifetime marijuana use, White students have lower rates of use than African American students and for tenth-grade lifetime marijuana use, the usage rate is about the same for White and African American students.)
- The third general point is that by twelfth grade, White students have the highest lifetime and annual prevalence of use rates for many substances, including *marijuana, inhalants, LSD, hallucinogens other than LSD, MDMA, heroin, heroin without a needle, other narcotics, amphetamines, sedatives (barbiturates), methaqualone, tranquilizers, been drunk, binge drinking* (in last 2 weeks), *cigarettes, smokeless tobacco, and steroids*. Not all of these findings are replicated at lower grade levels, however.
- Hispanics, taken as a group, now have the highest lifetime and annual prevalence of use rates in their senior year for *crack, other cocaine* (lifetime only), and *ice*. Their rate of *cocaine* use has tended to be particularly high compared to the other two racial/ethnic groups, particularly in the lower grades. It should be remembered that Hispanics have a

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<sup>40</sup>We recognize that the Hispanic category is a broad one, encompassing people with various Latin American, Caribbean, and European origins, but for the purposes of this monograph the sample sizes unfortunately are too small to differentiate among them. For a more complete treatment of racial/ethnic differences, in which additional subgroups are distinguished and males and females are examined separately within each racial/ethnic category, see Bachman, J. G., Wallace, J. M., Jr., O'Malley, P. M., Johnston, L. D., Kurth, C. L., & Neighbors, H. W. (1991). Racial/ethnic differences in smoking, drinking, and illicit drug use among American high school seniors, 1976-1989. *American Journal of Public Health, 81*, 372-377; Wallace, J. M., Jr., Bachman J. G., O'Malley, P. M., Johnston, L. D., Schulenberg, J. E., & Cooper, S. M. (2002). Tobacco, alcohol, and illicit drug use: Racial and ethnic differences among U.S. high school seniors, 1976-2000. *Public Health Reports, 117* (Supplement 1), S67-S75.



considerably higher dropout rate than Whites or African Americans, based on Census Bureau statistics, and this would tend to diminish any such differences by senior year.

- An examination of the racial/ethnic comparisons at lower grade levels shows Hispanics having higher rates of use of nearly all the substances on which they have the highest prevalence of use in twelfth grade, as well as of several other drugs. For example, in eighth grade 8.7% of Hispanic students reported ever having used *ecstasy (MDMA)*, compared to 4.0% of White students and 2.4% of African American students. For *tranquilizers*, the lifetime prevalence of use in eighth grade for Hispanics, Whites, and African Americans is 7.4%, 4.6%, and 2.1%, respectively, and for *cigarettes*, 39%, 33%, and 34%, respectively. In other words, in eighth grade—before most dropping out occurs—Hispanics have the highest rates of use of all the substances except *amphetamines*, *smokeless tobacco*, and *steroids*; whereas, by twelfth grade, Whites have the highest rates of use of most drugs. Certainly the considerably higher dropout rate among Hispanics could explain this shift, and it may be the most plausible explanation. Another explanation worth considering is that Hispanics may tend to start using drugs at a younger age but that Whites overtake them at older ages. These explanations are not mutually exclusive, of course, and to some degree both explanations may hold true. A more extensive discussion of possible explanations (including the possibility of differential validity of reporting) for the racial/ethnic differences in reported substance use can be found in Wallace et al. (1995).<sup>41</sup>
- Table 4-9 shows exceptionally large absolute and proportional differences between the three groups in their rates of *daily cigarette smoking*. Among twelfth graders, Whites have a 21.8% daily smoking rate, Hispanics 9.2% (which may be low, in part, because of their higher dropout rate), and African Americans only 6.4%. In fact, African Americans have dramatically lower smoking rates than Whites or Hispanics at all grade levels.
- African American students have the lowest lifetime, annual, and 30-day prevalence rates for *alcohol* use. They also have the lowest rates for self-reports of having been *drunk*.
- Recent *binge drinking* (having 5 or more drinks in a row during the prior two weeks) is also lowest among African Americans at all grade levels—in twelfth grade, 12% versus 34% for Whites and 26% for Hispanics. In eighth grade, Hispanics have the highest rate at 18%, compared to 13% for Whites and 9% for African Americans.

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<sup>41</sup>Wallace, J. M., Jr., Bachman, J. G., O'Malley, P. M., & Johnston, L. D. (1995). Racial/ethnic differences in adolescent drug use: Exploring possible explanations. In G. Botvin, S. Schinke, & M. Orlandi (Eds.), *Drug abuse prevention with multi-ethnic youth* (pp. 59-80). Thousand Oaks, CA: Sage.

**TABLE 4-1a**

**Ninety-Five Percent Confidence Limits: Lifetime Prevalence of Use for Eighth, Tenth, and Twelfth Graders, 2002**

(Approx. Ns: 8th grade = 15,100, 10th grade = 14,300, 12th grade = 12,900)

	8th Grade			10th Grade			12th Grade		
	Lower limit	Observed estimate	Upper limit	Lower limit	Observed estimate	Upper limit	Lower limit	Observed estimate	Upper limit
Any Illicit Drug <sup>a</sup>	22.9	24.5	26.2	42.3	44.6	46.8	50.2	53.0	55.8
Any Illicit Drug Other Than Marijuana <sup>a</sup>	12.5	13.7	15.1	20.5	22.1	23.8	27.4	29.5	31.6
Any Illicit Drug Including Inhalants <sup>a,b</sup>	29.9	31.6	33.4	45.5	47.7	50.0	50.6	54.6	58.6
Marijuana/Hashish	17.7	19.2	20.8	36.6	38.7	40.9	45.0	47.8	50.6
Inhalants <sup>b</sup>	14.0	15.2	16.5	12.4	13.5	14.8	10.0	11.7	13.5
<i>Inhalants, Adjusted<sup>b,c</sup></i>	—	—	—	—	—	—	10.7	12.4	14.2
Amyl/Butyl Nitrites <sup>d</sup>	—	—	—	—	—	—	1.0	1.5	2.5
Hallucinogens	3.4	4.1	5.0	6.8	7.8	9.0	10.7	12.0	13.5
<i>Hallucinogens, Adjusted<sup>e</sup></i>	—	—	—	—	—	—	11.4	12.8	14.3
LSD	1.9	2.5	3.2	4.1	5.0	5.9	7.3	8.4	9.7
Hallucinogens Other Than LSD	2.8	3.3	3.8	5.6	6.3	7.0	8.4	9.2	10.1
PCP <sup>d</sup>	—	—	—	—	—	—	2.2	3.1	4.3
MDMA (Ecstasy) <sup>e,f</sup>	3.6	4.3	5.1	5.7	6.6	7.6	9.0	10.5	12.2
Cocaine	2.9	3.6	4.4	5.2	6.1	7.2	6.7	7.8	9.0
Crack	2.2	2.5	2.9	3.2	3.6	4.1	3.4	3.8	4.3
Other Cocaine <sup>g</sup>	2.2	2.8	3.5	4.4	5.2	6.2	5.8	7.0	8.4
Heroin	1.3	1.6	1.9	1.5	1.8	2.1	1.4	1.7	2.0
With a Needle <sup>b</sup>	0.8	1.0	1.3	0.8	1.0	1.2	0.5	0.8	1.1
Without a Needle <sup>b</sup>	0.8	1.0	1.3	1.1	1.3	1.6	1.2	1.6	2.1
Other Narcotics <sup>b,h</sup>	—	—	—	—	—	—	8.9	10.1	11.4
Amphetamines <sup>h</sup>	7.8	8.7	9.8	13.7	14.9	16.3	15.4	16.8	18.2
Methamphetamine <sup>fi</sup>	2.8	3.5	4.3	5.2	6.1	7.1	5.7	6.7	7.9
Crystal Meth. (Ice) <sup>f</sup>	—	—	—	—	—	—	3.9	4.7	5.7
Sedatives (Barbiturates) <sup>h</sup>	—	—	—	—	—	—	8.7	9.5	10.4
Sedatives, Adjusted <sup>hj</sup>	—	—	—	—	—	—	9.3	10.2	11.1
Methaqualone <sup>d,h</sup>	—	—	—	—	—	—	1.0	1.5	2.5
Tranquilizers <sup>h</sup>	3.8	4.3	4.9	8.1	8.8	9.7	10.5	11.4	12.4
Rohypnol <sup>k</sup>	0.5	0.8	1.5	0.8	1.3	2.1	—	—	—
Alcohol	45.2	47.0	48.8	65.1	66.9	68.7	76.7	78.4	80.0
Been Drunk <sup>f</sup>	19.8	21.3	22.8	42.1	44.0	45.9	58.2	61.6	64.8
Cigarettes	29.7	31.4	33.2	45.5	47.4	49.3	55.2	57.2	59.1
Smokeless Tobacco <sup>d,e</sup>	9.7	11.2	13.0	15.0	16.9	19.1	14.8	18.3	22.4
Steroids <sup>f</sup>	2.2	2.5	2.9	3.1	3.5	3.9	3.2	4.0	4.9

NOTE: '—' indicates data not available.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>For 12th graders only: Use of "any illicit drugs" includes any use of marijuana, LSD, other hallucinogens, crack, other cocaine, or heroin, or any use of other narcotics, amphetamines, barbiturates, or tranquilizers not under a doctor's orders. For 8th and 10th graders only: The use of other narcotics and barbiturates has been excluded, because these younger respondents appear to overreport use (perhaps because they include the use of non-prescription drugs in their answers).

<sup>b</sup>For 12th graders only: Data based on three of six forms; N is one-half of N indicated.

<sup>c</sup>For 12th graders only: Adjusted for underreporting of certain drugs. See text for details.

<sup>d</sup>For 12th graders only: Data based on one of six forms; N is one-sixth of N indicated.

<sup>e</sup>For 8th and 10th graders only: Data based on two of four forms; N is one-half of N indicated.

<sup>f</sup>For 12th graders only: Data based on two of six forms; N is two-sixths of N indicated.

<sup>g</sup>For 12th graders only: Data based on four of six forms; N is four-sixths of N indicated.

<sup>h</sup>Only drug use not under a doctor's orders is included here.

<sup>i</sup>For 8th and 10th graders only: Data based on one of four forms; N is one-third of N indicated.

<sup>j</sup>For 12th graders only: "Sedatives, adjusted" data are a combination of barbiturate and methaqualone data. Data based on six forms of barbiturate data adjusted by one form of methaqualone data.

<sup>k</sup>For 8th and 10th graders only: Data based on one of four forms; N is one-sixth of N indicated.

**TABLE 4-1b**

**Ninety-Five Percent Confidence Limits: Annual Prevalence of Use for Eighth, Tenth, and Twelfth Graders, 2002**

(Approx. Ns: 8th grade = 15,100, 10th grade = 14,300, 12th grade = 12,900)

	8th Grade			10th Grade			12th Grade		
	Lower limit	Observed estimate	Upper limit	Lower limit	Observed estimate	Upper limit	Lower limit	Observed estimate	Upper limit
Any Illicit Drug <sup>a</sup>	16.5	17.7	19.1	32.9	34.8	36.8	38.3	41.0	43.7
Any Illicit Drug Other Than Marijuana <sup>a</sup>	7.9	8.8	9.8	14.5	15.7	17.1	19.2	20.9	22.8
Any Illicit Drug Including Inhalants <sup>a,b</sup>	20.0	21.4	22.8	34.2	36.1	38.1	38.3	42.1	46.0
Marijuana/Hashish	13.4	14.6	15.9	28.5	30.3	32.2	33.6	36.2	38.9
Inhalants <sup>b</sup>	6.9	7.7	8.6	5.0	5.8	6.6	3.6	4.5	5.7
<i>Inhalants, Adjusted</i> <sup>b,c</sup>	—	—	—	—	—	—	4.0	4.9	6.1
Amyl/Butyl Nitrites <sup>d</sup>	—	—	—	—	—	—	0.7	1.1	1.8
Hallucinogens	2.1	2.6	3.2	4.0	4.7	5.6	5.7	6.6	7.6
<i>Hallucinogens, Adjusted</i> <sup>c</sup>	—	—	—	—	—	—	6.3	7.2	8.3
LSD	1.1	1.5	2.0	2.0	2.6	3.2	2.8	3.5	4.2
Hallucinogens Other Than LSD	1.7	2.1	2.5	3.5	4.0	4.6	4.9	5.4	6.1
PCP <sup>d</sup>	—	—	—	—	—	—	0.7	1.1	1.8
MDMA (Ecstasy) <sup>e,f</sup>	2.3	2.9	3.6	4.1	4.9	5.7	6.2	7.4	8.8
Cocaine	1.8	2.3	2.9	3.4	4.0	4.8	4.2	5.0	5.9
Crack	1.4	1.6	1.9	2.0	2.3	2.6	2.0	2.3	2.6
Other Cocaine <sup>g</sup>	1.4	1.8	2.3	2.8	3.4	4.1	3.5	4.4	5.4
Heroin	0.8	0.9	1.1	0.9	1.1	1.3	0.8	1.0	1.2
With a Needle <sup>b</sup>	0.5	0.6	0.8	0.4	0.6	0.7	0.2	0.4	0.6
Without a Needle <sup>b</sup>	0.5	0.6	0.8	0.6	0.8	1.0	0.6	0.8	1.1
Other Narcotics <sup>b,h</sup>	—	—	—	—	—	—	6.0	7.0	8.0
Oxycontin <sup>fi</sup>	1.0	1.3	1.9	2.5	3.0	3.7	3.1	4.0	5.0
Vicodin <sup>fi</sup>	1.8	2.5	3.6	5.8	6.9	8.1	8.0	9.6	11.5
Amphetamines <sup>h</sup>	4.8	5.5	6.3	9.7	10.7	11.7	10.1	11.1	12.3
Methamphetamine <sup>fi</sup>	1.7	2.2	2.7	3.3	3.9	4.6	3.0	3.6	4.4
Crystal Meth. (Ice) <sup>f</sup>	—	—	—	—	—	—	2.5	3.0	3.7
Ritalin <sup>fi</sup>	2.1	2.8	3.6	3.9	4.8	5.9	3.2	4.0	5.0
Sedatives (Barbiturates) <sup>h</sup>	—	—	—	—	—	—	6.0	6.7	7.4
Sedatives, Adjusted <sup>hj</sup>	—	—	—	—	—	—	6.3	7.0	7.7
Methaqualone <sup>d,h</sup>	—	—	—	—	—	—	0.6	0.9	1.6
Tranquilizers <sup>h</sup>	2.2	2.6	3.0	5.7	6.3	7.0	7.0	7.7	8.5
Rohypnol <sup>ik</sup>	0.1	0.3	0.7	0.4	0.7	1.3	1.2	1.6	2.2
GHB <sup>di</sup>	0.6	0.8	1.2	1.0	1.4	1.9	1.0	1.5	2.3
Ketamine <sup>b,i</sup>	1.0	1.3	1.7	1.7	2.2	2.7	2.2	2.6	3.1
Alcohol	37.0	38.7	40.5	58.2	60.0	61.8	69.7	71.5	73.3
Been Drunk <sup>f</sup>	13.7	15.0	16.3	33.6	35.4	37.2	47.0	50.4	53.8
Cigarettes	—	—	—	—	—	—	—	—	—
Bidis <sup>fi</sup>	2.0	2.7	3.5	2.4	3.1	4.0	4.8	5.9	7.1
Kreteks <sup>fi</sup>	2.0	2.6	3.4	4.0	4.9	6.0	7.2	8.4	9.9
Smokeless Tobacco <sup>d,e</sup>	—	—	—	—	—	—	—	—	—
Steroids <sup>f</sup>	1.3	1.5	1.8	1.9	2.2	2.5	2.0	2.5	3.1
Androstenedione <sup>fi</sup>	0.9	1.2	1.8	1.5	1.9	2.4	2.0	2.5	3.1
Creatine <sup>fi</sup>	1.8	2.3	3.0	6.5	7.6	8.8	7.6	8.5	9.5

NOTE: '—' indicates data not available.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>For 12th graders only: Use of "any illicit drugs" includes any use of marijuana, LSD, other hallucinogens, crack, other cocaine, or heroin, or any use of other narcotics, amphetamines, barbiturates, or tranquilizers not under a doctor's orders. For 8th and 10th graders only: The use of other narcotics and barbiturates has been excluded, because these younger respondents appear to overreport use (perhaps because they include the use of non-prescription drugs in their answers).

<sup>b</sup>For 12th graders only: Data based on three of six forms; N is one-half of N indicated.

<sup>c</sup>For 12th graders only: Adjusted for underreporting of certain drugs. See text for details.

<sup>d</sup>For 12th graders only: Data based on one of six forms; N is one-sixth of N indicated.

<sup>e</sup>For 8th and 10th graders only: Data based on two of four forms; N is one-half of N indicated.

<sup>f</sup>For 12th graders only: Data based on two of six forms; N is two-sixths of N indicated.

<sup>g</sup>For 12th graders only: Data based on four of six forms; N is four-sixths of N indicated.

<sup>h</sup>Only drug use not under a doctor's orders is included here.

<sup>i</sup>For 8th and 10th graders only: Data based on one of four forms; N is one-third of N indicated.

<sup>j</sup>For 12th graders only: "Sedatives, adjusted" data are a combination of barbiturate and methaqualone data. Data based on six forms of barbiturate data adjusted by one form of methaqualone data.

<sup>k</sup>For 8th and 10th graders only: Data based on one of four forms; N is one-sixth of N indicated.

**TABLE 4-1c**

**Ninety-Five Percent Confidence Limits: Thirty-Day Prevalence of Use for Eighth, Tenth, and Twelfth Graders, 2002**

(Approx. Ns: 8th grade = 15,100, 10th grade = 14,300, 12th grade = 12,900)

	8th Grade			10th Grade			12th Grade		
	Lower limit	Observed estimate	Upper limit	Lower limit	Observed estimate	Upper limit	Lower limit	Observed estimate	Upper limit
Any Illicit Drug <sup>a</sup>	9.4	10.4	11.5	19.4	20.8	22.3	23.3	25.4	27.6
Any Illicit Drug Other Than Marijuana <sup>a</sup>	4.1	4.7	5.4	7.3	8.1	8.9	10.2	11.3	12.5
Any Illicit Drug Including Inhalants <sup>a,b</sup>	11.6	12.6	13.8	20.3	21.7	23.2	23.0	25.9	29.1
Marijuana/Hashish	7.4	8.3	9.3	16.5	17.8	19.2	19.6	21.5	23.6
Inhalants <sup>b</sup>	3.3	3.8	4.3	2.0	2.4	2.8	1.1	1.5	2.0
<i>Inhalants, Adjusted<sup>b,c</sup></i>	—	—	—	—	—	—	1.3	1.8	2.3
Amyl/Butyl Nitrites <sup>d</sup>	—	—	—	—	—	—	0.3	0.6	1.2
Hallucinogens	0.9	1.2	1.6	1.3	1.6	2.1	1.8	2.3	2.8
<i>Hallucinogens, Adjusted<sup>c</sup></i>	—	—	—	—	—	—	2.2	2.7	3.2
LSD	0.5	0.7	0.9	0.5	0.7	1.0	0.5	0.7	1.0
Hallucinogens Other Than LSD	0.8	1.0	1.2	1.2	1.4	1.7	1.7	2.0	2.4
PCP <sup>d</sup>	—	—	—	—	—	—	0.2	0.4	0.9
MDMA (Ecstasy) <sup>e,f</sup>	1.1	1.4	1.8	1.4	1.8	2.2	1.9	2.4	3.1
Cocaine	0.8	1.1	1.4	1.3	1.6	2.1	1.9	2.3	2.8
Crack	0.6	0.8	1.0	0.8	1.0	1.2	1.0	1.2	1.4
Other Cocaine <sup>g</sup>	0.6	0.8	1.1	1.0	1.3	1.7	1.5	1.9	2.5
Heroin	0.4	0.5	0.6	0.4	0.5	0.7	0.4	0.5	0.7
With a Needle <sup>b</sup>	0.2	0.3	0.4	0.2	0.3	0.5	0.2	0.3	0.5
Without a Needle <sup>b</sup>	0.2	0.3	0.4	0.2	0.4	0.5	0.3	0.5	0.7
Other Narcotics <sup>b,h</sup>	—	—	—	—	—	—	2.6	3.1	3.7
Amphetamines <sup>h</sup>	2.4	2.8	3.3	4.6	5.2	5.8	4.9	5.5	6.1
Methamphetamine <sup>fi</sup>	0.8	1.1	1.5	1.4	1.8	2.3	1.3	1.7	2.2
Crystal Meth. (Ice) <sup>f</sup>	—	—	—	—	—	—	0.8	1.2	1.6
Sedatives (Barbiturates) <sup>h</sup>	—	—	—	—	—	—	2.9	3.2	3.6
Sedatives, Adjusted <sup>h,j</sup>	—	—	—	—	—	—	3.0	3.4	3.8
Methaqualone <sup>di,h</sup>	—	—	—	—	—	—	0.1	0.3	0.8
Tranquilizers <sup>h</sup>	1.0	1.2	1.4	2.5	2.9	3.3	2.9	3.3	3.7
Rohypnol <sup>k</sup>	0.1	0.2	0.5	0.2	0.4	0.8	—	—	—
Alcohol	18.2	19.6	21.1	33.6	35.4	37.2	46.6	48.6	50.5
Been Drunk <sup>f</sup>	5.8	6.7	7.6	16.9	18.3	19.8	27.3	30.3	33.5
Cigarettes	9.6	10.7	11.9	16.3	17.7	19.2	24.9	26.7	28.5
Smokeless Tobacco <sup>d,e</sup>	2.5	3.3	4.3	4.9	6.1	7.5	4.4	6.5	9.3
Steroids <sup>f</sup>	0.6	0.8	1.0	0.8	1.0	1.2	1.0	1.4	1.9

NOTE: '—' indicates data not available.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>For 12th graders only: Use of "any illicit drugs" includes any use of marijuana, LSD, other hallucinogens, crack, other cocaine, or heroin, or any use of other narcotics, amphetamines, barbiturates, or tranquilizers not under a doctor's orders. For 8th and 10th graders only: The use of other narcotics and barbiturates has been excluded, because these younger respondents appear to overreport use (perhaps because they include the use of non-prescription drugs in their answers).

<sup>b</sup>For 12th graders only: Data based on three of six forms; N is one-half of N indicated.

<sup>c</sup>For 12th graders only: Adjusted for underreporting of certain drugs. See text for details.

<sup>d</sup>For 12th graders only: Data based on one of six forms; N is one-sixth of N indicated.

<sup>e</sup>For 8th and 10th graders only: Data based on two of four forms; N is one-half of N indicated.

<sup>f</sup>For 12th graders only: Data based on two of six forms; N is two-sixths of N indicated.

<sup>g</sup>For 12th graders only: Data based on four of six forms; N is four-sixths of N indicated.

<sup>h</sup>Only drug use not under a doctor's orders is included here.

<sup>i</sup>For 8th and 10th graders only: Data based on one of four forms; N is one-third of N indicated.

<sup>j</sup>For 12th graders only: "Sedatives, adjusted" data are a combination of barbiturate and methaqualone data. Data based on six forms of barbiturate data adjusted by one form of methaqualone data.

<sup>k</sup>For 8th and 10th graders only: Data based on one of four forms; N is one-sixth of N indicated.

**TABLE 4-1d**  
**Ninety-Five Percent Confidence Limits: Daily Prevalence of Use  
for Eighth, Tenth, and Twelfth Graders, 2002**

*(Approx. Ns: 8th grade = 15,100, 10th grade = 14,300, 12th grade = 12,900)*

	<u>8th Grade</u>			<u>10th Grade</u>			<u>12th Grade</u>		
	<u>Lower limit</u>	<u>Observed estimate</u>	<u>Upper limit</u>	<u>Lower limit</u>	<u>Observed estimate</u>	<u>Upper limit</u>	<u>Lower limit</u>	<u>Observed estimate</u>	<u>Upper limit</u>
Marijuana/Hashish <sup>a</sup>	1.0	1.2	1.5	3.5	3.9	4.3	5.2	6.0	6.8
Alcohol									
Daily <sup>a</sup>	0.5	0.7	0.8	1.5	1.8	2.0	3.1	3.5	3.9
Been Drunk <sup>b</sup>	0.2	0.3	0.4	0.4	0.5	0.6	0.9	1.2	1.7
5+ Drinks in a Row in Last 2 Weeks	11.2	12.4	13.6	20.9	22.4	24.0	26.9	28.6	30.4
Cigarettes									
Daily	4.4	5.1	6.0	9.0	10.1	11.3	15.5	16.9	18.5
1/2 Pack+/Day	1.7	2.1	2.6	3.8	4.4	5.1	8.2	9.1	10.2
Smokeless Tobacco <sup>c</sup>	0.5	0.8	1.4	1.1	1.7	2.5	1.0	2.0	3.8

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Daily use of marijuana and alcohol is defined as use on twenty or more occasions in the past thirty days.

<sup>b</sup>For 12th graders only: Data based on two of six forms; N is two-sixths of N indicated.

<sup>c</sup>For 8th and 10th graders only: Data based on two of four forms; N is one-half of N indicated. For 12th graders only: Data based on one of six forms; N is one-sixth of N indicated.

**TABLE 4-2**  
**Prevalence of Use of Various Drugs**  
**for Eighth, Tenth, and Twelfth Graders, 2002**

	<u>Lifetime</u>			<u>Annual</u>			<u>30-Day</u>			<u>Daily</u>		
	Grade: 8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
	Approx. N = 15,100 14,300 12,900 15,100 14,300 12,900 15,100 14,300 12,900 15,100 14,300 12,900											
Any Illicit Drug <sup>a</sup>	24.5	44.6	53.0	17.7	34.8	41.0	10.4	20.8	25.4	—	—	—
Any Illicit Drug Other Than Marijuana <sup>a</sup>	13.7	22.1	29.5	8.8	15.7	20.9	4.7	8.1	11.3	—	—	—
Any Illicit Drug Including Inhalants <sup>a,b</sup>	31.6	47.7	54.6	21.4	36.1	42.1	12.6	21.7	25.9	—	—	—
Marijuana/Hashish	19.2	38.7	47.8	14.6	30.3	36.2	8.3	17.8	21.5	1.2	3.9	6.0
Inhalants <sup>b</sup>	15.2	13.5	11.7	7.7	5.8	4.5	3.8	2.4	1.5	—	—	0.2
<i>Inhalants, Adjusted<sup>b,c</sup></i>	—	—	12.4	—	—	4.9	—	—	1.8	—	—	0.3
Amyl/Butyl Nitrites <sup>d</sup>	—	—	1.5	—	—	1.1	—	—	0.6	—	—	0.3
Hallucinogens	4.1	7.8	12.0	2.6	4.7	6.6	1.2	1.6	2.3	—	—	0.1
<i>Hallucinogens, Adjusted<sup>e</sup></i>	—	—	12.8	—	—	7.2	—	—	2.7	—	—	0.4
LSD	2.5	5.0	8.4	1.5	2.6	3.5	0.7	0.7	0.7	—	—	0.1
Hallucinogens Other Than LSD	3.3	6.3	9.2	2.1	4.0	5.4	1.0	1.4	2.0	—	—	*
PCP <sup>d</sup>	—	—	3.1	—	—	1.1	—	—	0.4	—	—	0.2
MDMA (Ecstasy) <sup>e,f</sup>	4.3	6.6	10.5	2.9	4.9	7.4	1.4	1.8	2.4	—	—	*
Cocaine	3.6	6.1	7.8	2.3	4.0	5.0	1.1	1.6	2.3	—	—	0.1
Crack	2.5	3.6	3.8	1.6	2.3	2.3	0.8	1.0	1.2	—	—	0.1
Other Cocaine <sup>g</sup>	2.8	5.2	7.0	1.8	3.4	4.4	0.8	1.3	1.9	—	—	0.1
Heroin	1.6	1.8	1.7	0.9	1.1	1.0	0.5	0.5	0.5	—	—	0.1
Any Use With a Needle <sup>b</sup>	1.0	1.0	0.8	0.6	0.6	0.4	0.3	0.3	0.3	—	—	0.1
Without a Needle <sup>b</sup>	1.0	1.3	1.6	0.6	0.8	0.8	0.3	0.4	0.5	—	—	0.1
Other Narcotics <sup>b,h</sup>	—	—	10.1	—	—	7.0	—	—	3.1	—	—	0.1
Oxycontin <sup>fi</sup>	—	—	—	1.3	3.0	4.0	—	—	—	—	—	—
Vicodin <sup>fi</sup>	—	—	—	2.5	6.9	9.6	—	—	—	—	—	—
Amphetamines <sup>h</sup>	8.7	14.9	16.8	5.5	10.7	11.1	2.8	5.2	5.5	—	—	0.7
Ritalin <sup>fi</sup>	—	—	—	2.8	4.8	4.0	—	—	—	—	—	—
Methamphetamine <sup>fi</sup>	3.5	6.1	6.7	2.2	3.9	3.6	1.1	1.8	1.7	—	—	0.3
Crystal Meth. (Ice) <sup>f</sup>	—	—	4.7	—	—	3.0	—	—	1.2	—	—	0.2
Sedatives (Barbiturates) <sup>h</sup>	—	—	9.5	—	—	6.7	—	—	3.2	—	—	0.2
Sedatives, Adjusted <sup>h,j</sup>	—	—	10.2	—	—	7.0	—	—	3.4	—	—	0.2
Methaqualone <sup>dh</sup>	—	—	1.5	—	—	0.9	—	—	0.3	—	—	0.0
Tranquilizers <sup>h</sup>	4.3	8.8	11.4	2.6	6.3	7.7	1.2	2.9	3.3	—	—	0.2
Rohypnol <sup>fk</sup>	0.8	1.3	—	0.3	0.7	1.6	0.2	0.4	—	—	—	—
GHB <sup>di</sup>	—	—	—	0.8	1.4	1.5	—	—	—	—	—	—
Ketamine <sup>b,i</sup>	—	—	—	1.3	2.2	2.6	—	—	—	—	—	—
Alcohol	47.0	66.9	78.4	38.7	60.0	71.5	19.6	35.4	48.6	0.7	1.8	3.5
Any Use Been Drunk <sup>f</sup>	21.3	44.0	61.6	15.0	35.4	50.4	6.7	18.3	30.3	0.3	0.5	1.2
5+ Drinks in a Row in Last 2 Weeks	—	—	—	—	—	—	—	—	—	12.4	22.4	28.6
Cigarettes	31.4	47.4	57.2	—	—	—	10.7	17.7	26.7	5.1	10.1	16.9
Any Use 1/2 Pack+/Day	—	—	—	—	—	—	—	—	—	2.1	4.4	9.1
Bidis <sup>fi</sup>	—	—	—	2.7	3.1	5.9	—	—	—	—	—	—
Kreteks <sup>fi</sup>	—	—	—	2.6	4.9	8.4	—	—	—	—	—	—
Smokeless Tobacco <sup>de</sup>	11.2	16.9	18.3	—	—	—	3.3	6.1	6.5	0.8	1.7	2.0
Steroids <sup>f</sup>	2.5	3.5	4.0	1.5	2.2	2.5	0.8	1.0	1.4	—	—	0.3

NOTES: '—' indicates data not available. '\*' indicates less than .05 percent but greater than 0 percent.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>For 12th graders only: Use of "any illicit drugs" includes any use of marijuana, LSD, other hallucinogens, crack, other cocaine, or heroin, or any use of other narcotics, amphetamines, barbiturates, or tranquilizers not under a doctor's orders. For 8th and 10th graders only: The use of other narcotics and barbiturates has been excluded, because these younger respondents appear to overreport use (perhaps because they include the use of nonprescription drugs in their answers).

<sup>b</sup>For 12th graders only: Data based on three of six forms; N is one-half of N indicated.

<sup>c</sup>For 12th graders only: Adjusted for underreporting of certain drugs. See text for details.

<sup>d</sup>For 12th graders only: Data based on one of six forms; N is one-sixth of N indicated.

<sup>e</sup>For 8th and 10th graders only: Data based on two of four forms; N is one-half of N indicated.

<sup>f</sup>For 12th graders only: Data based on two of six forms; N is two-sixths of N indicated.

<sup>g</sup>For 12th graders only: Data based on four of six forms; N is four-sixths of N indicated.

<sup>h</sup>Only drug use which was not under a doctor's orders is included here.

<sup>i</sup>For 8th and 10th graders only: Data based on one of four forms; N is one-third of N indicated.

<sup>j</sup>For 12th graders only: "Sedatives, adjusted" data are a combination of barbiturate and methaqualone data. Data based on six forms of barbiturate data adjusted by one form of methaqualone data.

<sup>k</sup>For 8th and 10th graders only: Data based on two of four forms; N is one-sixth of N indicated due to changes in the questionnaire forms.

**TABLE 4-3**  
**Prevalence of Use of Heroin *with* and *without* a Needle**  
**for Eighth, Tenth, and Twelfth Graders, 2002**

(Entries are percentages of all respondents)

	<u>Percent who used in:</u>		
	<u>Lifetime</u>	<u>Past year</u>	<u>Past month</u>
<b>Eighth Graders</b>			
Used heroin only <i>with</i> a needle	0.6	0.3	0.2
Used heroin only <i>without</i> a needle	0.6	0.3	0.2
Used heroin both ways	0.5	0.3	0.1
Used heroin at all	1.6	0.9	0.5
<i>Approx. weighted N =</i>	<i>15,100</i>	<i>15,100</i>	<i>15,100</i>
<b>Tenth Graders</b>			
Used heroin only <i>with</i> a needle	0.5	0.3	0.1
Used heroin only <i>without</i> a needle	0.9	0.5	0.2
Used heroin both ways	0.5	0.3	0.2
Used heroin at all	1.8	1.1	0.5
<i>Approx. weighted N =</i>	<i>14,300</i>	<i>14,300</i>	<i>14,300</i>
<b>Twelfth Graders</b>			
Used heroin only <i>with</i> a needle	0.3	0.2	0.1
Used heroin only <i>without</i> a needle	1.0	0.6	0.3
Used heroin both ways	0.4	0.2	0.1
Used heroin at all	1.7	1.0	0.5
<i>Approx. weighted N =</i>	<i>6,500</i>	<i>6,500</i>	<i>6,500</i>

NOTES: Any apparent inconsistency between the total who used heroin at all and the sum of those who used with a needle, without a needle, and both ways is due to rounding error.  
 Twelfth grade data based on three of six forms except for "used heroin at all," which is based on all six forms.

SOURCE: The Monitoring the Future Study, the University of Michigan.

**TABLE 4-4a**

**Frequency of Use of Various Drugs: Lifetime, Annual, and Thirty-Day Eighth, Tenth, and Twelfth Graders, 2002**

(Entries are percentages)

	Marijuana			Inhalants <sup>a,b</sup>			Amyl/Butyl <sup>c</sup> Nitrites			Hallucinogens <sup>a</sup>			LSD			Hallucinogens Other Than LSD			PCP <sup>c</sup>			MDMA <sup>d,e</sup>		
	Grade: 8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
<i>Approx. N = 15100 14300 12900 15100 14300 6500 — — 2200 15100 14300 12900 15100 14300 12900 15100 14300 12900 — — 2200 7600 7200 4300</i>																								
<b>Lifetime Frequency</b>																								
No occasions	80.8	61.3	52.2	84.8	86.5	88.4	—	—	98.5	95.9	92.2	88.0	97.5	95.1	91.6	96.7	93.7	90.8	—	—	96.9	95.7	93.4	89.5
1-2 occasions	7.0	10.2	9.8	9.3	8.1	6.1	—	—	0.6	2.0	3.3	4.5	1.5	2.9	4.2	1.9	3.6	5.0	—	—	1.8	2.7	3.6	4.6
3-5 occasions	3.3	5.5	6.5	2.6	2.5	2.3	—	—	0.1	1.0	2.4	3.6	0.4	0.8	1.6	0.5	1.1	1.7	—	—	0.6	0.6	1.1	2.1
6-9 occasions	1.7	4.0	4.9	1.1	1.2	1.2	—	—	0.3	0.3	0.6	0.9	0.2	0.6	1.0	0.3	0.6	1.0	—	—	0.2	0.3	0.8	1.2
10-19 occasions	1.8	4.3	6.3	0.9	0.9	0.9	—	—	*	0.5	0.8	1.5	0.2	0.3	0.8	0.3	0.6	0.6	—	—	0.1	0.2	0.5	1.0
20-39 occasions	1.7	3.9	4.5	0.5	0.3	0.4	—	—	0.1	0.1	0.4	0.6	0.1	0.2	0.5	0.1	0.2	0.5	—	—	*	0.2	0.4	0.6
40 or more	3.8	10.9	15.7	0.7	0.6	0.8	—	—	0.3	0.3	0.4	0.9	0.1	0.2	0.4	0.1	0.2	0.4	—	—	0.3	0.4	0.2	0.9
<b>Annual Frequency</b>																								
No occasions	85.4	69.7	63.8	92.3	94.2	95.5	—	—	98.9	97.4	95.3	93.4	98.5	97.4	96.6	97.9	96.0	94.6	—	—	98.9	97.1	95.1	92.6
1-2 occasions	5.7	9.1	10.0	4.8	3.5	2.6	—	—	0.6	1.3	2.2	3.2	0.9	1.7	2.3	1.3	2.5	3.4	—	—	0.4	1.9	2.9	3.8
3-5 occasions	2.7	4.7	5.8	1.3	1.1	0.6	—	—	0.1	0.7	1.5	2.0	0.3	0.4	0.6	0.3	0.7	1.1	—	—	0.3	0.4	0.8	1.5
6-9 occasions	1.7	3.8	4.3	0.7	0.5	0.5	—	—	*	0.3	0.4	0.5	0.2	0.2	0.3	0.2	0.5	0.4	—	—	0.0	0.2	0.6	0.8
10-19 occasions	1.6	3.6	4.1	0.5	0.4	0.4	—	—	0.1	0.2	0.5	0.5	0.1	0.2	0.2	0.1	0.3	0.3	—	—	0.1	0.2	0.4	0.7
20-39 occasions	1.3	3.3	2.9	0.2	0.2	0.2	—	—	*	0.1	0.1	0.2	*	*	0.1	0.1	0.1	0.2	—	—	0.1	0.1	0.2	0.3
40 or more	1.7	5.8	9.2	0.2	0.2	0.3	—	—	0.3	0.1	0.1	0.2	0.1	*	0.1	*	0.1	0.1	—	—	0.2	0.1	*	0.3
<b>30-Day Frequency</b>																								
No occasions	91.7	82.2	78.5	96.2	97.6	98.5	—	—	99.4	98.8	98.4	97.7	99.4	99.3	99.3	99.0	98.6	98.0	—	—	99.6	98.6	98.2	97.6
1-2 occasions	3.5	6.6	7.4	2.5	1.5	0.7	—	—	0.2	0.6	0.9	1.4	0.4	0.4	0.5	0.6	0.9	1.4	—	—	0.1	0.9	1.2	1.5
3-5 occasions	1.7	2.7	3.5	0.6	0.5	0.2	—	—	0.1	0.3	0.5	0.5	0.1	0.1	0.1	0.2	0.3	0.3	—	—	0.1	0.2	0.3	0.4
6-9 occasions	1.0	2.1	2.2	0.4	0.2	0.2	—	—	0.0	0.1	0.2	0.2	*	0.1	0.1	0.1	0.1	0.2	—	—	0.0	0.1	0.2	0.4
10-19 occasions	0.9	2.5	2.5	0.2	0.1	0.1	—	—	*	0.1	0.1	0.1	0.1	*	*	0.1	*	*	—	—	*	0.1	*	0.2
20-39 occasions	0.6	1.8	2.6	0.1	0.1	*	—	—	0.1	*	*	*	*	*	*	*	*	*	—	—	*	*	0.0	0.0
40 or more	0.6	2.1	3.4	0.1	0.1	0.2	—	—	0.2	*	*	0.1	*	*	*	*	*	*	—	—	0.2	0.1	*	*

NOTES: '—' indicates data not available.

\* indicates less than .05 percent but greater than 0 percent.

SOURCE: The Monitoring the Future Study, the University of Michigan.

(Table continued on next page)



**TABLE 4-4a (cont.)**

**Frequency of Use of Various Drugs: Lifetime, Annual, and Thirty-Day  
Eighth, Tenth, and Twelfth Graders, 2002**

(Entries are percentages)

	<u>Cocaine</u>			<u>Crack</u>			<u>Other Cocaine<sup>f</sup></u>			<u>Heroin</u>			<u>Heroin with a Needle<sup>b</sup></u>			<u>Heroin without a Needle<sup>b</sup></u>			<u>Other Narcotics<sup>b</sup></u>			<u>Oxycontin<sup>e,g</sup></u>		
	Grade: 8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
<i>Approx. N =</i>	15100	14300	12900	15100	14300	12900	15100	14300	8600	15100	14300	12900	15100	14300	6500	15100	14300	6500	—	—	6500	5000	4800	4300
<b>Lifetime Frequency</b>																								
No occasions	96.4	93.9	92.2	97.5	96.4	96.2	97.2	94.8	93.0	98.4	98.2	98.3	99.0	99.0	99.2	99.0	98.7	98.4	—	—	89.9	—	—	—
1-2 occasions	1.4	2.4	3.2	1.4	2.0	1.8	1.7	2.7	3.2	0.8	0.9	0.8	0.6	0.5	0.4	0.6	0.8	0.9	—	—	3.7	—	—	—
3-5 occasions	1.1	1.7	1.5	0.4	0.6	0.6	0.5	1.0	1.2	0.3	0.3	0.3	0.2	0.1	0.1	0.2	0.2	0.3	—	—	2.1	—	—	—
6-9 occasions	0.3	0.6	0.9	0.2	0.3	0.4	0.2	0.4	0.8	0.1	0.1	0.2	*	0.1	0.1	0.1	0.2	0.2	—	—	1.2	—	—	—
10-19 occasions	0.3	0.6	0.8	0.2	0.3	0.3	0.2	0.4	0.7	0.1	0.2	0.1	*	0.1	0.1	0.1	0.1	*	—	—	1.2	—	—	—
20-39 occasions	0.1	0.2	0.4	0.1	0.1	0.2	0.1	0.3	0.4	0.1	0.1	0.1	0.1	*	*	*	0.1	0.1	—	—	0.9	—	—	—
40 or more	0.4	0.7	1.1	0.2	0.3	0.5	0.2	0.5	0.7	0.2	0.2	0.2	0.1	0.2	0.2	0.1	0.1	0.1	—	—	1.1	—	—	—
<b>Annual Frequency</b>																								
No occasions	97.7	96.0	95.0	98.4	97.7	97.7	98.2	96.6	95.6	99.1	98.9	99.0	99.4	99.4	99.6	99.4	99.2	99.2	—	—	93.1	98.7	97.0	96.0
1-2 occasions	1.0	1.5	2.0	1.0	1.4	1.0	1.2	1.9	1.9	0.5	0.5	0.5	0.4	0.2	0.1	0.4	0.4	0.4	—	—	3.1	0.4	1.1	1.7
3-5 occasions	0.8	1.3	1.0	0.2	0.3	0.4	0.3	0.6	0.8	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	—	—	1.5	0.3	0.8	0.8
6-9 occasions	0.2	0.4	0.6	0.2	0.2	0.3	0.2	0.4	0.6	0.1	0.1	0.1	0.1	0.1	0.1	*	0.1	0.1	—	—	0.9	0.2	0.4	0.6
10-19 occasions	0.2	0.3	0.6	0.1	0.1	0.3	0.1	0.2	0.5	0.1	0.2	0.1	0.1	0.1	*	0.1	0.1	0.1	—	—	0.6	0.2	0.3	0.3
20-39 occasions	0.1	0.2	0.3	0.1	0.2	0.2	0.1	0.2	0.3	*	*	0.1	*	*	0.1	*	*	0.1	—	—	0.4	*	0.2	0.2
40 or more	0.1	0.3	0.4	*	0.1	0.2	*	0.2	0.3	0.1	0.1	0.1	0.1	0.1	0.1	*	0.1	0.1	—	—	0.5	0.2	0.3	0.3
<b>30-Day Frequency</b>																								
No occasions	98.9	98.4	97.7	99.2	99.0	98.8	99.2	98.7	98.1	99.5	99.5	99.5	99.7	99.7	99.7	99.7	99.7	99.5	—	—	96.9	—	—	—
1-2 occasions	0.4	0.6	1.1	0.5	0.6	0.6	0.5	0.7	1.0	0.2	0.2	0.3	0.2	0.1	0.1	0.1	0.2	0.3	—	—	1.8	—	—	—
3-5 occasions	0.4	0.5	0.6	0.1	0.2	0.2	0.2	0.2	0.4	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	—	—	0.6	—	—	—
6-9 occasions	0.1	0.2	0.3	0.1	0.1	0.1	0.1	0.2	0.3	0.1	*	0.1	*	0.1	0.1	*	0.1	0.1	—	—	0.4	—	—	—
10-19 occasions	0.1	0.1	0.2	*	0.1	0.2	*	0.1	0.2	*	0.1	0.1	*	*	*	*	*	*	—	—	0.3	—	—	—
20-39 occasions	*	0.1	0.1	*	*	*	*	*	0.1	0.0	*	*	0.0	*	*	0.0	*	*	—	—	*	—	—	—
40 or more	0.1	0.1	0.1	*	0.1	0.1	*	0.1	*	*	0.1	*	*	*	*	*	*	0.1	—	—	0.1	—	—	—

NOTES: '—' indicates data not available.

'\*' indicates less than .05 percent but greater than 0 percent.

SOURCE: The Monitoring the Future Study, the University of Michigan.

(Table continued on next page)

**TABLE 4-4a (cont.)**  
**Frequency of Use of Various Drugs: Lifetime, Annual, and Thirty-Day**  
**Eighth, Tenth, and Twelfth Graders, 2002**  
(Entries are percentages)

	Vicodin <sup>e,g</sup>			Amphetamines <sup>h,i</sup>			Meth-amphetamine <sup>e,g</sup>			Crystal Meth. (Ice) <sup>e</sup>			Ritalin <sup>e,g</sup>			Sedatives (Barbiturates) <sup>i</sup>			Methaqualone <sup>ci</sup>			Tranquilizers <sup>i</sup>				
	Grade:	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	
	Approx. N =	5000	4800	4300	15100	14300	12900	5000	4800	4300	—	—	4300	5000	4800	4300	—	—	12900	—	—	2200	15100	14300	12900	
Lifetime Frequency																										
No occasions	—	—	—	91.3	85.1	83.2	96.5	93.9	93.3	—	—	95.3	—	—	—	—	—	—	90.5	—	—	98.5	95.7	91.2	88.6	
1-2 occasions	—	—	—	4.9	6.5	6.1	1.9	2.8	3.1	—	—	1.8	—	—	—	—	—	—	3.3	—	—	1.0	2.6	4.2	4.9	
3-5 occasions	—	—	—	1.5	2.8	2.9	0.8	1.2	1.0	—	—	1.3	—	—	—	—	—	—	2.0	—	—	0.2	0.6	1.7	2.3	
6-9 occasions	—	—	—	0.8	1.8	2.3	0.3	0.7	0.7	—	—	0.3	—	—	—	—	—	—	1.3	—	—	0.1	0.4	1.0	1.0	
10-19 occasions	—	—	—	0.6	1.6	1.8	0.3	0.7	0.6	—	—	0.4	—	—	—	—	—	—	1.1	—	—	0.1	0.2	0.8	1.2	
20-39 occasions	—	—	—	0.4	1.0	1.4	*	0.4	0.5	—	—	0.2	—	—	—	—	—	—	0.7	—	—	*	0.2	0.5	0.8	
40 or more	—	—	—	0.6	1.3	2.3	0.2	0.4	0.8	—	—	0.7	—	—	—	—	—	—	1.1	—	—	0.2	0.2	0.6	1.1	
Annual Frequency																										
No occasions	97.5	93.1	90.4	94.5	89.3	88.9	97.8	96.1	96.4	—	—	97.0	97.2	95.2	96.0	—	—	93.3	—	—	99.1	97.4	93.7	92.3		
1-2 occasions	1.1	3.1	4.5	3.2	5.2	4.5	1.2	1.8	1.7	—	—	1.3	1.4	2.0	1.9	—	—	2.9	—	—	0.6	1.5	3.4	3.7		
3-5 occasions	0.6	1.3	1.7	0.8	2.1	2.2	0.6	0.9	0.6	—	—	0.8	0.5	1.1	0.8	—	—	1.4	—	—	0.2	0.5	1.1	1.5		
6-9 occasions	0.3	0.9	1.4	0.7	1.3	1.3	0.2	0.5	0.4	—	—	0.2	0.2	0.7	0.4	—	—	0.8	—	—	0.1	0.3	0.7	0.9		
10-19 occasions	0.3	0.6	0.9	0.4	1.0	1.2	0.2	0.3	0.3	—	—	0.3	0.1	0.3	0.2	—	—	0.8	—	—	*	0.1	0.5	0.8		
20-39 occasions	*	0.4	0.4	0.3	0.7	0.9	*	0.2	0.2	—	—	0.2	0.1	0.3	0.2	—	—	0.3	—	—	0.1	0.1	0.4	0.4		
40 or more	0.2	0.6	0.8	0.1	0.4	1.1	*	0.2	0.4	—	—	0.3	0.5	0.5	0.5	—	—	0.4	—	—	0.0	0.1	0.2	0.4		
30-Day Frequency																										
No occasions	—	—	—	97.2	94.8	94.6	98.9	98.2	98.3	—	—	98.8	—	—	—	—	—	96.8	—	—	99.7	98.8	97.1	96.7		
1-2 occasions	—	—	—	1.7	2.8	2.6	0.7	1.0	0.7	—	—	0.5	—	—	—	—	—	1.6	—	—	0.2	0.7	1.6	1.8		
3-5 occasions	—	—	—	0.5	1.0	0.9	0.2	0.3	0.4	—	—	0.2	—	—	—	—	—	0.7	—	—	0.1	0.2	0.6	0.7		
6-9 occasions	—	—	—	0.4	0.7	0.8	0.1	0.2	0.3	—	—	0.2	—	—	—	—	—	0.4	—	—	*	0.1	0.5	0.4		
10-19 occasions	—	—	—	0.2	0.4	0.5	*	0.1	*	—	—	*	—	—	—	—	—	0.3	—	—	0.0	0.1	0.2	0.3		
20-39 occasions	—	—	—	*	0.2	0.4	0.0	0.0	0.1	—	—	0.1	—	—	—	—	—	0.1	—	—	0.0	*	0.1	0.1		
40 or more	—	—	—	*	0.1	0.2	*	0.1	0.2	—	—	0.2	—	—	—	—	—	0.1	—	—	0.0	*	*	0.1		

NOTES: '—' indicates data not available.

\* indicates less than .05 percent but greater than 0 percent.

SOURCE: The Monitoring the Future Study, the University of Michigan.

(Table continued on next page)

**TABLE 4-4a (cont.)**  
**Frequency of Use of Various Drugs: Lifetime, Annual, and Thirty-Day**  
**Eighth, Tenth, and Twelfth Graders, 2002**  
(Entries are percentages)

	Rohypnol <sup>e,g</sup>			GHB <sup>c,g</sup>			Ketamine <sup>b,g</sup>			Alcohol			Been Drunk <sup>c</sup>			Bidis <sup>c,g</sup>			Kreteks <sup>c,g</sup>			Steroids <sup>e</sup>				
	Grade: 8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th		
<i>Approx. N =</i>	2500	2400	4300	5000	4800	2200	5000	4800	6500	15100	14300	12900	15100	14300	4300	5000	4800	4300	5000	4800	4300	15100	14300	4300		
Lifetime Frequency																										
No occasions	99.2	98.7	—	—	—	—	—	—	—	53.0	33.1	21.6	78.7	56.0	38.4	—	—	—	—	—	—	—	—	97.5	96.5	96.0
1-2 occasions	0.7	0.8	—	—	—	—	—	—	—	12.8	10.6	8.2	11.1	16.0	15.7	—	—	—	—	—	—	—	—	1.5	1.8	1.7
3-5 occasions	*	0.3	—	—	—	—	—	—	—	10.6	13.1	10.7	4.3	9.2	10.3	—	—	—	—	—	—	—	—	0.4	0.7	0.7
6-9 occasions	0.0	0.1	—	—	—	—	—	—	—	7.6	10.5	9.9	2.2	5.5	7.7	—	—	—	—	—	—	—	—	0.2	0.3	0.5
10-19 occasions	0.1	*	—	—	—	—	—	—	—	6.5	11.5	13.0	1.7	5.3	8.1	—	—	—	—	—	—	—	—	0.2	0.2	0.4
20-39 occasions	*	0.0	—	—	—	—	—	—	—	4.1	8.5	11.7	1.1	3.9	7.4	—	—	—	—	—	—	—	—	0.1	0.2	0.2
40 or more	0.0	*	—	—	—	—	—	—	—	5.6	12.7	24.9	0.9	4.1	12.4	—	—	—	—	—	—	—	—	0.2	0.3	0.5
Annual Frequency																										
No occasions	99.7	99.3	98.4	99.2	98.6	98.5	98.7	97.8	97.4	61.3	40.0	28.5	85.0	64.6	49.6	97.3	96.9	94.1	97.4	95.1	91.6	98.5	97.8	97.5		
1-2 occasions	0.1	0.4	0.7	0.3	0.5	0.7	0.7	1.0	1.3	17.3	19.3	16.6	9.3	16.4	16.7	1.4	1.7	2.6	1.4	2.4	4.1	0.9	1.2	1.0		
3-5 occasions	0.1	0.3	0.4	0.3	0.4	0.2	0.2	0.5	0.6	9.0	13.2	14.3	2.8	7.4	10.2	0.5	0.5	1.1	0.6	1.1	1.6	0.3	0.3	0.4		
6-9 occasions	0.1	*	0.2	0.1	0.2	0.4	0.1	0.3	0.3	5.4	9.8	10.3	1.4	4.5	7.2	0.2	0.4	1.0	0.2	0.4	1.1	0.1	0.3	0.5		
10-19 occasions	*	0.0	*	*	*	0.1	0.1	0.2	0.1	3.7	9.1	11.7	0.7	3.7	6.3	0.1	0.1	0.6	0.1	0.4	0.7	0.1	0.2	0.1		
20-39 occasions	0.0	0.0	0.1	*	0.1	0.0	0.1	0.1	0.1	2.0	4.4	8.1	0.4	2.0	4.3	0.1	0.1	0.2	0.1	0.3	0.4	*	0.1	0.2		
40 or more	0.0	*	0.2	0.1	0.2	0.2	0.2	0.2	0.3	1.3	4.3	10.5	0.4	1.5	5.7	0.3	0.3	0.4	0.2	0.4	0.5	0.2	0.1	0.3		
30-Day Frequency																										
No occasions	99.8	99.6	—	—	—	—	—	—	—	80.4	64.6	51.4	93.3	81.7	69.7	—	—	—	—	—	—	—	—	99.2	99.0	98.6
1-2 occasions	0.1	0.1	—	—	—	—	—	—	—	11.4	18.2	21.2	4.5	11.2	15.6	—	—	—	—	—	—	—	—	0.5	0.5	0.8
3-5 occasions	0.1	0.2	—	—	—	—	—	—	—	4.1	8.6	11.3	1.1	3.8	6.1	—	—	—	—	—	—	—	—	0.1	0.2	0.2
6-9 occasions	*	*	—	—	—	—	—	—	—	2.2	4.3	7.2	0.6	1.9	4.2	—	—	—	—	—	—	—	—	*	0.2	0.1
10-19 occasions	0.0	0.0	—	—	—	—	—	—	—	1.2	2.6	5.3	0.3	0.9	3.3	—	—	—	—	—	—	—	—	0.1	0.1	*
20-39 occasions	0.0	0.0	—	—	—	—	—	—	—	0.3	0.9	1.7	0.1	0.2	0.7	—	—	—	—	—	—	—	—	*	0.1	0.1
40 or more	0.0	*	—	—	—	—	—	—	—	0.4	0.9	1.8	0.2	0.3	0.6	—	—	—	—	—	—	—	—	0.1	*	0.2

NOTES: '—' indicates data not available. '\*' indicates less than .05 percent but greater than 0 percent.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Unadjusted for known underreporting of certain drugs. See text for details.

<sup>b</sup>12th grade only: Data based on three of six forms.

<sup>c</sup>12th grade only: Data based on one of six forms.

<sup>d</sup>8th and 10th grades only: Data based on two of four forms.

<sup>e</sup>12th grade only: Data based on two of six forms.

<sup>f</sup>12th grade only: Data based on four of six forms.

<sup>g</sup>8th and 10th grades only: Data based on one of four forms.

<sup>h</sup>Based on the data from the revised question, which attempts to exclude the inappropriate reporting of nonprescription stimulants.

<sup>i</sup>Only drug use not under a doctor's orders is included here.

**TABLE 4-4b**  
**Frequency of Occasions of Heavy Drinking, and**  
**Cigarette and Smokeless Tobacco Use**  
**Eighth, Tenth, and Twelfth Graders, 2002**

(Entries are percentages)

	<u>Percentage who used</u>		
	<u>8th Grade</u>	<u>10th Grade</u>	<u>12th Grade</u>
<i>Q. Think back over the LAST TWO WEEKS.</i>			
<i>How many times have you had five or more drinks in a row?</i>			
None	87.6	77.6	71.4
Once	5.3	8.1	10.1
Twice	3.2	6.1	6.9
3 to 5 times	2.4	5.1	7.8
6 to 9 times	0.8	1.6	2.2
10 or more times	0.8	1.5	1.5
<i>Approx. N =</i>	<i>15,100</i>	<i>14,300</i>	<i>12,900</i>
<i>Q. Have you ever smoked cigarettes?</i>			
Never	68.6	52.6	42.8
Once or twice	18.6	23.8	22.9
Occasionally but not regularly	6.1	10.1	13.8
Regularly in the past	3.3	5.8	6.7
Regularly now	3.3	7.7	13.8
<i>Approx. N =</i>	<i>15,100</i>	<i>14,300</i>	<i>12,900</i>
<i>Q. How frequently have you smoked cigarettes during the past 30 days?</i>			
Not at all (includes "never" category from question above)	89.3	82.3	73.3
Less than one cigarette per day	5.6	7.6	9.8
One to five cigarettes per day	3.0	5.7	7.8
About one-half pack per day	1.1	2.4	5.3
About one pack per day	0.5	1.2	2.8
About one and one-half packs per day	0.2	0.4	0.7
Two packs or more per day	0.4	0.3	0.3
<i>Approx. N =</i>	<i>15,100</i>	<i>14,300</i>	<i>12,900</i>
<i>Q. Have you ever taken or used smokeless tobacco (snuff, plug, dipping tobacco, chewing tobacco)?</i>			
Never	88.8	83.1	81.7
Once or twice	7.7	9.6	10.9
Occasionally but not regularly	1.8	3.8	3.5
Regularly in the past	0.8	1.6	1.6
Regularly now	1.0	2.0	2.2
<i>Approx. N =</i>	<i>7,600</i>	<i>7,200</i>	<i>2,200</i>
<i>Q. How frequently have you taken smokeless tobacco during the past 30 days?</i>			
Not at all (includes "never" category from question above)	96.7	93.9	93.5
Once or twice	1.6	2.9	2.8
Once or twice per week	0.6	1.0	0.7
Three to five times per week	0.4	0.6	1.0
About once a day	0.2	0.3	0.5
More than once a day	0.6	1.4	1.5
<i>Approx. N =</i>	<i>7,600</i>	<i>7,200</i>	<i>2,200</i>

SOURCE: The Monitoring the Future Study, the University of Michigan.

**TABLE 4-5**  
**Lifetime Prevalence of Use of Various Drugs by Subgroups**  
**Eighth, Tenth, and Twelfth Graders, 2002**

(Entries are percentages)

Grade:	<u>Approx. N<sup>a</sup></u>			<u>Any Illicit Drug</u>			<u>Any Illicit Drug Other Than Marijuana</u>			<u>Marijuana</u>			<u>Inhalants<sup>b,c</sup></u>			<u>Amyl/Butyl Nitrites<sup>d</sup></u>			<u>Hallucinogens<sup>b,c</sup></u>		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Total	15,100	14,300	12,900	24.6	44.6	53.0	13.7	22.1	29.5	19.2	38.7	47.8	15.2	13.5	11.7	—	—	1.6	4.1	7.8	12.0
Gender:																					
Male	7,000	6,900	5,800	26.0	46.0	54.9	12.5	20.9	30.1	22.2	41.7	50.7	14.8	13.2	13.3	—	—	2.0	4.6	8.7	14.3
Female	7,600	7,100	6,600	23.0	42.9	50.6	14.6	23.1	27.8	16.2	35.8	44.7	15.5	13.9	10.2	—	—	1.1	3.6	7.0	9.6
College Plans:																					
None or under 4 yrs.	1,300	2,000	2,400	45.0	62.5	61.2	27.3	35.6	38.1	39.8	57.5	55.5	23.7	21.0	14.6	—	—	3.4	11.6	16.4	18.2
Complete 4 yrs.	13,400	12,100	9,700	22.4	41.6	50.7	12.4	20.0	27.0	17.1	35.7	45.6	14.5	12.5	11.1	—	—	1.1	3.4	6.5	10.2
Region:																					
Northeast	2,800	2,600	2,500	19.7	42.8	56.5	10.1	18.4	28.7	15.2	38.2	52.4	14.5	12.7	12.2	—	—	3.2	3.2	6.3	13.8
North Central	4,000	3,700	3,300	22.7	42.4	53.5	13.5	20.8	29.3	17.9	36.6	48.2	15.1	13.9	12.8	—	—	1.4	4.3	8.0	12.2
South	5,400	5,100	4,300	28.0	44.6	50.5	15.9	23.6	30.3	22.1	38.0	44.6	16.2	13.3	11.3	—	—	1.7	4.4	7.5	11.7
West	2,900	2,900	2,800	25.4	48.8	53.4	13.6	24.6	29.2	19.5	43.2	48.3	14.1	14.3	10.4	—	—	0.3	4.5	9.7	10.8
Population Density:																					
Large MSA	4,500	4,300	4,000	22.5	42.2	52.7	11.9	19.6	28.0	17.3	37.0	48.1	13.4	12.3	11.4	—	—	1.6	3.1	7.7	11.6
Other MSA	6,900	6,800	5,900	25.1	46.8	55.0	14.0	23.6	30.6	19.7	40.9	50.5	16.1	13.0	11.0	—	—	1.5	4.1	8.1	13.3
Non-MSA	3,700	3,200	3,000	26.1	42.9	49.7	15.4	22.4	29.2	20.7	36.4	42.2	15.7	16.4	13.2	—	—	1.6	5.6	7.3	10.2
Parental Education: <sup>e</sup>																					
1.0-2.0 (Low)	1,100	1,300	980	37.5	53.7	47.8	21.8	29.4	25.8	31.2	45.9	42.8	19.7	15.2	11.7	—	—	2.5	7.7	9.7	8.9
2.5-3.0	3,200	3,300	2,800	31.3	49.9	54.9	16.3	25.1	30.2	25.5	44.8	49.4	16.8	14.5	11.6	—	—	1.1	5.2	8.5	12.3
3.5-4.0	3,500	3,700	3,800	25.4	44.9	55.2	14.3	23.0	30.4	19.8	38.1	50.1	16.8	14.1	11.3	—	—	1.6	4.2	8.1	13.0
4.5-5.0	3,800	3,500	3,100	20.1	40.5	52.3	11.8	19.1	29.3	14.9	35.2	47.1	14.3	12.9	12.6	—	—	1.0	3.2	6.9	11.8
5.5-6.0 (High)	2,100	1,700	1,500	16.2	35.9	49.8	9.7	16.7	26.9	11.8	31.4	45.4	12.3	11.9	12.2	—	—	1.5	2.7	7.1	10.3

NOTE: '—' indicates data not available.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Subgroup Ns may vary depending on the number of forms in which the use of each drug was asked about.

<sup>b</sup>12th grade only: Data based on three of six forms; N is one-half of N indicated.

<sup>c</sup>Unadjusted for known underreporting of certain drugs. See text for details.

<sup>d</sup>12th grade only: Data based on one of six forms; N is one-sixth of N indicated.

<sup>e</sup>Parental education is an average score of mother's education and father's education reported on the following scale: (1) Completed grade school or less, (2) Some high school, (3) Completed high school, (4) Some college, (5) Completed college, (6) Graduate or professional school after college. Missing data was allowed on one of the two variables.

(Table continued on next page)

**TABLE 4-5 (cont.)**  
**Lifetime Prevalence of Use of Various Drugs by Subgroups**  
**Eighth, Tenth, and Twelfth Graders, 2002**

(Entries are percentages)

	<u>LSD</u>			<u>Hallucinogens Other Than LSD</u>			<u>PCP<sup>a</sup></u>			<u>MDMA<sup>b,c</sup></u>			<u>Cocaine</u>			<u>Crack</u>			<u>Other Cocaine<sup>d</sup></u>			
	Grade:	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Total		2.5	5.0	8.4	3.3	6.3	9.2	—	—	3.1	4.3	6.6	10.5	3.6	6.1	7.8	2.5	3.6	3.8	2.8	5.2	7.0
Gender:																						
Male		2.7	5.4	9.9	3.8	7.3	11.6	—	—	4.2	4.7	6.1	11.7	3.5	6.1	8.8	2.6	3.7	4.5	2.7	5.1	7.5
Female		2.2	4.6	6.8	2.6	5.3	6.7	—	—	2.0	3.8	7.0	9.2	3.7	6.2	6.6	2.4	3.5	3.0	2.9	5.3	6.3
College Plans:																						
None or under 4 yrs.		7.8	11.3	13.7	9.6	13.6	14.0	—	—	7.1	12.4	13.7	13.7	10.5	14.0	12.9	7.7	8.9	7.6	9.0	12.2	10.2
Complete 4 yrs.		1.9	4.0	6.9	2.6	5.2	7.9	—	—	1.9	3.5	5.5	9.7	2.9	4.8	6.3	2.0	2.7	2.8	2.2	4.0	5.8
Region:																						
Northeast		1.7	3.7	9.9	2.7	5.3	11.2	—	—	3.1	3.5	6.7	13.1	2.7	3.9	7.8	1.8	2.3	3.3	2.0	2.9	7.0
North Central		2.8	5.1	9.0	3.3	6.2	8.7	—	—	2.7	3.0	6.3	7.3	3.4	5.2	7.4	2.3	3.1	4.1	2.8	4.5	6.5
South		2.8	4.8	8.7	3.3	6.0	8.7	—	—	3.6	5.8	6.7	11.7	4.0	6.0	7.8	2.8	3.0	3.0	3.2	5.3	7.0
West		2.2	6.2	6.2	3.8	7.8	9.1	—	—	2.7	4.1	6.8	10.1	3.9	9.6	8.3	3.1	6.6	5.1	3.0	8.0	7.5
Population Density:																						
Large MSA		2.0	5.2	8.0	2.3	6.2	9.4	—	—	2.4	4.1	7.3	12.0	3.3	5.5	6.6	2.4	3.3	2.8	2.4	4.7	6.0
Other MSA		2.6	5.0	9.4	3.2	6.5	9.9	—	—	4.2	4.7	6.9	11.4	3.6	6.7	8.6	2.4	4.0	4.0	2.8	5.5	7.8
Non-MSA		2.8	4.5	7.3	4.7	6.0	7.7	—	—	2.0	3.8	5.0	6.8	3.9	5.7	7.7	2.9	3.2	4.6	3.4	5.1	6.8
Parental Education: <sup>e</sup>																						
1.0-2.0 (Low)		5.6	5.8	6.4	5.6	7.7	6.4	—	—	6.2	8.0	8.4	7.7	6.7	12.2	10.5	4.9	7.3	6.6	5.4	10.0	7.7
2.5-3.0		3.0	6.0	8.7	4.2	6.5	9.3	—	—	3.8	5.4	7.3	10.9	4.4	7.3	8.4	3.0	4.1	3.9	3.5	6.0	7.3
3.5-4.0		2.4	5.1	9.1	3.3	6.6	10.2	—	—	2.4	4.6	7.0	10.7	3.7	5.5	8.2	2.6	3.2	3.9	3.0	5.0	8.3
4.5-5.0		1.8	4.1	8.2	2.5	5.7	9.0	—	—	2.4	3.7	5.5	10.5	2.6	3.9	6.5	1.8	2.1	2.8	2.2	3.2	5.5
5.5-6.0 (High)		1.5	4.1	6.7	2.3	6.3	8.4	—	—	1.8	2.1	5.8	10.5	2.3	4.5	6.3	1.9	3.1	2.5	1.4	3.9	5.5

NOTE: '—' indicates data not available.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>12th grade only: Data based on one of six forms; N is one-sixth of N indicated.

<sup>b</sup>12th grade only: Data based on two of six forms; N is two-sixths of N indicated.

<sup>c</sup>8th and 10th grades only: Data based on two of four forms; N is one-half of N indicated.

<sup>d</sup>12th grade only: Data based on four of six forms; N is four-sixths of N indicated.

<sup>e</sup>Parental education is an average score of mother's education and father's education reported on the following scale: (1) Completed grade school or less, (2) Some high school, (3) Completed high school, (4) Some college, (5) Completed college, (6) Graduate or professional school after college. Missing data was allowed on one of the two variables.

(Table continued on next page)

**TABLE 4-5 (cont.)**  
**Lifetime Prevalence of Use of Various Drugs by Subgroups**  
**Eighth, Tenth, and Twelfth Graders, 2002**  
(Entries are percentages)

Grade:	Heroin Any Use			Heroin with a Needle <sup>a</sup>			Heroin without a Needle <sup>a</sup>			Other Narcotics <sup>a,b</sup>			Amphetamines <sup>b</sup>			Meth- amphetamine <sup>c,d</sup>			Crystal Meth. (Ice) <sup>d</sup>			Sedatives (Barbiturates) <sup>b</sup>		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Total	1.6	1.8	1.7	1.0	1.0	0.8	1.0	1.3	1.6	—	—	10.1	8.8	14.9	16.8	3.5	6.1	6.7	—	—	4.7	—	—	9.5
Gender:																								
Male	1.5	1.9	1.8	1.0	0.9	0.9	0.9	1.5	1.8	—	—	10.9	7.7	13.2	16.5	3.2	6.0	7.4	—	—	5.3	—	—	10.4
Female	1.6	1.6	1.5	1.0	0.9	0.6	1.2	1.1	1.4	—	—	9.1	9.7	16.7	16.8	3.8	6.0	6.2	—	—	4.0	—	—	8.6
College Plans:																								
None or under 4 yrs.	5.7	4.2	3.5	3.8	2.4	1.3	3.8	3.2	3.6	—	—	12.5	17.3	23.3	22.3	10.8	12.9	10.4	—	—	6.6	—	—	14.0
Complete 4 yrs.	1.2	1.4	1.2	0.8	0.7	0.6	0.8	1.0	1.0	—	—	9.1	7.9	13.7	15.4	2.8	5.0	5.6	—	—	4.2	—	—	8.5
Region:																								
Northeast	1.3	1.4	1.5	0.8	0.7	0.8	0.9	1.2	1.4	—	—	11.0	5.9	13.1	16.6	1.7	2.9	4.1	—	—	3.6	—	—	8.0
North Central	1.7	1.7	1.7	1.3	0.9	1.1	1.0	1.2	1.7	—	—	9.8	9.5	14.6	17.6	4.3	4.8	7.1	—	—	3.7	—	—	9.0
South	1.6	1.9	2.1	1.1	0.9	0.5	1.1	1.4	2.2	—	—	9.8	10.0	16.7	17.8	4.3	7.1	6.7	—	—	5.2	—	—	11.9
West	1.5	2.2	1.1	0.9	1.4	0.7	1.1	1.6	0.8	—	—	10.3	8.0	14.0	14.4	2.7	8.7	8.6	—	—	5.9	—	—	7.8
Population Density:																								
Large MSA	1.3	1.8	1.7	0.8	0.8	0.7	1.0	1.2	1.4	—	—	9.8	6.8	13.0	15.4	2.2	4.4	4.9	—	—	3.9	—	—	9.1
Other MSA	1.5	1.7	1.6	0.9	0.9	0.6	0.8	1.3	1.7	—	—	11.0	9.2	15.8	16.6	3.7	7.1	7.6	—	—	5.3	—	—	9.7
Non-MSA	2.2	2.0	1.7	1.6	1.3	1.2	1.5	1.6	1.6	—	—	8.7	10.3	15.8	18.8	4.7	6.1	7.3	—	—	4.5	—	—	9.7
Parental Education: <sup>e</sup>																								
1.0-2.0 (Low)	3.1	3.3	2.8	2.7	2.0	1.3	1.6	2.2	2.9	—	—	7.2	12.6	18.5	12.9	5.8	10.4	6.5	—	—	8.7	—	—	8.6
2.5-3.0	1.9	1.8	1.7	1.3	0.8	0.7	1.3	1.4	1.3	—	—	8.8	10.9	17.3	18.0	4.4	8.0	7.3	—	—	4.9	—	—	10.0
3.5-4.0	1.6	1.8	1.6	0.9	1.0	0.8	1.1	1.3	1.9	—	—	11.8	9.0	16.1	18.4	4.2	6.1	7.0	—	—	4.4	—	—	10.7
4.5-5.0	1.2	1.3	1.1	0.7	0.6	0.4	0.9	0.9	0.7	—	—	11.0	7.6	13.4	16.6	2.4	3.7	5.9	—	—	3.7	—	—	8.7
5.5-6.0 (High)	0.9	2.2	2.0	0.6	1.3	1.2	0.5	1.8	1.7	—	—	9.4	6.4	11.0	14.2	2.1	4.6	6.1	—	—	3.8	—	—	9.0

NOTE: '—' indicates data not available.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>12th grade only: Data based on three of six forms; N is one-half of N indicated.

<sup>b</sup>Only drug use not under a doctor's orders is included here.

<sup>c</sup>8th and 10th grades only: Data based on one of four forms; N is one-third of N indicated.

<sup>d</sup>12th grade only: Data based on two of six forms; N is two-sixths of N indicated.

<sup>e</sup>Parental education is an average score of mother's education and father's education reported on the following scale: (1) Completed grade school or less, (2) Some high school, (3) Completed high school, (4) Some college, (5) Completed college, (6) Graduate or professional school after college. Missing data was allowed on one of the two variables.

(Table continued on next page)

**TABLE 4-5 (cont.)**  
**Lifetime Prevalence of Use of Various Drugs by Subgroups**  
**Eighth, Tenth, and Twelfth Graders, 2002**  
(Entries are percentages)

Grade:	<u>Methaqualone<sup>a,b</sup></u>			<u>Tranquilizers<sup>b</sup></u>			<u>Rohypnol<sup>c</sup></u>			<u>Alcohol</u>			<u>Been Drunk<sup>d</sup></u>			<u>Cigarettes</u>			<u>Smokeless Tobacco<sup>a,e</sup></u>			<u>Steroids<sup>d</sup></u>		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Total	—	—	1.5	4.3	8.9	11.4	0.9	1.3	—	47.0	66.9	78.4	21.3	44.0	61.6	31.4	47.4	57.2	11.2	16.9	18.3	2.5	3.5	4.0
Gender:																								
Male	—	—	1.5	3.6	8.1	12.0	0.5	0.8	—	47.2	65.5	77.9	21.3	43.1	61.2	32.0	46.8	57.1	16.5	26.6	30.2	3.2	4.9	5.9
Female	—	—	1.2	5.0	9.5	10.5	1.1	1.6	—	46.8	68.5	78.5	21.3	45.0	61.6	30.9	47.9	56.7	6.2	7.1	8.0	1.9	2.1	2.1
College Plans:																								
None or under 4 yrs.	—	—	2.3	9.2	15.2	15.5	2.3	1.6	—	63.0	77.3	81.0	39.4	57.5	64.7	56.8	66.1	67.6	27.0	30.6	28.6	5.4	5.5	6.5
Complete 4 yrs.	—	—	1.1	3.8	7.9	10.3	0.7	1.2	—	45.5	65.4	77.7	19.7	42.0	60.3	28.8	44.2	54.1	9.7	14.6	15.3	2.2	3.2	3.2
Region:																								
Northeast	—	—	1.6	2.9	6.5	9.8	0.8	0.9	—	45.9	68.8	81.7	18.9	45.1	67.9	26.8	44.5	57.0	6.7	11.5	14.3	1.8	3.0	3.9
North Central	—	—	1.9	3.9	7.6	9.5	0.9	0.7	—	46.0	66.2	79.0	21.7	45.0	66.7	30.6	47.7	60.5	12.4	14.5	22.6	2.6	2.8	4.1
South	—	—	1.6	5.6	11.3	15.6	0.9	1.3	—	51.5	65.8	77.3	23.8	42.1	56.2	37.6	50.3	57.9	15.0	22.9	20.9	3.1	4.3	3.7
West	—	—	1.1	3.9	8.4	8.7	0.8	2.4	—	41.4	68.0	76.4	18.5	45.0	58.7	25.6	44.6	52.2	7.0	14.3	12.8	2.1	3.4	4.3
Population Density:																								
Large MSA	—	—	1.1	3.6	7.2	11.4	0.4	1.3	—	46.7	62.9	78.9	18.9	40.4	62.2	26.2	42.7	53.2	6.2	12.1	11.8	1.9	3.3	3.6
Other MSA	—	—	1.5	4.5	9.6	12.2	0.8	1.7	—	46.6	68.1	78.8	21.1	44.3	62.3	31.7	47.5	58.5	10.3	17.0	17.8	2.6	3.5	4.6
Non-MSA	—	—	2.1	5.0	9.4	9.9	1.4	0.3	—	48.2	69.8	76.8	24.5	48.3	59.4	37.5	53.6	60.0	19.1	23.2	27.6	3.3	3.6	3.3
Parental Education: <sup>f</sup>																								
1.0-2.0 (Low)	—	—	2.3	7.4	11.2	8.6	3.0	0.9	—	56.9	71.9	74.1	29.9	46.6	54.7	47.7	54.8	53.4	15.6	16.9	15.7	3.1	3.4	3.8
2.5-3.0	—	—	0.8	5.5	10.3	11.4	0.2	1.6	—	54.8	72.6	79.0	26.9	49.9	57.9	41.6	57.4	58.8	15.3	21.9	21.4	2.6	3.0	5.3
3.5-4.0	—	—	1.2	4.4	9.2	12.3	0.7	1.8	—	50.5	69.3	80.7	23.0	44.3	67.3	33.1	47.3	59.9	12.8	17.0	19.9	3.1	4.4	4.0
4.5-5.0	—	—	1.1	3.6	7.6	11.4	1.1	1.2	—	43.1	63.6	77.5	17.5	42.3	62.1	23.6	41.7	55.7	9.4	15.7	17.1	2.0	3.1	3.6
5.5-6.0 (High)	—	—	0.4	2.8	7.0	11.6	0.5	0.7	—	37.7	58.8	78.0	15.6	37.6	57.5	19.6	36.2	54.2	6.4	12.2	15.4	2.6	4.1	2.7

NOTE: '—' indicates data not available.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>12th grade only: Data based on one of six forms; N is one-sixth of N indicated.

<sup>b</sup>Only drug use not under a doctor's orders is included here.

<sup>c</sup>8th and 10th grades only: Data based on one of four forms; N is one-sixth of N indicated.

<sup>d</sup>12th grade only: Data based on two of six forms; N is two-sixths of N indicated.

<sup>e</sup>8th and 10th grades only: Data based on two of four forms; N is one-half of N indicated.

<sup>f</sup>Parental education is an average score of mother's education and father's education reported on the following scale: (1) Completed grade school or less, (2) Some high school, (3) Completed high school, (4) Some college, (5) Completed college, (6) Graduate or professional school after college. Missing data was allowed on one of the two variables.



**TABLE 4-6**  
**Annual Prevalence of Use of Various Drugs by Subgroups**  
**Eighth, Tenth, and Twelfth Graders, 2002**

(Entries are percentages)

Grade:	<i>Approx. N<sup>a</sup></i>			Any Illicit Drug			Any Illicit Drug Other Than Marijuana			Marijuana			Inhalants <sup>b,c</sup>			Amyl/Butyl Nitrites <sup>d</sup>			Hallucinogens <sup>e</sup>			LSD		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Total	15,100	14,300	12,900	17.7	34.8	41.0	8.8	15.7	20.9	14.6	30.3	36.2	7.7	5.8	4.5	—	—	1.1	2.6	4.7	6.6	1.5	2.6	3.5
Gender:																								
Male	7,000	6,900	5,800	19.2	35.9	43.5	8.1	15.1	22.0	17.0	32.3	39.9	7.6	5.4	5.8	—	—	1.3	2.9	5.5	8.4	1.7	3.1	4.4
Female	7,600	7,100	6,600	16.3	33.7	37.8	9.3	16.4	19.0	12.4	28.4	32.4	7.8	6.0	3.3	—	—	0.8	2.2	3.9	4.7	1.3	2.0	2.3
College Plans:																								
None or under 4 yrs.	1,300	2,000	2,400	36.8	51.5	46.2	19.7	27.1	27.2	33.1	46.6	40.9	14.5	9.8	6.3	—	—	2.5	7.8	10.3	9.8	5.7	6.0	5.7
Complete 4 yrs.	13,400	12,100	9,700	15.7	32.1	39.3	7.6	14.0	19.0	12.7	27.7	34.7	7.1	5.2	4.2	—	—	0.7	2.0	3.9	5.5	1.1	2.0	2.7
Region:																								
Northeast	2,800	2,600	2,500	13.8	35.2	45.7	5.8	13.4	21.5	11.3	31.7	41.9	6.9	6.0	5.4	—	—	2.3	1.5	4.2	9.1	0.9	2.2	5.4
North Central	4,000	3,700	3,300	17.0	33.7	41.6	8.7	15.3	19.9	14.3	29.0	37.5	8.0	5.8	5.6	—	—	1.2	2.7	5.1	6.4	1.8	2.8	3.7
South	5,400	5,100	4,300	20.1	33.9	38.1	10.6	16.8	21.3	16.3	28.9	32.6	8.4	5.4	4.1	—	—	0.9	2.9	4.0	5.6	1.8	2.3	3.1
West	2,900	2,900	2,800	18.4	37.7	40.5	8.4	16.7	21.1	15.3	33.4	35.2	6.4	6.2	3.2	—	—	0.3	2.9	5.9	6.2	1.2	3.2	2.1
Population Density:																								
Large MSA	4,500	4,300	4,000	15.9	33.0	41.9	7.4	14.3	20.6	12.7	29.0	37.7	7.1	5.1	4.4	—	—	1.4	2.0	4.7	6.8	1.3	2.6	3.3
Other MSA	6,900	6,800	5,900	18.3	36.9	42.4	9.2	16.5	21.6	15.2	32.4	38.0	8.0	5.4	4.4	—	—	0.9	2.4	4.9	7.2	1.5	2.7	4.0
Non-MSA	3,700	3,200	3,000	18.9	32.8	37.1	9.8	16.1	20.2	16.1	27.6	30.8	7.8	7.4	4.8	—	—	1.1	3.5	4.4	5.2	1.9	2.3	2.7
Parental Education: <sup>e</sup>																								
1.0-2.0 (Low)	1,100	1,300	980	27.3	39.4	35.3	13.0	21.0	17.8	24.2	33.5	30.8	10.3	5.6	5.7	—	—	2.5	4.4	5.3	5.1	3.4	2.7	2.4
2.5-3.0	3,200	3,300	2,800	22.4	39.4	39.3	10.9	18.3	20.3	18.7	35.1	34.9	8.3	6.0	4.3	—	—	1.1	3.2	5.2	6.6	2.0	2.9	3.4
3.5-4.0	3,500	3,700	3,800	18.5	35.5	43.2	9.0	16.1	22.0	15.4	30.1	38.5	8.9	6.3	4.5	—	—	0.7	2.6	4.8	7.1	1.3	2.8	4.0
4.5-5.0	3,800	3,500	3,100	14.5	31.9	42.0	7.6	13.7	21.2	11.4	27.9	37.0	7.3	5.6	4.7	—	—	0.6	2.1	4.0	6.7	1.2	2.0	3.1
5.5-6.0 (High)	2,100	1,700	1,500	12.1	29.1	40.6	6.5	12.2	19.8	9.7	25.8	36.1	6.2	5.2	4.6	—	—	1.3	1.7	5.2	5.9	0.8	2.4	2.8

NOTE: '—' indicates data not available.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Subgroup Ns may vary depending on the number of forms in which the use of each drug was asked about.

<sup>b</sup>12th grade only: Data based on three of six forms; N is one-half of N indicated.

<sup>c</sup>Unadjusted for known underreporting of certain drugs. See text for details.

<sup>d</sup>12th grade only: Data based on one of six forms; N is one-sixth of N indicated.

<sup>e</sup>Parental education is an average score of mother's education and father's education reported on the following scale: (1) Completed grade school or less, (2) Some high school, (3) Completed high school, (4) Some college, (5) Completed college, (6) Graduate or professional school after college. Missing data was allowed on one of the two variables.

(Table continued on next page)

**TABLE 4-6 (cont.)**  
**Annual Prevalence of Use of Various Drugs by Subgroups**  
**Eighth, Tenth, and Twelfth Graders, 2002**  
 (Entries are percentages)

Grade:	Hallucinogens Other Than LSD			PCP <sup>a</sup>			MDMA <sup>b,c</sup>			Cocaine			Crack			Other Cocaine <sup>d</sup>			Heroin Any Use			Heroin with a Needle <sup>e</sup>			Heroin without a Needle <sup>e</sup>		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Total	2.1	4.0	5.5	—	—	1.1	2.9	4.9	7.4	2.3	4.0	5.0	1.6	2.3	2.3	1.8	3.4	4.4	0.9	1.1	1.0	0.6	0.6	0.4	0.6	0.8	0.8
Gender:																											
Male	2.4	4.6	7.2	—	—	1.5	3.1	4.3	8.2	2.2	4.2	5.9	1.6	2.5	2.6	1.7	3.6	5.0	0.8	1.3	1.1	0.6	0.6	0.5	0.6	0.9	0.9
Female	1.7	3.4	3.5	—	—	0.7	2.6	5.2	6.4	2.3	3.9	4.0	1.6	2.2	1.8	1.9	3.3	3.7	1.0	0.8	0.8	0.6	0.4	0.2	0.7	0.6	0.7
College Plans:																											
None or under 4 yrs.	6.5	8.8	7.9	—	—	2.3	9.1	10.1	8.9	7.2	10.1	8.6	5.7	5.6	4.5	6.4	8.7	7.1	2.9	2.7	2.3	1.9	1.5	0.9	1.7	2.2	2.2
Complete 4 yrs.	1.6	3.3	4.6	—	—	0.8	2.3	4.1	7.1	1.8	3.1	3.9	1.2	1.8	1.7	1.3	2.6	3.4	0.7	0.8	0.7	0.5	0.4	0.3	0.5	0.6	0.4
Region:																											
Northeast	1.3	3.6	7.5	—	—	1.8	2.0	4.4	10.3	1.6	2.4	5.0	1.2	1.4	2.0	1.2	1.8	4.3	0.8	0.9	1.2	0.6	0.4	0.6	0.3	0.7	1.1
North Central	2.1	4.3	5.0	—	—	1.1	2.3	4.6	5.0	2.3	3.6	5.2	1.5	2.2	2.6	1.8	3.2	4.8	1.0	1.2	1.0	0.8	0.6	0.6	0.7	0.9	0.9
South	2.2	3.4	4.5	—	—	1.0	3.7	5.1	7.9	2.6	3.8	5.0	1.7	1.7	1.9	2.1	3.3	4.4	1.0	0.8	1.2	0.6	0.5	0.3	0.7	0.5	0.9
West	2.6	5.1	5.6	—	—	0.7	3.0	5.2	6.8	2.4	6.5	4.6	2.0	4.4	2.8	1.9	5.5	3.9	1.0	1.4	0.5	0.6	0.8	0.2	0.7	1.2	0.4
Population Density:																											
Large MSA	1.6	4.0	5.9	—	—	1.3	2.6	5.1	8.4	2.0	3.6	4.1	1.5	2.2	1.6	1.4	3.1	3.5	0.7	0.9	1.0	0.4	0.5	0.5	0.6	0.6	0.6
Other MSA	1.9	4.0	5.8	—	—	1.1	3.3	5.2	8.1	2.3	4.4	5.4	1.6	2.5	2.4	1.8	3.7	4.7	1.0	1.0	1.0	0.7	0.4	0.3	0.5	0.8	1.1
Non-MSA	3.0	3.9	4.3	—	—	0.9	2.5	3.7	4.6	2.6	3.8	5.3	1.8	2.2	2.8	2.3	3.3	4.9	1.1	1.4	1.1	0.8	1.0	0.5	0.8	1.0	0.6
Parental Education: <sup>f</sup>																											
1.0-2.0 (Low)	3.4	4.4	4.3	—	—	4.1	6.0	5.8	4.8	3.7	7.9	6.6	3.1	3.9	4.8	2.8	7.1	5.1	1.2	2.0	2.1	1.1	1.2	0.8	0.5	1.5	1.8
2.5-3.0	2.6	4.3	5.4	—	—	1.0	3.6	5.5	8.0	2.8	4.8	5.3	2.1	2.6	2.2	2.3	3.9	4.7	1.3	0.8	1.0	0.9	0.3	0.4	0.8	0.7	0.9
3.5-4.0	1.9	4.0	5.6	—	—	0.7	2.9	5.5	7.5	2.2	3.8	5.3	1.4	2.2	2.3	1.9	3.2	4.9	0.9	1.1	0.9	0.6	0.6	0.5	0.6	0.8	1.0
4.5-5.0	1.7	3.5	5.8	—	—	0.7	2.4	3.9	7.3	2.0	2.4	4.2	1.2	1.4	1.7	1.6	2.0	3.4	0.8	0.7	0.7	0.5	0.3	0.2	0.6	0.5	0.2
5.5-6.0 (High)	1.5	4.6	5.1	—	—	1.3	1.2	4.6	7.6	1.5	3.2	4.3	1.3	2.2	1.5	0.8	2.7	3.9	0.6	1.6	1.0	0.4	1.1	0.2	0.4	1.1	0.8

NOTE: '—' indicates data not available.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>12th grade only: Data based on one of six forms; N is one-sixth of N indicated.

<sup>b</sup>8th and 10th grades only: Data based on two of four forms; N is one-half of N indicated.

<sup>c</sup>12th grade only: Data based on two of six forms; N is two-sixths of N indicated.

<sup>d</sup>12th grade only: Data based on four of six forms; N is four-sixths of N indicated.

<sup>e</sup>12th grade only: Data based on three of six forms; N is one-half of N indicated.

<sup>f</sup>Parental education is an average score of mother's education and father's education reported on the following scale: (1) Completed grade school or less, (2) Some high school, (3) Completed high school, (4) Some college, (5) Completed college, (6) Graduate or professional school after college. Missing data was allowed on one of the two variables.

(Table continued on next page)

**TABLE 4-6 (cont.)**  
**Annual Prevalence of Use of Various Drugs by Subgroups**  
**Eighth, Tenth, and Twelfth Graders, 2002**  
(Entries are percentages)

Grade:	Other Narcotics <sup>a,b</sup>			Oxycontin <sup>c,d</sup>			Vicodin <sup>c,d</sup>			Amphetamines <sup>a</sup>			Meth-amphetamine <sup>c,d</sup>			Crystal Meth. (Ice) <sup>d</sup>			Ritalin <sup>c,d</sup>			Sedatives (Barbiturates) <sup>a</sup>			Methaqualone <sup>a,e</sup>		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Total	—	—	7.0	1.3	3.0	4.0	2.5	6.9	9.6	5.5	10.7	11.1	2.2	3.9	3.6	—	—	3.1	2.8	4.8	4.0	—	—	6.7	—	—	0.9
Gender:																											
Male	—	—	7.7	1.9	3.6	5.6	2.7	7.4	12.0	4.8	9.6	11.3	2.0	3.9	4.3	—	—	3.5	3.2	4.9	5.1	—	—	7.4	—	—	1.0
Female	—	—	6.0	0.9	2.4	2.6	2.4	6.1	7.5	6.2	11.8	10.7	2.4	3.6	3.0	—	—	2.5	2.5	4.6	2.8	—	—	5.9	—	—	0.8
College Plans:																											
None or under 4 yrs.	—	—	8.7	4.3	6.5	7.0	5.9	13.4	13.0	12.2	17.5	14.8	6.6	9.1	6.5	—	—	4.8	7.7	10.2	7.7	—	—	9.8	—	—	1.2
Complete 4 yrs.	—	—	6.2	1.0	2.5	3.2	2.1	5.7	8.4	4.8	9.7	10.1	1.7	3.0	2.7	—	—	2.6	2.2	3.8	3.0	—	—	6.0	—	—	0.8
Region:																											
Northeast	—	—	8.6	1.0	3.6	5.0	1.5	6.2	8.1	3.4	9.3	11.5	0.8	1.5	1.6	—	—	2.6	2.8	3.6	4.5	—	—	5.9	—	—	1.0
North Central	—	—	7.0	1.7	2.1	5.0	3.3	7.2	11.6	5.9	10.4	11.3	2.5	3.0	4.5	—	—	2.0	3.0	4.8	5.4	—	—	6.4	—	—	1.2
South	—	—	6.7	1.5	3.7	3.6	2.5	5.3	8.1	6.7	12.2	11.7	2.8	4.6	3.0	—	—	3.5	2.8	5.2	3.4	—	—	8.4	—	—	1.1
West	—	—	5.8	0.9	2.6	2.6	2.6	10.0	10.9	4.7	9.6	9.6	2.0	5.8	5.4	—	—	4.0	2.5	5.1	2.6	—	—	5.1	—	—	0.5
Population Density:																											
Large MSA	—	—	6.7	1.2	2.0	3.7	2.6	5.7	9.7	4.2	9.8	10.7	1.3	3.1	2.1	—	—	2.2	2.3	3.6	3.9	—	—	6.5	—	—	0.5
Other MSA	—	—	7.6	1.4	3.3	3.8	3.0	7.9	10.6	5.9	11.0	11.0	2.5	4.4	4.4	—	—	3.6	3.1	5.8	4.0	—	—	6.7	—	—	1.0
Non-MSA	—	—	6.1	1.5	3.7	4.7	1.6	6.2	7.8	6.3	11.2	12.1	2.7	3.7	4.1	—	—	3.2	2.8	4.3	4.0	—	—	7.0	—	—	1.4
Parental Education: <sup>f</sup>																											
1.0-2.0 (Low)	—	—	5.6	2.9	6.5	6.3	3.3	6.1	12.1	6.3	13.1	8.1	4.3	6.2	3.5	—	—	3.7	5.3	7.7	5.3	—	—	5.1	—	—	1.2
2.5-3.0	—	—	5.5	2.0	3.8	5.3	3.9	8.0	9.6	7.3	12.8	11.4	3.0	4.9	4.9	—	—	3.6	4.0	5.9	4.2	—	—	7.1	—	—	0.1
3.5-4.0	—	—	9.0	1.0	2.0	3.9	3.4	7.5	9.5	5.7	11.1	12.3	2.0	3.7	3.8	—	—	2.4	3.3	4.2	3.9	—	—	7.7	—	—	1.0
4.5-5.0	—	—	7.0	0.9	1.7	2.2	1.4	5.7	9.9	4.9	9.5	11.1	1.9	2.4	2.9	—	—	2.8	1.5	3.6	3.5	—	—	6.3	—	—	0.7
5.5-6.0 (High)	—	—	6.5	1.3	4.4	4.0	1.3	6.6	8.6	4.3	8.1	10.2	1.1	4.0	3.1	—	—	2.8	1.7	4.7	3.9	—	—	6.6	—	—	0.4

NOTE: '—' indicates data not available.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Only drug use not under a doctor's orders is included here.

<sup>b</sup>12th grade only: Data based on three of six forms; N is one-half of N indicated.

<sup>c</sup>8th and 10th grades only: Data based on one of four forms; N is one-third of N indicated.

<sup>d</sup>12th grade only: Data based on two of six forms; N is two-sixths of N indicated.

<sup>e</sup>For 12th grade only: Data based on one of six forms; N is one-sixth of N indicated.

<sup>f</sup>Parental education is an average score of mother's education and father's education reported on the following scale: (1) Completed grade school or less, (2) Some high school, (3) Completed high school, (4) Some college, (5) Completed college, (6) Graduate or professional school after college. Missing data was allowed on one of the two variables.

(Table continued on next page)

**TABLE 4-6 (cont.)**  
**Annual Prevalence of Use of Various Drugs by Subgroups**  
**Eighth, Tenth, and Twelfth Graders, 2002**  
(Entries are percentages)

Grade:	<u>Tranquilizers<sup>a</sup></u>			<u>Rohypnol<sup>b,c</sup></u>			<u>GHB<sup>d,e</sup></u>			<u>Ketamine<sup>e,f</sup></u>			<u>Alcohol</u>			<u>Been Drunk<sup>c</sup></u>			<u>Bidis<sup>b,c</sup></u>			<u>Kreteks<sup>b,c</sup></u>			<u>Steroids<sup>c</sup></u>		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Total	2.6	6.3	7.7	0.3	0.7	1.6	0.8	1.4	1.5	1.3	2.2	2.6	38.7	60.0	71.5	15.0	35.4	50.4	2.7	3.1	5.9	2.6	4.9	8.5	1.5	2.2	2.5
Gender:																											
Male	2.2	5.7	8.4	0.2	0.4	2.3	1.0	1.3	2.4	1.6	2.3	3.5	38.1	58.4	71.6	15.0	35.2	51.7	3.6	3.2	7.8	3.2	4.7	10.4	1.8	3.2	3.8
Female	2.8	6.9	6.9	0.2	0.9	1.0	0.8	1.4	0.8	0.9	2.0	1.7	39.2	61.8	71.2	15.1	35.9	49.0	1.9	2.9	4.0	2.0	4.8	6.7	1.2	1.2	1.3
College Plans:																											
None or under 4 yrs.	6.5	11.6	9.9	1.0	0.5	2.5	2.1	2.5	2.4	4.3	4.6	4.9	54.3	70.6	74.5	30.1	47.9	51.3	8.9	4.9	7.3	8.9	8.0	10.2	3.6	3.0	4.1
Complete 4 yrs.	2.1	5.5	7.1	0.2	0.7	1.4	0.7	1.2	1.3	1.0	1.8	2.1	37.4	58.5	70.9	13.6	33.6	49.5	2.0	2.7	5.2	1.9	4.3	7.8	1.3	2.1	2.0
Region:																											
Northeast	1.8	4.6	6.8	0.2	0.4	1.2	0.8	0.6	1.2	1.1	2.2	3.9	38.4	63.5	75.1	12.4	36.6	59.5	1.9	2.4	9.3	2.1	5.3	11.7	1.2	2.0	2.1
North Central	2.4	5.5	6.5	0.4	0.3	1.8	1.1	0.9	2.4	1.2	1.6	3.0	38.5	59.8	73.5	15.7	37.0	55.8	2.8	2.5	3.7	2.6	3.6	7.6	1.6	1.8	2.8
South	3.4	8.1	10.4	0.4	0.4	1.5	0.7	1.8	1.3	1.3	2.2	2.3	41.8	57.9	69.2	16.9	33.6	45.6	2.9	3.2	3.4	2.8	4.3	6.6	1.9	2.5	2.5
West	1.9	5.8	5.8	0.1	2.0	2.0	0.9	2.1	1.0	1.6	2.9	1.7	33.8	60.8	69.5	13.1	35.6	44.0	2.9	4.1	9.8	2.7	7.3	10.1	1.2	2.4	2.4
Population Density:																											
Large MSA	2.0	5.1	7.8	0.1	0.7	1.6	0.6	0.9	1.4	1.1	2.2	2.5	37.6	56.5	73.2	12.4	32.4	51.3	2.1	2.8	5.2	2.3	4.9	6.9	1.1	2.1	2.0
Other MSA	2.7	6.8	8.2	0.3	0.9	2.0	0.9	1.5	1.4	1.1	2.3	2.7	38.9	61.3	71.7	15.6	35.3	51.6	2.5	3.4	7.3	2.6	5.2	10.6	1.6	2.3	3.0
Non-MSA	2.9	6.7	6.8	0.5	0.3	1.1	0.9	1.8	1.9	1.7	1.9	2.8	39.9	62.1	68.9	17.0	39.8	46.7	3.6	2.7	4.1	2.8	4.2	6.5	2.1	2.1	2.1
Parental Education: <sup>g</sup>																											
1.0-2.0 (Low)	5.0	7.1	5.2	0.9	0.4	3.7	1.3	2.1	3.0	3.2	4.3	4.4	46.9	64.5	65.5	21.1	35.5	36.2	7.3	1.7	9.4	8.0	3.7	9.7	1.8	1.6	3.6
2.5-3.0	3.6	7.5	7.9	0.0	0.9	2.9	1.4	1.7	2.4	2.3	2.8	3.1	45.1	65.3	71.5	19.8	39.8	46.3	2.8	3.5	4.5	2.8	4.8	7.3	1.7	2.0	3.0
3.5-4.0	2.2	6.7	8.4	0.2	1.0	0.8	0.6	1.1	0.9	0.9	1.3	2.3	43.0	61.6	73.8	16.6	35.8	56.2	2.5	2.8	5.1	1.9	5.4	8.9	1.9	2.8	2.8
4.5-5.0	2.0	5.8	7.9	0.6	0.7	1.6	0.6	1.0	1.0	0.6	1.4	1.9	34.8	57.6	70.9	12.1	34.6	51.7	2.2	2.7	5.6	2.1	4.0	7.2	1.0	2.0	2.3
5.5-6.0 (High)	1.6	4.6	7.9	0.2	0.2	0.8	0.5	1.7	1.6	0.6	3.0	2.6	31.6	53.1	73.3	10.4	31.7	49.0	1.2	4.0	8.8	1.3	6.6	11.4	1.6	3.0	1.0

NOTES: '—' indicates data not available. '\*' indicates less than .05 percent but greater than 0 percent.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Only drug use not under a doctor's orders is included here.

<sup>b</sup>8th and 10th grades only: Data based on one of four forms; N is one-sixth of N indicated.

<sup>c</sup>12th grade only: Data based on two of six forms; N is two-sixths of N indicated.

<sup>d</sup>12th grade only: Data based on one of six forms; N is one-sixth of N indicated.

<sup>e</sup>8th and 10th grades only: Data based on one of four forms; N is one-third of N indicated.

<sup>f</sup>12th grade only: Data based on three of six forms; N is one-half of N indicated.

<sup>g</sup>Parental education is an average score of mother's education and father's education reported on the following scale: (1) Completed grade school or less, (2) Some high school, (3) Completed high school, (4) Some college, (5) Completed college, (6) Graduate or professional school after college. Missing data was allowed on one of the two variables.

**TABLE 4-7**  
**Thirty-Day Prevalence of Use of Various Drugs by Subgroups**  
**Eighth, Tenth, and Twelfth Graders, 2002**  
(Entries are percentages)

Grade:	Approx. N <sup>a</sup>			Any Illicit Drug			Any Illicit Drug Other Than Marijuana			Marijuana			Inhalants <sup>b,c</sup>			Amyl/Butyl Nitrites <sup>d</sup>			Hallucinogens <sup>c</sup>		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Total	15,100	14,300	12,900	10.4	20.8	25.4	4.7	8.1	11.3	8.3	17.8	21.5	3.8	2.4	1.5	—	—	0.6	1.2	1.6	2.3
Gender:																					
Male	7,000	6,900	5,800	11.2	21.7	28.5	4.3	7.7	11.9	9.5	19.3	25.3	3.5	2.3	2.2	—	—	0.8	1.4	1.9	3.3
Female	7,600	7,100	6,600	9.5	19.8	21.8	4.9	8.3	10.0	7.1	16.4	17.4	3.9	2.4	0.8	—	—	0.3	1.0	1.4	1.1
College Plans:																					
None or under 4 yrs.	1,300	2,000	2,400	25.7	35.8	31.5	12.0	15.8	16.0	23.2	31.5	27.0	6.9	5.0	2.8	—	—	1.5	4.3	4.5	3.9
Complete 4 yrs.	13,400	12,100	9,700	8.8	18.4	23.5	3.9	6.9	9.7	6.8	15.6	19.6	3.5	2.0	1.2	—	—	0.4	0.9	1.2	1.8
Region:																					
Northeast	2,800	2,600	2,500	8.1	21.9	28.8	3.5	6.9	11.5	6.3	19.4	25.6	3.3	2.5	1.8	—	—	1.0	0.9	1.6	3.2
North Central	4,000	3,700	3,300	9.9	19.5	25.6	4.3	7.0	10.4	8.0	16.7	22.4	3.8	2.3	1.5	—	—	0.5	1.2	1.5	2.0
South	5,400	5,100	4,300	11.8	19.8	24.3	5.5	8.8	12.1	9.4	16.6	20.0	4.4	2.4	1.3	—	—	0.8	1.3	1.3	1.9
West	2,900	2,900	2,800	10.7	23.5	23.8	4.8	9.3	11.0	8.6	20.2	19.3	3.1	2.3	1.3	—	—	0.2	1.5	2.5	2.3
Population Density:																					
Large MSA	4,500	4,300	4,000	8.8	19.7	26.5	4.0	7.0	10.8	6.7	16.8	22.9	3.4	1.9	1.7	—	—	1.2	1.0	1.9	2.2
Other MSA	6,900	6,800	5,900	10.9	22.4	26.3	4.9	8.8	11.2	8.8	19.1	22.7	3.8	2.2	1.4	—	—	0.3	1.2	1.4	2.6
Non-MSA	3,700	3,200	3,000	11.4	19.1	22.1	5.2	8.1	12.2	9.4	16.5	17.4	4.2	3.5	1.3	—	—	0.6	1.6	1.7	1.8
Parental Education: <sup>e</sup>																					
1.0-2.0 (Low)	1,100	1,300	980	16.0	26.0	21.9	6.7	11.4	10.9	13.5	21.6	17.8	5.8	2.1	1.9	—	—	2.0	2.4	1.6	2.7
2.5-3.0	3,200	3,300	2,800	13.6	23.1	25.3	6.2	8.9	11.9	11.3	20.4	21.5	3.9	2.8	1.6	—	—	0.4	1.7	1.7	2.6
3.5-4.0	3,500	3,700	3,800	10.6	21.6	27.7	4.5	8.6	11.9	8.7	18.1	23.7	4.4	2.7	1.3	—	—	0.4	0.9	2.0	2.1
4.5-5.0	3,800	3,500	3,100	8.3	18.0	24.6	3.7	6.8	10.6	6.2	15.2	20.6	3.5	2.0	1.5	—	—	0.5	0.8	1.0	2.2
5.5-6.0 (High)	2,100	1,700	1,500	7.4	17.9	23.8	3.8	6.5	9.8	5.4	15.5	19.6	2.9	2.0	1.0	—	—	0.9	0.9	2.1	1.7

NOTE: '—' indicates data not available.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Subgroup Ns may vary depending on the number of forms in which the use of each drug was asked about.

<sup>b</sup>12th grade only: Data based on three of six forms; N is one-half of N indicated.

<sup>c</sup>Unadjusted for known underreporting of certain drugs. See text for details.

<sup>d</sup>12th grade only: Data based on one of six forms; N is one-sixth of N indicated.

<sup>e</sup>Parental education is an average score of mother's education and father's education reported on the following scale: (1) Completed grade school or less, (2) Some high school, (3) Completed high school, (4) Some college, (5) Completed college, (6) Graduate or professional school after college. Missing data was allowed on one of the two variables.

(Table continued on next page)

**TABLE 4-7 (cont.)**  
**Thirty-Day Prevalence of Use of Various Drugs by Subgroups**  
**Eighth, Tenth, and Twelfth Graders, 2002**  
(Entries are percentages)

	<u>LSD</u>			Hallucinogens Other Than <u>LSD</u>			<u>PCP</u> <sup>a</sup>			<u>MDMA</u> <sup>b,c</sup>			<u>Cocaine</u>			<u>Crack</u>			<u>Other Cocaine</u> <sup>d</sup>			
	Grade:	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Total		0.7	0.7	0.7	1.0	1.4	2.0	—	—	0.4	1.4	1.8	2.4	1.1	1.6	2.3	0.8	1.0	1.2	0.8	1.3	1.9
Gender:																						
Male		0.8	0.8	1.0	1.2	1.6	3.1	—	—	0.6	1.5	1.6	2.6	1.1	1.8	2.7	0.9	1.1	1.4	0.8	1.5	2.4
Female		0.5	0.6	0.4	0.7	1.2	0.9	—	—	0.3	1.3	1.8	2.1	1.1	1.4	1.8	0.7	0.8	1.0	0.8	1.2	1.4
College Plans:																						
None or under 4 yrs.		2.8	2.1	1.4	3.4	3.7	3.2	—	—	1.3	4.8	4.8	3.3	4.2	4.4	3.4	3.3	2.5	2.2	3.5	3.7	2.9
Complete 4 yrs.		0.4	0.5	0.5	0.7	1.1	1.6	—	—	0.2	1.1	1.3	2.2	0.8	1.2	1.9	0.6	0.7	0.9	0.5	0.9	1.5
Region:																						
Northeast		0.6	0.7	1.1	0.7	1.4	2.8	—	—	0.8	0.8	1.7	3.2	0.9	0.9	2.3	0.7	0.6	1.0	0.6	0.7	2.1
North Central		0.8	0.7	0.8	0.9	1.3	1.7	—	—	0.3	1.1	1.5	1.8	1.0	1.3	2.3	0.9	0.8	1.3	0.8	1.0	2.2
South		0.6	0.5	0.6	1.0	1.1	1.6	—	—	0.6	1.9	1.9	2.7	1.0	1.7	2.6	0.7	0.8	1.1	0.9	1.4	2.0
West		0.6	1.0	0.4	1.2	2.1	2.3	—	—	0.0	1.3	2.1	1.9	1.3	2.7	1.8	1.0	1.9	1.4	1.0	2.3	1.4
Population Density:																						
Large MSA		0.6	0.8	0.7	0.8	1.7	2.0	—	—	1.1	1.2	1.7	2.2	1.0	1.5	1.8	0.8	0.7	0.9	0.6	1.2	1.5
Other MSA		0.7	0.6	0.8	0.9	1.2	2.3	—	—	0.1	1.6	1.8	3.1	1.0	1.7	2.5	0.7	1.1	1.1	0.7	1.4	2.0
Non-MSA		0.7	0.8	0.5	1.3	1.6	1.5	—	—	0.3	1.1	1.9	1.5	1.3	1.7	2.6	1.0	1.1	1.6	1.1	1.4	2.4
Parental Education: <sup>e</sup>																						
1.0-2.0 (Low)		2.0	0.7	1.0	1.7	1.2	2.3	—	—	1.6	3.3	2.0	2.5	2.3	2.6	2.6	1.8	1.3	2.6	1.6	2.3	2.1
2.5-3.0		0.8	0.6	0.9	1.4	1.5	2.3	—	—	0.7	1.7	2.1	2.9	1.3	1.6	2.7	1.0	0.9	1.3	1.1	1.4	2.4
3.5-4.0		0.4	0.8	0.6	0.7	1.7	2.0	—	—	0.2	1.5	2.3	1.7	0.9	1.7	2.6	0.5	1.0	1.3	0.8	1.4	2.1
4.5-5.0		0.4	0.5	0.5	0.8	0.9	2.0	—	—	0.3	1.1	1.1	2.9	0.7	1.0	2.0	0.6	0.5	0.8	0.5	0.8	1.6
5.5-6.0 (High)		0.4	0.9	0.7	0.8	1.7	1.6	—	—	0.2	0.1	2.0	2.3	0.8	1.5	1.5	0.7	1.1	0.4	0.4	0.9	1.3

NOTE: '—' indicates data not available.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>12th grade only: Data based on one of six forms; N is one-sixth of N indicated.

<sup>b</sup>12th grade only: Data based on two of six forms; N is two-sixths of N indicated.

<sup>c</sup>8th and 10th grades only: Data based two of four forms; N is one-half of N indicated.

<sup>d</sup>12th grade only: Data based on four of six forms; N is four-sixths of N indicated.

<sup>e</sup>Parental education is an average score of mother's education and father's education reported on the following scale: (1) Completed grade school or less, (2) Some high school, (3) Completed high school, (4) Some college, (5) Completed college, (6) Graduate or professional school after college. Missing data was allowed on one of the two variables.

(Table continued on next page)

**TABLE 4-7 (cont.)**  
**Thirty-Day Prevalence of Use of Various Drugs by Subgroups**  
**Eighth, Tenth, and Twelfth Graders, 2002**  
(Entries are percentages)

Grade:	Heroin <u>Any Use</u>			Heroin with <u>a Needle</u> <sup>a</sup>			Heroin without <u>a Needle</u> <sup>a</sup>			<u>Other Narcotics</u> <sup>b,c</sup>			<u>Amphetamines</u> <sup>b</sup>			<u>Meth-</u> <u>amphetamine</u> <sup>d,e</sup>			<u>Crystal Meth.</u> <u>(Ice)</u> <sup>e</sup>			<u>Sedatives</u> <u>(Barbiturates)</u> <sup>b</sup>		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Total	0.5	0.5	0.5	0.3	0.3	0.3	0.3	0.4	0.5	—	—	3.1	2.8	5.2	5.5	1.1	1.8	1.7	—	—	1.2	—	—	3.2
Gender:																								
Male	0.5	0.6	0.6	0.3	0.3	0.3	0.3	0.4	0.4	—	—	3.5	2.4	4.4	5.3	1.0	1.8	2.2	—	—	1.5	—	—	3.5
Female	0.5	0.3	0.4	0.3	0.2	0.1	0.3	0.3	0.5	—	—	2.7	3.2	5.9	5.3	1.2	1.8	1.2	—	—	0.9	—	—	2.7
College Plans:																								
None or under 4 yrs.	1.4	1.4	1.4	0.9	1.0	0.7	1.0	1.2	1.4	—	—	4.4	6.8	9.2	8.1	3.6	5.3	3.7	—	—	2.4	—	—	5.0
Complete 4 yrs.	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	—	—	2.6	2.4	4.6	4.7	0.8	1.3	1.2	—	—	0.9	—	—	2.7
Region:																								
Northeast	0.3	0.5	0.6	0.2	0.2	0.5	0.2	0.4	0.4	—	—	3.4	1.9	4.3	5.2	0.5	0.7	0.2	—	—	1.4	—	—	3.0
North Central	0.6	0.4	0.7	0.5	0.2	0.3	0.3	0.4	0.5	—	—	3.2	2.8	4.6	5.4	1.4	1.2	2.1	—	—	0.8	—	—	2.6
South	0.5	0.4	0.6	0.2	0.3	0.3	0.4	0.2	0.7	—	—	3.5	3.5	6.0	5.9	1.3	2.3	2.1	—	—	1.5	—	—	4.2
West	0.5	0.8	0.3	0.2	0.7	0.1	0.3	0.5	0.2	—	—	2.2	2.7	5.3	5.0	0.8	2.8	1.8	—	—	1.0	—	—	2.6
Population Density:																								
Large MSA	0.4	0.4	0.5	0.2	0.2	0.2	0.3	0.3	0.4	—	—	2.7	2.2	4.5	5.5	0.7	1.9	0.7	—	—	0.9	—	—	2.9
Other MSA	0.4	0.4	0.6	0.3	0.3	0.3	0.2	0.3	0.7	—	—	3.4	3.2	5.6	4.9	1.0	2.0	2.1	—	—	1.3	—	—	3.1
Non-MSA	0.7	0.8	0.5	0.5	0.5	0.3	0.5	0.6	0.2	—	—	3.3	2.9	5.2	6.5	1.6	1.4	2.1	—	—	1.4	—	—	3.8
Parental Education: <sup>f</sup>																								
1.0-2.0 (Low)	0.6	1.0	1.4	0.5	0.6	0.4	0.1	0.7	1.0	—	—	2.3	3.2	6.9	3.9	2.0	2.7	2.2	—	—	2.3	—	—	3.3
2.5-3.0	0.6	0.2	0.5	0.4	0.1	0.4	0.4	0.1	0.4	—	—	2.6	4.0	6.0	5.9	2.0	1.9	2.5	—	—	1.8	—	—	3.3
3.5-4.0	0.6	0.7	0.6	0.3	0.5	0.4	0.4	0.5	0.7	—	—	4.1	2.8	5.6	6.0	0.6	1.6	1.7	—	—	0.9	—	—	3.5
4.5-5.0	0.4	0.3	0.3	0.2	0.1	0.1	0.3	0.2	0.1	—	—	3.3	2.4	4.4	4.9	0.8	1.5	1.4	—	—	0.5	—	—	3.0
5.5-6.0 (High)	0.3	0.9	0.3	0.3	0.7	*	0.1	0.6	0.3	—	—	2.1	2.2	4.0	5.3	0.7	2.4	0.7	—	—	1.2	—	—	3.0

NOTES: '—' indicates data not available. '\*' indicates less than .05 percent but greater than 0 percent.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>12th grade only: Data based on three of six forms; N is one-half of N indicated.

<sup>b</sup>Only drug use not under a doctor's orders is included here.

<sup>c</sup>12th grade only: Data based on three of six forms; N is one-half of N indicated.

<sup>d</sup>8th and 10th grades only: Data based on one of four forms; N is one-third of N indicated.

<sup>e</sup>12th grade only: Data based on two of six forms; N is two-sixths of N indicated.

<sup>f</sup>Parental education is an average score of mother's education and father's education reported on the following scale: (1) Completed grade school or less, (2) Some high school, (3) Completed high school, (4) Some college, (5) Completed college, (6) Graduate or professional school after college. Missing data was allowed on one of the two variables.

(Table continued on next page)

**TABLE 4-7 (cont.)**  
**Thirty-Day Prevalence of Use of Various Drugs by Subgroups**  
**Eighth, Tenth, and Twelfth Graders, 2002**  
(Entries are percentages)

	<u>Methaqualone<sup>a,b</sup></u>			<u>Tranquilizers<sup>a</sup></u>			<u>Rohypnol<sup>c</sup></u>			<u>Alcohol</u>			<u>Been Drunk<sup>d</sup></u>			<u>Cigarettes</u>			<u>Smokeless Tobacco<sup>b,e</sup></u>			<u>Steroids<sup>d</sup></u>			
	Grade:	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Total	—	—	0.3	1.2	2.9	3.3	0.2	0.4	—	19.6	35.4	48.6	6.7	18.3	30.3	10.7	17.7	26.7	3.3	6.1	6.5	0.8	1.0	1.4	
Gender:																									
Male	—	—	0.5	1.0	2.6	3.5	0.0	0.2	—	19.1	35.3	52.3	7.1	19.3	34.3	11.0	16.7	27.4	5.4	9.9	12.2	1.0	1.6	2.2	
Female	—	—	0.1	1.2	3.1	3.0	0.2	0.5	—	20.0	35.7	45.1	6.3	17.4	26.9	10.4	18.6	25.5	1.3	2.1	1.2	0.6	0.4	0.6	
College Plans:																									
None or under 4 yrs.	—	—	0.5	3.5	5.7	4.5	0.7	0.0	—	35.3	47.1	53.0	15.5	27.4	31.7	29.3	33.3	37.5	10.2	13.6	10.8	2.4	1.4	2.2	
Complete 4 yrs.	—	—	0.2	0.9	2.4	3.0	0.1	0.4	—	18.2	33.5	47.4	5.9	16.8	29.3	8.9	15.1	23.6	2.6	4.8	4.8	0.6	1.0	1.0	
Region:																									
Northeast	—	—	0.4	0.8	2.1	2.7	0.1	0.3	—	19.3	36.3	50.9	5.3	18.1	33.6	9.1	15.9	27.3	2.7	4.7	5.3	0.8	1.0	1.2	
North Central	—	—	0.6	1.0	2.4	2.3	0.3	0.0	—	19.1	35.7	52.1	7.0	18.7	35.0	11.0	19.2	31.7	3.9	4.8	7.8	1.1	0.8	1.6	
South	—	—	0.0	1.6	3.6	5.3	0.2	0.1	—	21.6	33.7	46.8	7.6	17.5	28.4	13.0	19.6	27.2	4.1	8.3	7.9	0.7	1.2	1.0	
West	—	—	0.5	0.9	2.9	2.0	0.0	1.4	—	17.0	37.2	45.0	5.9	19.5	25.0	7.5	14.1	19.4	1.5	5.1	3.9	0.5	1.1	1.8	
Population Density:																									
Large MSA	—	—	0.1	0.8	2.1	3.0	0.1	0.2	—	17.4	32.0	50.3	5.2	16.5	32.9	7.5	14.2	24.8	1.5	4.5	3.4	0.5	0.9	0.7	
Other MSA	—	—	0.0	1.2	3.3	3.7	0.2	0.5	—	20.1	35.2	48.8	7.3	18.0	29.1	10.6	17.6	26.2	2.9	6.1	5.7	0.8	1.2	1.7	
Non-MSA	—	—	1.3	1.5	3.0	3.2	0.3	0.3	—	21.4	40.4	45.9	7.3	21.4	29.2	14.9	22.6	30.1	6.2	8.2	11.9	1.1	1.0	1.6	
Parental Education: <sup>f</sup>																									
1.0-2.0 (Low)	—	—	0.7	2.0	3.7	2.5	0.9	0.3	—	27.6	38.2	42.2	10.5	17.3	20.0	20.3	21.4	20.9	4.5	6.7	4.1	1.2	0.7	2.7	
2.5-3.0	—	—	0.1	1.9	3.4	3.3	0.0	0.2	—	23.2	38.0	47.9	8.5	19.9	27.0	14.5	22.4	28.9	5.1	8.1	5.6	1.0	0.9	1.2	
3.5-4.0	—	—	0.3	0.9	3.3	3.6	0.0	0.7	—	21.2	36.4	50.9	6.7	19.5	32.4	10.5	17.4	28.6	3.2	5.5	7.4	0.8	1.4	1.5	
4.5-5.0	—	—	0.0	0.9	2.4	3.2	0.4	0.5	—	17.0	33.7	48.9	5.5	17.4	31.0	7.8	15.1	25.0	2.4	5.4	7.3	0.4	0.8	1.5	
5.5-6.0 (High)	—	—	0.0	0.7	2.0	3.5	0.1	0.0	—	15.1	32.0	51.1	4.8	16.8	34.5	5.8	12.7	25.3	2.5	5.2	4.6	0.8	1.6	0.4	

NOTES: '—' indicates data not available. '\*\*' indicates less than .05 percent but greater than 0 percent.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Only drug use not under a doctor's orders is included here.

<sup>b</sup>For 12th grade only: Data based on one of six forms; N is one-sixth of N indicated.

<sup>c</sup>8th and 10th grades only: Data based on one of four forms; N is one-sixth of N indicated.

<sup>d</sup>12th grade only: Data based on two of six forms; N is two-sixths of N indicated.

<sup>e</sup>8th and 10th grades only: Data based on two of four forms; N is one-half of N indicated.

<sup>f</sup>Parental education is an average score of mother's education and father's education reported on the following scale: (1) Completed grade school or less, (2) Some high school, (3) Completed high school, (4) Some college, (5) Completed college, (6) Graduate or professional school after college. Missing data was allowed on one of the two variables.



**TABLE 4-8**

**Thirty-Day Prevalence of Daily Use of Marijuana, Alcohol, and Tobacco by Subgroups  
Eighth, Tenth, and Twelfth Graders, 2002**

		Percentage who used daily in last thirty days																			
		Marijuana			Alcohol						Cigarettes						Smokeless Tobacco <sup>a</sup>				
		<u>Approx. N<sup>b</sup></u>			<u>Daily</u>			<u>Daily</u>			<u>5+ drinks<sup>c</sup></u>			<u>One or more daily</u>			<u>Half-pack or more daily</u>			<u>Daily</u>	
Grade:	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Total	15,100	14,300	12,900	1.2	3.9	6.0	0.7	1.8	3.5	12.4	22.4	28.6	5.1	10.1	16.9	2.1	4.4	9.1	0.8	1.7	2.0
Gender:																					
Male	7,000	6,900	5,800	1.7	5.1	8.7	0.8	2.6	5.3	12.5	23.8	34.2	5.4	9.4	17.2	2.4	4.1	10.0	1.5	3.0	4.3
Female	7,600	7,100	6,600	0.7	2.6	3.1	0.4	1.0	1.7	12.1	21.0	23.0	4.9	10.8	16.1	1.9	4.6	7.9	0.2	0.2	0.0
College Plans:																					
None or under 4 yrs.	1,300	2,000	2,400	5.1	9.4	10.3	2.8	3.7	4.8	28.1	34.3	34.0	17.1	22.9	27.6	8.4	11.5	17.5	4.5	4.6	2.4
Complete 4 yrs.	13,400	12,100	9,700	0.8	2.9	4.6	0.5	1.4	3.1	10.9	20.4	27.2	3.9	7.9	13.8	1.5	3.1	6.7	0.5	1.0	1.4
Region:																					
Northeast	2,800	2,600	2,500	1.2	3.6	7.4	0.7	1.4	2.8	10.0	21.4	30.7	3.7	8.3	18.4	1.7	3.7	10.9	0.6	0.8	1.6
North Central	4,000	3,700	3,300	1.0	4.2	6.2	0.7	1.7	4.6	12.1	22.1	33.4	5.7	11.5	22.5	2.7	4.8	13.6	1.1	1.3	2.2
South	5,400	5,100	4,300	1.6	3.2	5.6	0.8	1.8	3.3	14.0	21.8	26.8	6.6	11.3	16.6	2.5	5.5	8.6	1.0	2.6	2.4
West	2,900	2,900	2,800	1.0	5.2	5.1	0.4	2.0	3.0	12.1	24.9	23.9	2.9	7.8	9.5	0.9	2.5	3.1	0.2	1.1	1.3
Population Density:																					
Large MSA	4,500	4,300	4,000	1.0	3.4	6.0	0.4	1.4	3.4	10.8	19.4	29.9	3.2	7.4	15.0	1.3	3.0	7.6	0.4	1.3	0.4
Other MSA	6,900	6,800	5,900	1.3	4.4	6.1	0.8	1.8	3.2	12.6	22.7	28.0	5.1	10.4	16.7	2.2	4.7	8.7	0.6	1.4	2.0
Non-MSA	3,700	3,200	3,000	1.4	3.7	5.6	0.8	2.1	4.2	13.9	26.2	28.2	7.6	13.1	19.8	3.1	5.7	11.9	1.8	2.6	3.8
Parental Education: <sup>d</sup>																					
1.0-2.0 (Low)	1,100	1,300	980	2.3	4.6	4.5	1.1	2.0	2.5	19.5	26.7	22.2	10.6	14.1	12.4	4.6	7.4	7.4	2.2	1.7	2.2
2.5-3.0	3,200	3,300	2,800	1.7	4.9	7.0	0.8	2.1	3.4	15.2	25.1	28.5	7.1	14.7	19.8	2.8	7.0	12.0	1.0	1.2	1.7
3.5-4.0	3,500	3,700	3,800	1.4	3.9	6.7	0.7	1.5	3.7	13.2	22.7	28.6	5.4	10.0	19.1	2.2	4.0	10.3	1.0	2.0	2.1
4.5-5.0	3,800	3,500	3,100	0.7	2.7	4.8	0.5	1.6	3.1	9.8	19.1	30.9	3.3	6.8	14.1	1.2	2.4	6.8	0.3	1.5	2.4
5.5-6.0 (High)	2,100	1,700	1,500	0.4	3.2	4.6	0.4	1.8	4.0	8.8	20.6	30.6	2.1	6.4	14.3	1.1	2.0	5.4	0.9	1.3	0.2

NOTE: \* indicates less than .05 percent but greater than 0 percent.  
SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>8th and 10th grades only: Data based on two of four forms; N is one-half of N indicated. 12th grade only: Data based on one of six forms; N is one-sixth of N indicated.

<sup>b</sup>Subgroup Ns may vary depending on the number of forms in which the use of each drug was asked about.

<sup>c</sup>This measure refers to having five or more drinks in a row in the last two weeks.

<sup>d</sup>Parental education is an average score of mother's education and father's education reported on the following scale: (1) Completed grade school or less, (2) Some high school, (3) Completed high school, (4) Some college, (5) Completed college, (6) Graduate or professional school after college. Missing data was allowed on one of the two variables.

**TABLE 4-9**

**Racial/Ethnic Comparisons of Lifetime, Annual, Thirty-Day,  
and Daily Prevalence of Use of Various Drugs  
Eighth, Tenth, and Twelfth Graders**

**NOTE: Percentages are based on 2001 and 2002 data combined.<sup>a</sup>**

Grade:	<u>Any Illicit Drug<sup>b</sup></u>			<u>Any Illicit Drug Other Than Marijuana<sup>b</sup></u>			<u>Marijuana</u>			<u>Inhalants<sup>c,d</sup></u>			<u>Hallucinogens<sup>d</sup></u>			<u>LSD</u>			<u>Hallucinogens Other Than LSD</u>			<u>MDMA<sup>e,f</sup></u>			<u>Cocaine</u>		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Lifetime:																											
White	24.0	45.1	55.2	15.4	25.0	33.2	18.0	39.3	49.9	16.6	15.7	14.2	4.9	9.6	15.4	3.1	6.4	11.3	3.8	7.5	11.3	4.0	7.9	11.6	3.6	5.9	8.6
Black	24.7	41.5	45.1	9.0	8.4	11.4	20.2	38.1	41.7	12.4	7.4	5.9	1.4	1.6	2.4	0.9	1.0	1.5	0.9	1.3	1.4	2.4	2.4	2.7	1.6	1.4	1.4
Hispanic	34.7	48.2	53.0	21.0	24.9	26.9	27.4	41.9	47.6	18.3	13.9	9.9	5.5	8.0	10.0	4.1	5.5	7.3	4.0	5.9	7.3	8.7	6.7	9.4	7.2	10.1	10.6
Annual:																											
White	18.3	37.6	43.6	10.3	19.1	23.8	14.5	32.7	38.7	9.1	7.1	5.2	3.2	6.3	8.8	2.0	3.8	5.8	2.4	4.8	6.4	2.9	6.2	8.5	2.4	3.9	5.7
Black	15.1	28.5	30.4	4.2	4.6	7.2	12.7	26.5	27.8	5.0	2.4	1.9	0.6	1.2	1.6	0.4	0.6	0.8	0.5	1.0	0.8	1.1	1.8	1.7	0.8	1.0	0.9
Hispanic	24.8	36.2	39.0	12.5	16.2	17.8	21.1	31.6	34.6	9.9	4.8	3.4	3.5	4.5	6.3	2.4	2.9	3.8	2.6	3.4	4.4	5.9	4.3	7.0	4.1	6.0	5.5
30-Day:																											
White	10.6	22.9	27.2	5.2	9.4	12.5	8.3	19.8	23.3	4.0	2.6	1.6	1.4	2.0	3.1	0.8	1.1	1.6	1.1	1.5	2.2	1.4	2.4	2.6	1.0	1.4	2.5
Black	9.1	16.2	18.2	2.7	2.3	3.9	7.4	15.2	16.5	2.7	1.2	1.3	0.4	0.6	0.7	0.3	0.4	0.3	0.3	0.5	0.4	0.8	0.7	0.6	0.4	0.4	0.4
Hispanic	15.3	21.4	23.4	6.8	8.1	8.9	12.6	18.2	20.0	4.8	2.4	1.5	1.6	1.9	2.0	1.0	1.2	1.4	1.3	1.6	1.5	2.4	1.7	2.8	2.1	2.4	2.2
Daily:																											
White	—	—	—	—	—	—	1.3	4.4	6.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Black	—	—	—	—	—	—	1.2	3.0	3.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hispanic	—	—	—	—	—	—	1.5	3.9	4.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

NOTES: '—' indicates data not available.  
The following sample sizes are based on the 2001 and 2002 surveys combined:

Sample Sizes:	<u>8th Grade</u>	<u>10th Grade</u>	<u>12th Grade</u>
White	17,600	18,000	16,300
Black	4,500	3,400	2,900
Hispanic	3,900	3,600	3,100

SOURCE: The Monitoring the Future Study, the University of Michigan.

(Table continued on next page)

**TABLE 4-9 (cont.)**

**Racial/Ethnic Comparisons of Lifetime, Annual, Thirty-Day,  
and Daily Prevalence of Use of Various Drugs  
Eighth, Tenth, and Twelfth Graders**

**NOTE: Percentages are based on 2001 and 2002 data combined.<sup>a</sup>**

Grade:	<u>Crack</u>			<u>Other Cocaine<sup>g</sup></u>			<u>Heroin</u>			<u>Heroin with a Needle<sup>c</sup></u>			<u>Heroin without a Needle<sup>c</sup></u>			<u>Other Narcotics<sup>ch</sup></u>			<u>Amphetamines<sup>h</sup></u>			<u>Meth- amphetamine<sup>fi</sup></u>			<u>Crystal Meth. (Ice)<sup>f</sup></u>		
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th
Lifetime:																											
White	2.4	3.1	3.7	2.8	5.1	7.9	1.5	1.7	1.9	1.1	0.8	0.5	1.0	1.3	1.7	—	—	12.6	10.6	18.1	19.3	4.5	6.6	7.6	—	—	4.2
Black	1.2	0.9	1.0	1.0	1.0	1.0	1.0	0.5	0.9	0.7	0.4	0.7	0.6	0.4	0.5	—	—	2.5	5.5	5.8	5.1	1.0	1.4	1.5	—	—	2.7
Hispanic	4.7	6.1	5.6	5.6	8.5	9.3	2.3	2.2	1.5	1.3	1.3	0.5	1.6	1.7	1.4	—	—	7.7	10.1	12.1	12.8	5.0	8.0	6.0	—	—	5.9
Annual:																											
White	1.5	2.0	2.3	1.8	3.3	5.1	1.0	1.0	1.0	0.7	0.5	0.2	0.6	0.8	1.0	—	—	9.0	7.2	13.4	13.2	2.8	4.1	4.2	—	—	2.6
Black	0.6	0.8	0.7	0.5	0.7	0.8	0.6	0.3	0.5	0.5	0.2	0.2	0.3	0.3	0.4	—	—	1.3	2.7	3.5	2.9	0.6	1.1	0.5	—	—	1.6
Hispanic	2.7	3.6	3.1	3.1	5.0	4.7	1.2	1.1	0.8	0.7	0.7	0.4	1.0	0.8	0.5	—	—	4.6	5.9	7.9	7.9	3.2	4.4	3.9	—	—	3.6
30-Day:																											
White	0.7	0.7	1.2	0.8	1.2	2.2	0.5	0.4	0.4	0.3	0.2	0.1	0.3	0.3	0.4	—	—	3.7	3.5	6.5	6.6	1.4	1.8	1.9	—	—	1.1
Black	0.4	0.3	0.4	0.3	0.4	0.2	0.3	0.2	0.3	0.3	0.1	0.2	0.2	0.2	0.3	—	—	0.7	1.5	1.5	1.5	0.3	0.5	0.2	—	—	1.1
Hispanic	1.4	1.5	1.8	1.8	2.0	1.6	0.7	0.5	0.4	0.3	0.4	0.2	0.5	0.3	0.3	—	—	1.8	2.9	3.5	3.8	1.2	1.7	1.7	—	—	1.3
Daily:																											
White	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Black	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hispanic	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

NOTE: '—' indicates data not available.

SOURCE: The Monitoring the Future Study, the University of Michigan.

(Table continued on next page)

**TABLE 4-9 (cont.)**

**Racial/Ethnic Comparisons of Lifetime, Annual, Thirty-Day,  
and Daily Prevalence of Use of Various Drugs  
Eighth, Tenth, and Twelfth Graders**

**NOTE: Percentages are based on 2001 and 2002 data combined.<sup>a</sup>**

Grade:	Sedatives (Barbiturates) <sup>h</sup>			Methaqualone <sup>h,j</sup>			Tranquilizers <sup>h</sup>			Alcohol			Been Drunk <sup>f</sup>			5+ Drinks <sup>k</sup>			Cigarettes			Smokeless Tobacco <sup>e,j</sup>			Steroids <sup>f</sup>			
	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	8th	10th	12th	
Lifetime:																												
White	—	—	10.8	—	—	1.3	4.6	10.8	12.9	48.4	69.9	81.2	23.6	50.2	67.6	—	—	—	33.2	52.4	62.9	13.4	21.8	25.1	2.8	3.7	3.9	
Black	—	—	2.4	—	—	0.1	2.1	2.1	3.2	48.0	61.1	68.5	16.2	28.2	39.3	—	—	—	33.6	39.7	42.5	5.7	7.7	3.2	2.5	2.0	2.6	
Hispanic	—	—	6.5	—	—	1.1	7.4	7.5	8.7	57.4	71.8	80.4	27.6	45.5	60.8	—	—	—	39.1	48.0	57.5	9.8	11.8	8.2	2.7	3.5	3.1	
Annual:																												
White	—	—	7.5	—	—	0.8	2.9	8.4	8.8	41.4	64.5	75.6	17.3	42.7	58.1	—	—	—	—	—	—	—	—	—	1.7	2.4	2.5	
Black	—	—	1.4	—	—	0.1	0.7	1.2	1.6	34.6	49.6	57.7	10.0	18.1	26.7	—	—	—	—	—	—	—	—	—	1.2	1.2	1.0	
Hispanic	—	—	4.5	—	—	0.7	3.6	4.9	5.1	47.8	63.4	72.6	18.5	34.5	45.2	—	—	—	—	—	—	—	—	—	1.5	2.1	2.2	
30-Day:																												
White	—	—	3.6	—	—	0.3	1.3	3.6	3.8	21.5	40.0	54.0	8.0	23.2	36.6	—	—	—	12.0	22.4	32.5	4.1	7.8	9.7	0.8	1.1	1.3	
Black	—	—	0.5	—	—	0.1	0.4	0.5	0.6	14.8	24.3	30.1	4.0	8.6	12.1	—	—	—	7.7	9.8	12.1	1.6	2.6	1.0	0.6	0.4	0.6	
Hispanic	—	—	2.1	—	—	0.6	1.4	2.1	1.9	26.5	37.9	47.5	8.4	17.4	23.5	—	—	—	12.8	14.3	21.3	4.0	4.0	2.6	0.5	1.1	1.2	
Daily:																												
White	—	—	—	—	—	—	—	—	—	0.7	1.8	3.8	0.2	0.6	1.3	12.7	25.5	33.7	6.0	13.3	21.8	1.0	2.3	3.5	—	—	—	
Black	—	—	—	—	—	—	—	—	—	0.5	1.2	1.6	0.2	0.6	1.4	9.4	12.4	11.5	2.8	5.0	6.4	0.5	0.8	0.1	—	—	—	
Hispanic	—	—	—	—	—	—	—	—	—	1.3	2.4	3.3	0.4	0.6	0.6	17.8	26.5	26.4	4.4	6.4	9.2	0.8	0.5	0.3	—	—	—	

NOTE: '—' indicates data not available.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>To derive percentages for each racial subgroup, data for the specified year *and* the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

<sup>b</sup>8th and 10th grades only: The use of other narcotics and barbiturates has been excluded, because these younger respondents appear to overreport use (perhaps because they include the use of nonprescription drugs in their answers). 12th grade only: Use of "any illicit drug" includes any use of marijuana, LSD, other hallucinogens, crack, other cocaine, or heroin, or any use of other narcotics, amphetamines, barbiturates, or tranquilizers not under a doctor's orders.

<sup>c</sup>12th grade only: Data based on three of six forms; N is one-half of N indicated.

<sup>d</sup>Unadjusted for known underreporting of certain drugs. See text for details.

<sup>e</sup>8th and 10th grades only: Data based on two of four forms; N is one-half of N indicated.

<sup>f</sup>12th grade only: Data based on two of six forms; N is two-sixths of N indicated.

<sup>g</sup>12th grade only: Data based on four of six forms; N is four-sixths of N indicated.

<sup>h</sup>Only drug use not under a doctor's orders is included here.

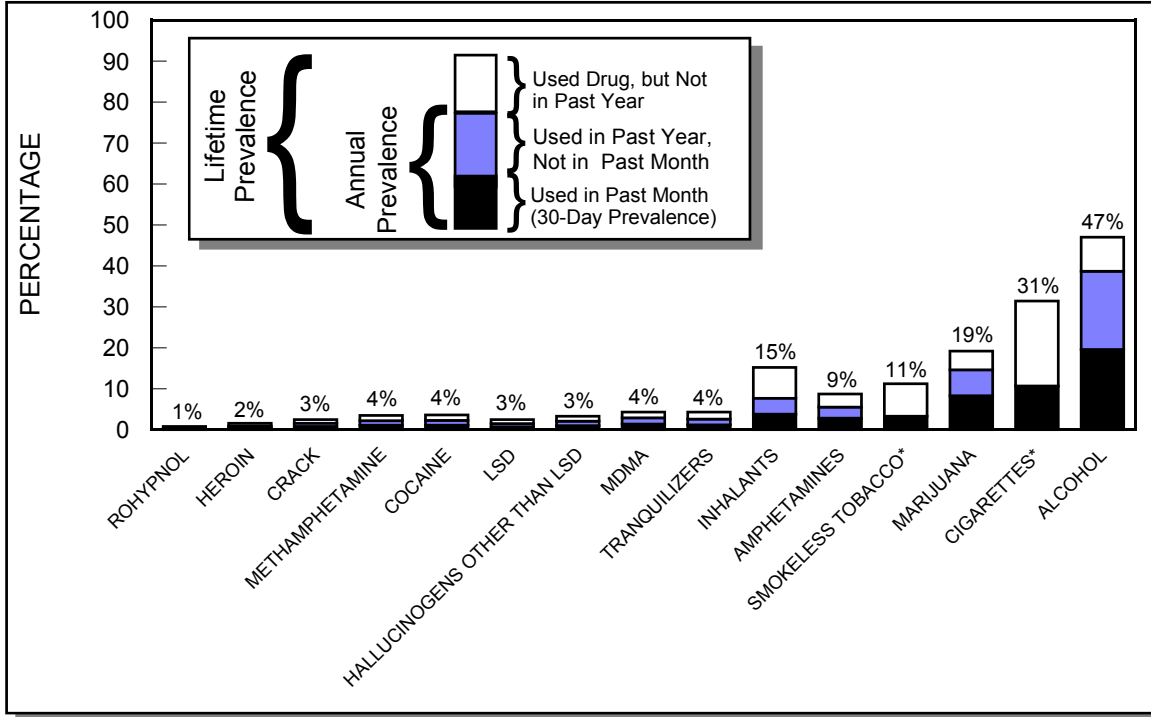
<sup>i</sup>8th and 10th grades only: Data based on one form; N is one-third of N indicated.

<sup>j</sup>12th grade only: Data based on one of six forms; N is one-sixth of N indicated.

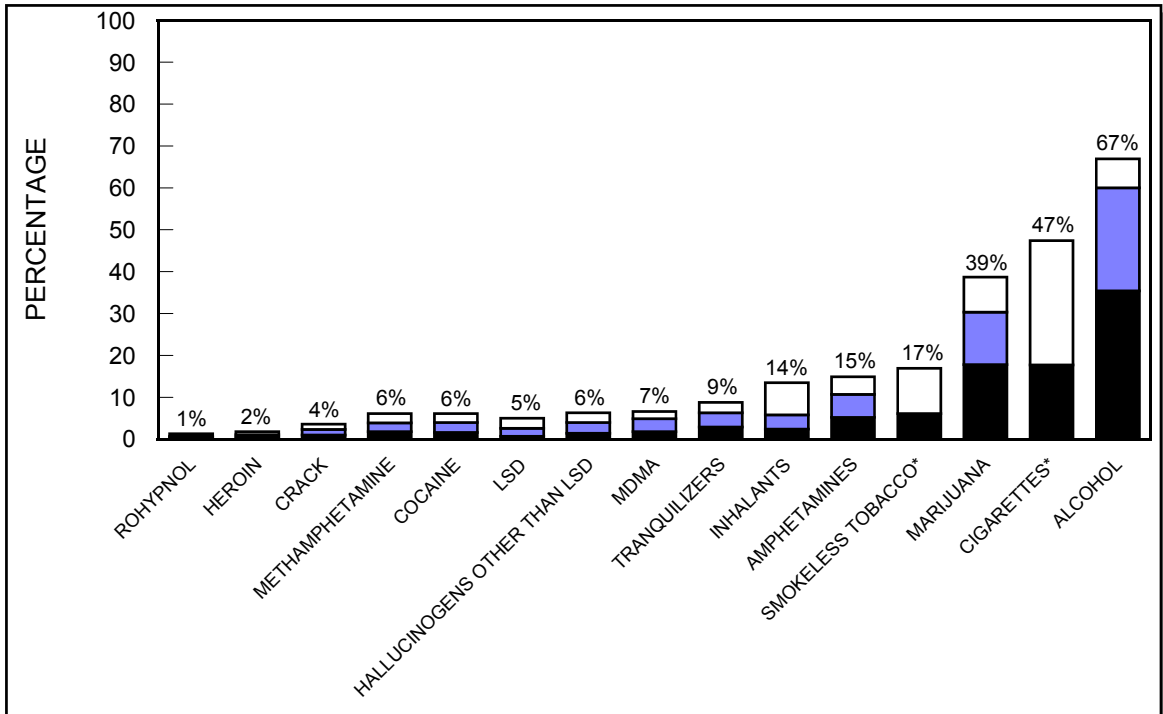
<sup>k</sup>This measure refers to having five or more drinks in a row in the last two weeks.

**FIGURE 4-1**  
**Prevalence and Recency of Use**  
**Various Types of Drugs for Eighth, Tenth, and Twelfth Graders, 2002**

**Eighth Graders**

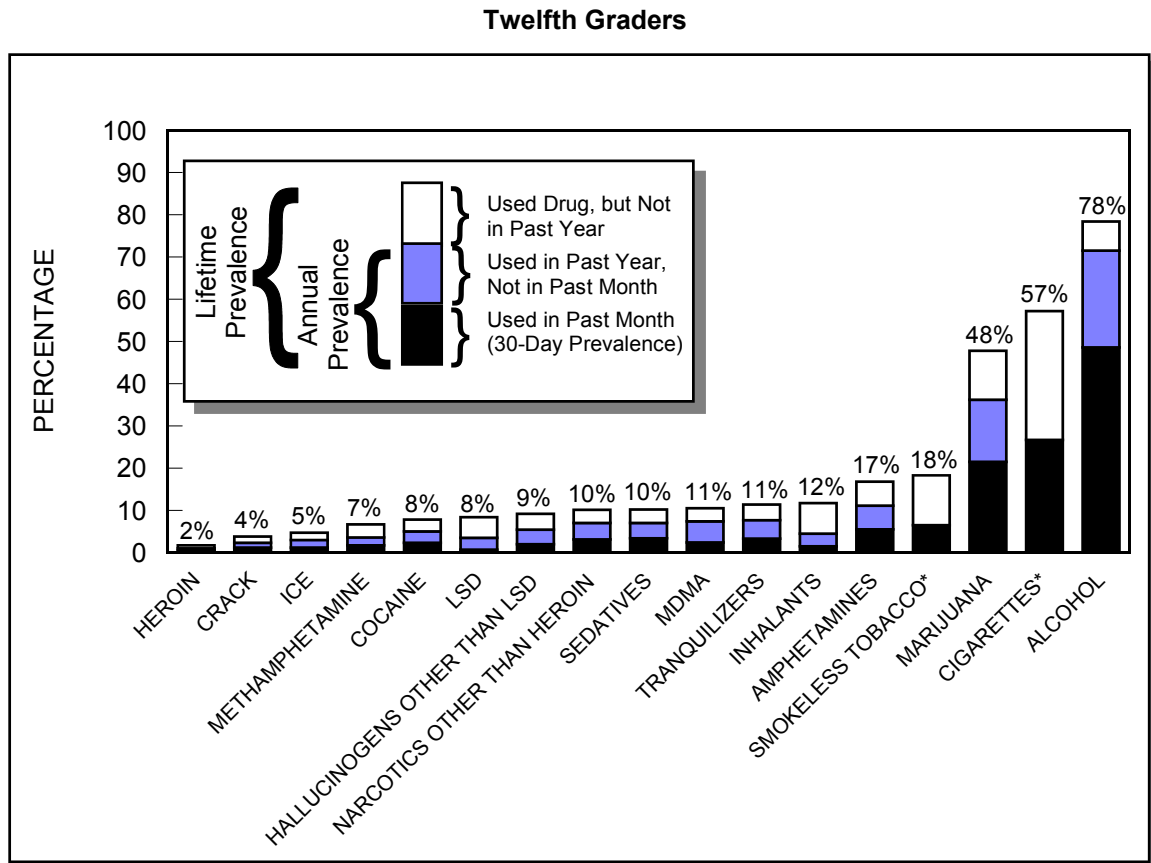


**Tenth Graders**



\*Annual use not measured for cigarettes and smokeless tobacco.

FIGURE 4-1 (cont.)  
**Prevalence and Recency of Use**  
**Various Types of Drugs for Eighth, Tenth, and Twelfth Graders, 2002**



\*Annual use not measured for cigarettes and smokeless tobacco.

FIGURE 4-2  
Thirty-Day Prevalence of Daily Use of  
Various Types of Drugs for Twelfth Graders, 2002

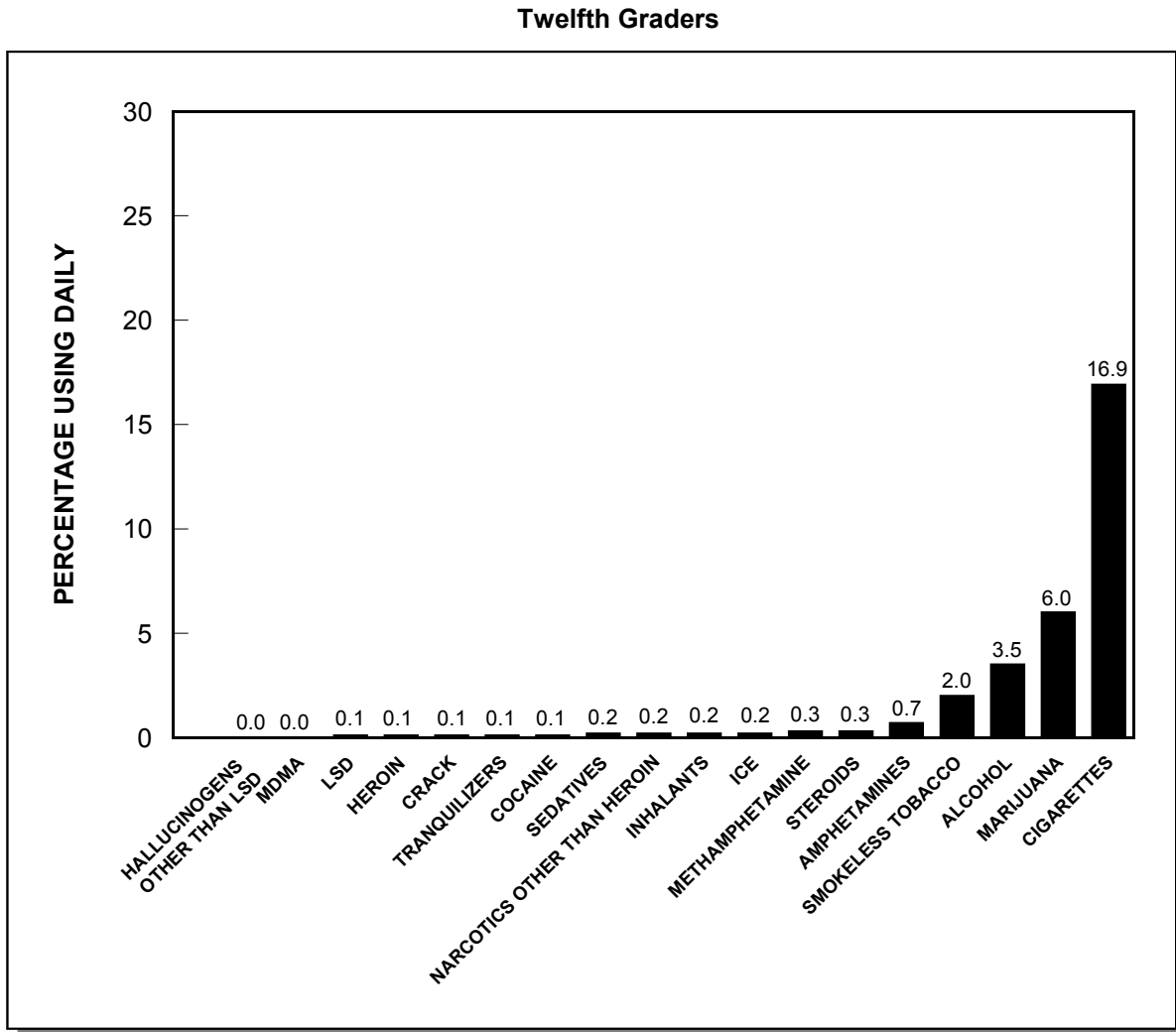
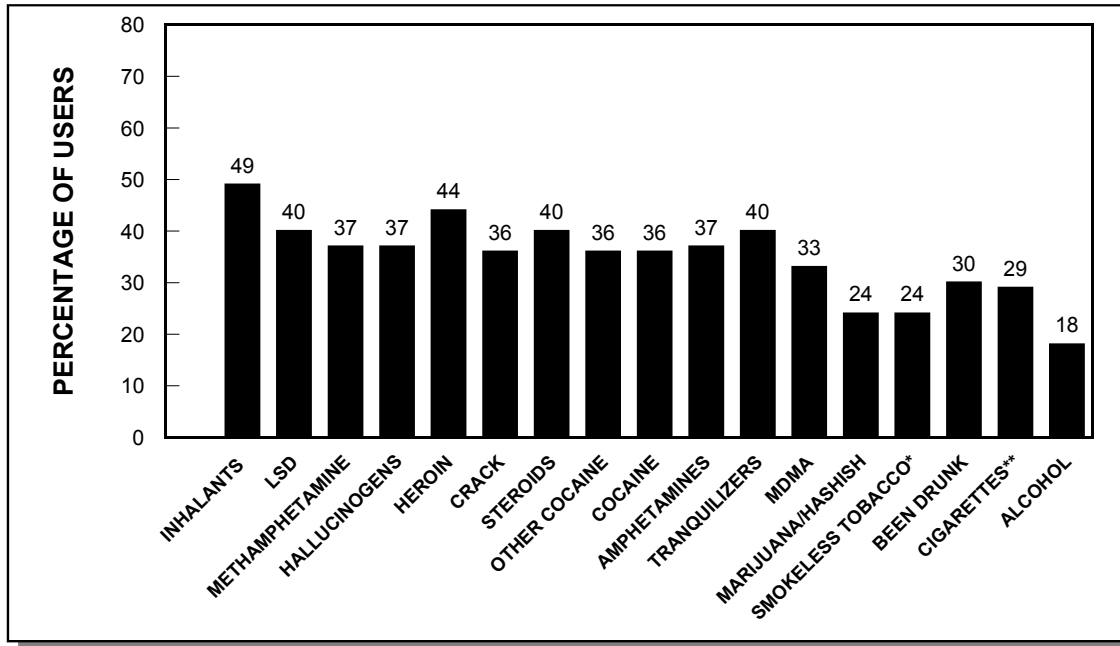


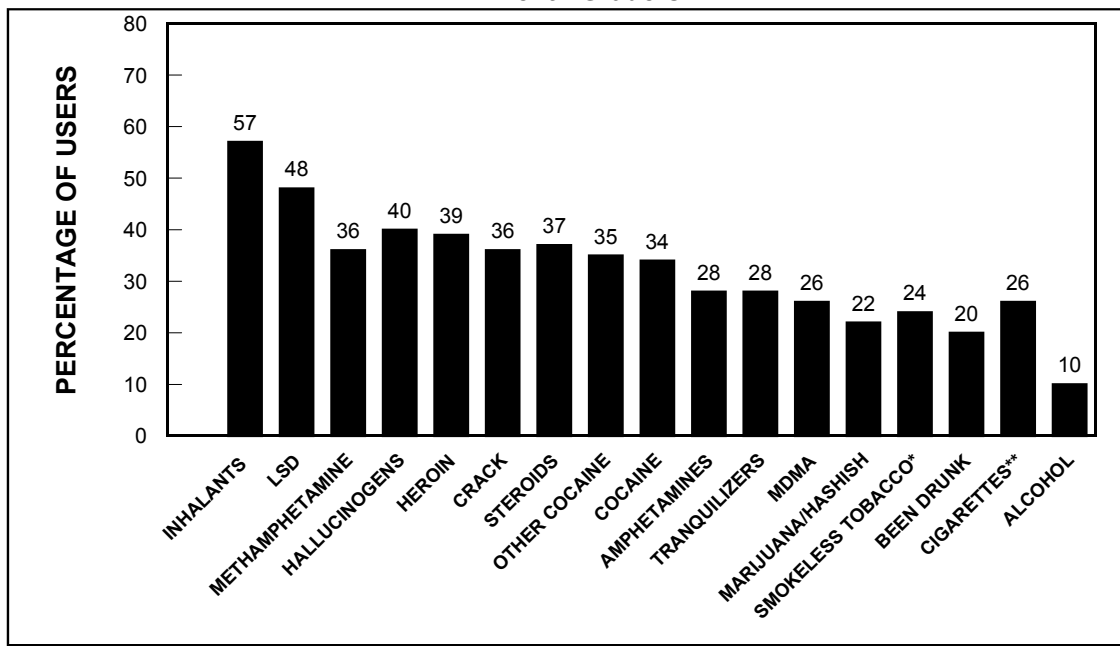
FIGURE 4-3

**Noncontinuation Rates: Percentage of Lifetime Users  
Who Did Not Use in Past Year  
Eighth, Tenth, and Twelfth Graders, 2002**

**Eighth Graders**



**Tenth Graders**



\*Percent of regular smokeless tobacco users (ever) who did not use smokeless tobacco in the last 30 days.

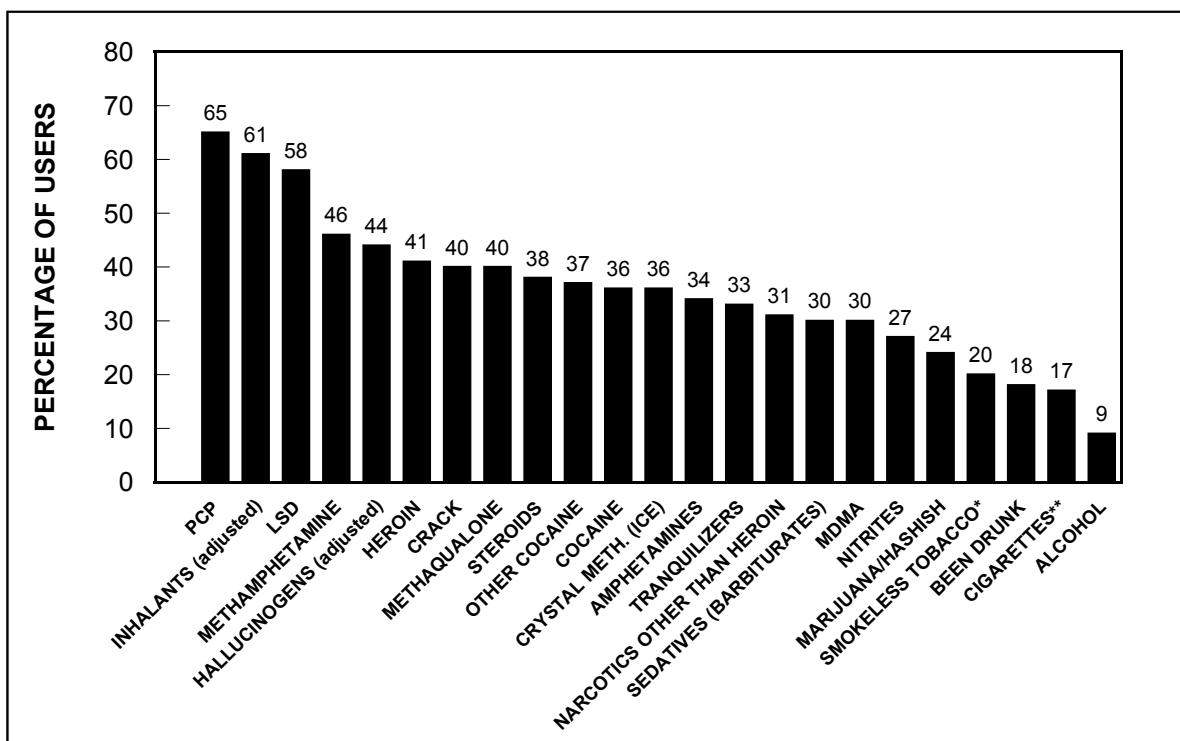
\*\*Percent of regular smokers (ever) who did not smoke at all in the last 30 days.



FIGURE 4-3 (cont.)

**Noncontinuation Rates: Percentage of Lifetime Users  
Who Did Not Use in Past Year  
Eighth, Tenth, and Twelfth Graders, 2002**

**Twelfth Graders**

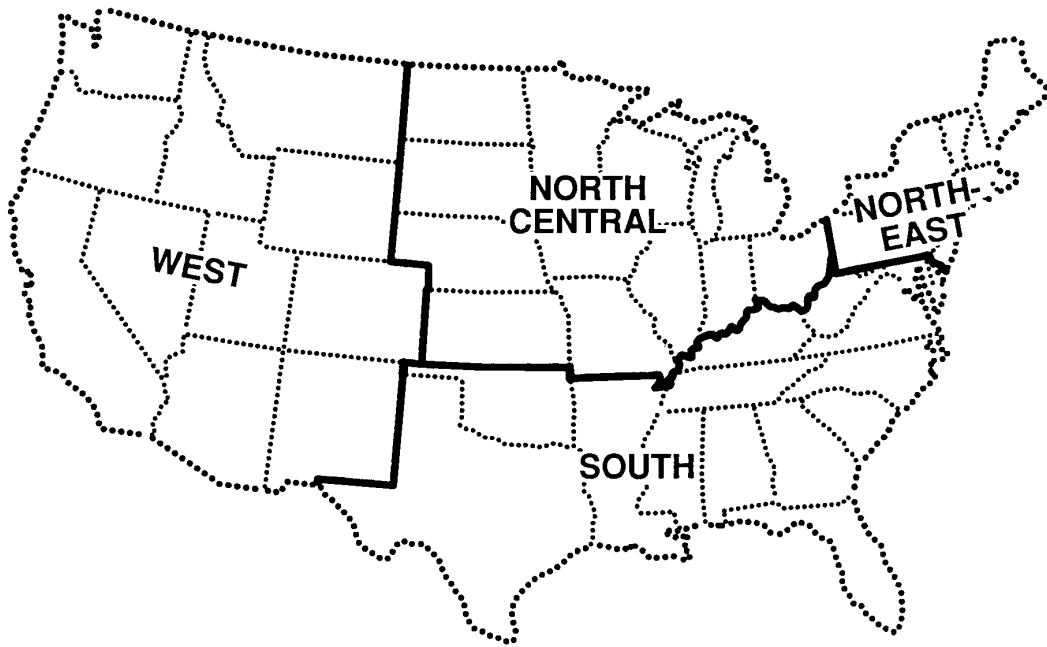


\*Percent of regular smokeless tobacco users (ever) who did not use smokeless tobacco in the last 30 days.

\*\*Percent of regular smokers (ever) who did not smoke at all in the last 30 days.

**FIGURE 4-4**

**States Included in the Four Regions of the Country**



These are the four major regions of the country as defined by the U.S. Bureau of the Census.

## Chapter 5

### TRENDS IN DRUG USE

In this chapter, we address three questions: what drugs show changes in usage, at what rate, and in what sectors of the population? We present trend results at grades 8, 10, and 12 on the many drugs discussed in chapter 4. Trend data are presented and discussed first for twelfth graders, based on 28 years of data (1975 through 2002), then for eighth and tenth graders, based on 12 years of survey data (1991 through 2002). The outcomes to be discussed include measures of lifetime use, use during the past year, use during the past month, and daily use.<sup>42</sup> Trends in noncontinuation rates among twelfth graders are also examined.

Finally, a section discusses the trends in use observed for the key demographic subgroups considered earlier: those defined on the dimensions of gender, college plans, region of the country, population density, socioeconomic status, and racial/ethnic group. We discuss the extent to which trends differ among the subgroups defined on these dimensions.

#### TRENDS IN PREVALENCE OF USE 1975-2002: TWELFTH GRADERS

Tables 5-1 through 5-4 give trends in lifetime, annual, 30-day, and current daily prevalence of use for all drugs, based on the past 28 graduating classes of high school seniors. Figures 5-1 through 5-4n provide graphic depictions of these trends.

- We know from other studies that in the late 1960s and early 1970s, prior to the launching of the Monitoring the Future (MTF) study in 1975, *marijuana* use rose quite sharply from relatively negligible levels in the youth population.<sup>43</sup> Based on the MTF data, the years 1978 and 1979 marked the crest of this long and dramatic rise in marijuana use among American high school seniors (and, for that matter, among young people generally). As Tables 5-2 through 5-3 and Figure 5-4a illustrate, annual and 30-day prevalence of marijuana use leveled between 1978 and 1979, following a steady rise in the preceding years. In 1980, both statistics dropped for the first time and continued to decline every year through 1992, except for a brief pause in 1985. Following this 12-year decline, annual use among twelfth graders rose sharply beginning in 1993. In all, it nearly doubled between 1992 and 1997, from 22% to 39%. Thirty-day use also rose significantly, doubling from the 1992 level of 12% to 24% in 1997. It was not until 1998 that these statistics turned around, although neither declined by a significant amount then. By 2002 annual use declined to 36%.

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<sup>42</sup>The definitions of these behaviors remain the same as in the previous chapter. “Lifetime prevalence” refers to use on one or more occasions ever. “Annual prevalence” refers to use on one or more occasions in the 12 months preceding the survey, “monthly prevalence” (sometimes referred to as “current use” or “past 30-day use”) refers to use on one or more occasions in the 30-day period preceding the survey, and for most drugs “daily use” refers to use on 20 or more occasions during the prior 30 days. (Daily use is defined differently for cigarettes and smokeless tobacco. See text.)

<sup>43</sup>National Commission on Marihuana and Drug Abuse. (1973). *Drug use in America: Problem in perspective*. Washington DC: U.S. Government Printing Office.

Lifetime prevalence of marijuana use first began to drop after 1980, though more gradually than annual or 30-day use.<sup>44</sup> It reached a low 12 years later, in 1992, when it was 33%, but by 1997, 50% of all seniors had tried marijuana before leaving high school. This was still somewhat below the peak level of 60% in 1980. Lifetime use remained level between 1997 and 2001 and showed a slight decline in 2002, to 48%.

Important changes in the attitudes and beliefs that young people hold in relation to marijuana have also occurred over this period, and these changes can account for much of the long-term decline in use, as well as the increase in use during much of the 1990s. (See chapter 8 for a thorough discussion of the issue.)

- Of particular importance were the even sharper fluctuations that have occurred for active ***daily marijuana use*** (Table 5-4 and Figure 5-4m). Between 1975 and 1978 there was an almost twofold increase in daily use. The proportion reporting daily use in the class of 1975 (6.0%) came as a shock to many; and then that proportion rose rapidly, so that by 1978 one in every nine high school seniors (10.7%) indicated that he or she was currently using the drug on a daily or nearly daily basis (defined as use on 20 or more occasions in the last 30 days). In 1979 this rapid and troublesome increase halted, followed by a rapid reversal. By 1992 the daily usage rate had dropped to 1.9%, well below the peak rate of 10.7% or even the 6.0% level first observed in 1975. As is discussed in chapter 8, we attribute much of this dramatic decline to a very substantial increase in concerns about possible adverse effects from regular use and to a growing perception that peers would disapprove of marijuana use, particularly regular use. In 1993, for the first time in 15 years, daily marijuana use increased significantly, and it continued to increase significantly through 1997, reaching 5.8%—three times the rate in 1992. It then leveled through 2002. (See chapter 10 for a discussion of cumulative daily marijuana use among high school seniors. It shows that the proportion that has used marijuana daily for a month or more at some time in the past is considerably higher than the proportion using marijuana daily in just the month immediately preceding the survey.)
- Until 1978, the proportion of seniors involved in ***any illicit drug*** use increased steadily, primarily because of the increase in marijuana use (see Figures 5-1 to 5-4a). About 54% of the classes of 1978 and 1979 reported taking at least one illicit drug during the prior 12 months, up from our first observation of 45% in the class of 1975. Between 1979 and 1984, however, the proportion who reported using any illicit drug during the prior year dropped by 1% to 3% annually until 1985, when there was a brief pause in the decline. In 1986 the decline resumed, with annual prevalence dropping significantly to 27% by 1992, exactly half the level observed in 1979. As with marijuana, the annual prevalence of using any illicit drug then increased substantially from 27% in 1992 to 42% in 1997, before leveling. (In 2002 the annual prevalence was 41%.)

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<sup>44</sup>Lifetime use declines more gradually than annual use or 30-day use because it reflects changes in initiation rates only, whereas annual and 30-day statistics reflect changes in both initiation rates *and* noncontinuation rates.

- As Table 5-1 and Figure 5-1 illustrate, between 1976 and 1981 there was a steady increase in the proportion of twelfth graders using any *illicit drug other than marijuana*.<sup>45</sup> The annual prevalence of such behaviors (Table 5-2 and Figure 5-2), which rose by 9 percentage points between 1976 and 1981 (from 25% to 34%), began a steady decline after 1981 to 15% by 1992. After 1992, however, annual prevalence of use rose again, to 21% by 1997, and has held steady through 2002. The 30-day prevalence of use numbers exhibited the largest proportional drop—a 71% decline—from 22% in 1981 to 6% in 1992 (see Table 5-3 and Figure 5-3). In 1993, both annual and 30-day prevalence rates showed some increases, indicating that the turnaround in the early 1990s was not confined to marijuana use. Annual prevalence rose from 15% in 1992 to 21% in 1997. As a whole, the larger increases during the 1990s in the use of illicit drugs other than marijuana were not as sharp in either absolute or proportional terms as the increase in marijuana use.

Most of the earlier rise in the use of some *illicit drug other than marijuana* apparently resulted from the increasing popularity of cocaine with this age group between 1976 and 1979 and, then, to the increasing use of amphetamines between 1979 and 1981. As stated earlier in this volume, we believe that the upward shift in amphetamine use was exaggerated because some respondents included instances of using over-the-counter amphetamines in their reports of amphetamine use. Figures 5-1 through 5-3 show trends that, beginning in 1982, were based on questions reworded to encourage respondents to exclude the inappropriate reporting of these nonprescription amphetamines.

- Although the overall proportion using *illicit drugs other than marijuana* has changed gradually and steadily over the years, much greater fluctuations have occurred for specific drugs within this general class. This fact is important to recognize because it shows that, while the proportion willing to try any illicit drug may put outer limits on the amplitude of fluctuations for any single drug, the various subclasses of drugs must have important determinants specific to them. In particular, they include variables such as perceived risks, peer normative attitudes, assumed benefits, and availability, as well as novelty. Such variables will be discussed in chapters 8 and 9. (See Tables 5-1 through 5-3 for the long-term trends in twelfth graders' lifetime, annual, and monthly prevalence for each class of drugs. Figures 5-4a through 5-4n graph these trends for annual prevalence, along with the trends for eighth and tenth graders.) We next discuss the trends in these specific classes of drugs.
- From 1976 to 1979, *cocaine* (Figure 5-4e) exhibited a substantial increase in popularity, with annual prevalence doubling in just three years from 6.0% in the class of 1976 to 12.0% in the class of 1979. Then, there was little or no further change observed in any of the cocaine prevalence statistics for seniors between 1979 and 1984, at least in the overall national statistics. (Subgroup differences in trends are discussed subsequently.) In 1985,

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<sup>45</sup>Included under the definition of "any illicit drug other than marijuana" is any use of LSD, other hallucinogens, crack, other cocaine, heroin, and/or any use that is not under a doctor's orders of other narcotics, amphetamines, sedatives (barbiturates), methaqualone (excluded since 1990), or tranquilizers. Not included are the following: alcohol, tobacco, and inhalants. Nitrites, PCP, and ice are included only to the extent the respondents included their use in the more general questions asking about inhalants, hallucinogens, or amphetamines, respectively.

we reported statistically significant increases in annual and monthly use, then a leveling again in 1986. Between 1986 and 1992, however, both indicators of use decreased by three quarters or more: annual use decreased from 12.7% to 3.1% and monthly use decreased from 6.2% to 1.3%. (Reasons for this decrease are discussed in chapter 8.) Annual prevalence then rebounded; in fact, it exactly doubled from 3.1% in 1992 to 6.2% in 1999, as did 30-day prevalence, from 1.3% to 2.6%. Finally, in 2000 the first significant decline in cocaine use in some years was observed; annual prevalence among seniors dropped to 5.0%, where it remains in 2002.

- Use of **crack cocaine** was first measured in 1986 by a single question contained in one questionnaire form and asked only of those respondents who had reported any use of cocaine in the past 12 months. It simply asked if crack was one of the forms of cocaine they had used. It was thus an estimate of the annual prevalence of crack use.

However, prior to 1986, other indicators gathered routinely in the study showed some indirect evidence of the rapid spread of **crack**. For example, we found that the proportion of all seniors reporting that they had smoked cocaine (as well as used it in the past year) more than doubled between 1983 and 1986, from 2.4% to 5.7%. In the same period, the proportion of all seniors who said that they had both used cocaine during the prior year and at some time been unable to stop using it when they tried to stop doubled (from 0.4% to 0.8%). In addition, between 1984 and 1986 the proportion of seniors reporting active daily use of cocaine doubled (from 0.2% to 0.4%). We think it likely that the rapid advent of crack use during this period was reflected in all of these changes.

In 1987 questions about **crack** use were introduced into two questionnaire forms, using our standard set of three questions that ask separately about frequency of use in lifetime, past 12 months, and past 30 days. These were added subsequently to all questionnaire forms beginning in 1990.

Between 1986 and 1991, annual **crack** prevalence of use declined from 4.1% to 1.5%, or by about 60% (see Figure 5-4e). It then leveled for a couple of years. After 1993, annual prevalence rose steadily from 1.5% to 2.7% in 1999, before finally declining significantly in 2000 to 2.2%, where it remained in 2001 (2.1%) and 2002 (2.3%).

It is important to note that **crack** use may be disproportionately concentrated among dropouts relative to most other drugs. In general, it would seem likely that the trends there would parallel those seen among high school seniors, who represent the majority of that age population, but there could be exceptions.

- Like cocaine use, **inhalant** use rose steadily, but more slowly, in the late 1970s (see Figure 5-4b). Annual prevalence (unadjusted for the omission of nitrite inhalants) rose from 3.0% in 1976 to peak at 5.4% in 1979. Starting in 1979, when separate questions were introduced to measure the rising use of nitrite inhalants, an adjustment was introduced into the overall inhalant use measure to correct for the underreporting of nitrite inhalants that we had determined existed. Between 1979 and 1983, we reported some overall decline in this adjusted version—in part due to a substantial drop in the use

of amyl and butyl nitrites, for which annual prevalence declined from 6.5% in 1979 to 3.6% in 1983. Both the inhalant adjusted and unadjusted measures increased modestly between 1983 and 1986, with annual use of inhalants (adjusted) increasing from 6.2% in 1983 to 8.9% in 1986 and that of nitrites increasing less, from 3.6% to 4.7%.

After 1986, there was a steep decline in annual *nitrite* use (from 4.7% to 0.5% in 1992) but only a modest decline in overall inhalant use (adjusted), with annual prevalence of use falling from 8.9% in 1986 to 6.4% in 1992, before rising again to 8.5% by 1996. The gradual convergence of the unadjusted and adjusted inhalant prevalence rates (seen in Figure 5-4b) suggests that the number of seniors who used nitrites but did not report themselves as inhalant users on the general inhalant use question diminished considerably by 1992, as would be expected in light of the overall decline in nitrite use. From 1992 to 1996, however, the annual prevalence of nitrite use rose slightly, from 0.5% to 1.6% in 1996—a large proportional change but on a very low base. Between 1997 and 2001, nitrite use gradually declined to 0.6% in 2001. It is 1.1% in 2002.

This unusual pattern of change, in which inhalant use unadjusted for nitrites rose over much of the life of the study while the version adjusted for nitrites stayed fairly level over most of the life of the study (Figure 5-4b), is worthy of further consideration. Essentially, *inhalants other than nitrites* rose in use, but after 1979 the increase was largely offset or masked in the adjusted inhalants measure by the sharp decline in the use of nitrites. In the class of 1976, when the inhalant questions were first introduced, 10.3% indicated any lifetime use (unadjusted), versus 17.4% in 1995—a substantial increase. Annual prevalence (unadjusted) more than doubled over the same interval, from 3.0% to 8.0%. Since 1995, annual prevalence has declined steadily, from 8.0% in 1995 to 4.5% in 2002.

- *Amphetamine* use remained relatively unchanged between 1975 and 1978, began to increase in 1979, and then increased sharply between 1979 and 1981 (Figure 5-4a). From 1976 through 1981, reported annual prevalence rose by 10 percentage points (from 16% to 26%) and daily use tripled, from 0.4% to 1.2%. As stated earlier, we think these increases were somewhat exaggerated, particularly in the 1980 and 1981 surveys, by respondents who included non-amphetamine over-the-counter diet and stay-awake pills, as well as “look-alike” and “sound-alike” pills in their answers. In 1982, we added new versions of the amphetamine use questions, which were more explicit in instructing respondents not to include such nonprescription pills. (These were added to only three of the five forms of the questionnaire being used; the amphetamine questions were left unchanged in the other two forms until 1984.) Between 1981 and 1982, prevalence rates dropped slightly as a result of this methodological change. In all tables and figures, data for 1975 through 1981 are based on the unchanged questions, providing comparable data across time for longer-term trend estimates; data since 1982 are based on the revised questions, providing our best assessments of current prevalence and recent trends in true amphetamine use.<sup>46</sup>

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<sup>46</sup>We think the unadjusted estimates for the earliest years of the survey were probably little affected by the improper inclusion of nonprescription amphetamines, since sales of the latter did not burgeon until after the 1979 data collection.

In 1982 and 1983, the two years for which both adjusted and unadjusted statistics are available, the unadjusted data showed a modest amount of overreporting (see Figure 5-4a). Both statistics suggest that a downturn in the use of *amphetamines* began in 1982 and continued for a decade. For example, between 1982 and 1992 the annual prevalence for amphetamines (revised) fell by nearly two thirds, from 20% to 7%. Current use and current daily use both fell by more than two thirds. As with a number of other drugs, the trend lines veered upwards after 1992. Annual prevalence rose significantly from 7% in 1992 to 10% by 1997, before leveling from 1998 through 2002.

Table E-2 in Appendix E gives the 27-year trends for many of the *specific amphetamines*.<sup>47</sup> The data are based on a set of branching questions asked in one questionnaire form of respondents who indicate any amphetamine use. The three most widely used amphetamine-type stimulants at the beginning of the study were *Benzedrine*, *Methedrine*, and *Dexedrine*, which had annual prevalence rates in 1976 of 3.5%, 3.4%, and 2.9%, respectively. Benzedrine use peaked in 1977 at 4.1%, Methedrine in 1981 at 5.6%, and Dexedrine in 1981 at 5.1%. (Recall that 1981 was the peak year for amphetamine use overall.) The use of all three drugs dropped to much lower rates of use by 1987 and to negligible rates by 1991, with little change since. It has always been the case that a significant portion of the respondents reporting amphetamine use indicate that they do not know the names of ones that they used, or answer “other” on the pre-defined list (see Table E-2).

*Ritalin* and crystal methamphetamine have come to predominate the class of amphetamines in recent years. Non-medical use of Ritalin grew from 0.1% in 1992 to 2.8% in 1997 and 1998, declined slightly to 2.2% in 2000, and then increased to 2.6% by 2002. A question added in 2001 that asks about Ritalin use without using a branching question format yields a higher annual prevalence for this drug of 5.1% in 2001 and 4.0% in 2002. While it is clear that the branching question yielded a lower absolute prevalence level, we believe it likely that the trend story generated by that question over the years has been an accurate one.

Because of growing concern about the drug, in 1990 a full set of prevalence questions was added about twelfth graders' use of *ice*, a crystallized form of methamphetamine that can be smoked much like crack. (See Tables 5-1 through 5-4.) Despite the widespread concern at the time that an epidemic of ice use would develop, it has not made much of an inroad into the national population of seniors, quite possibly because the dangerous reputation of crack “rubbed off” on it. Annual prevalence of use held at about 1.3% from 1990, the first measurement point, through 1992, and then use began to rise gradually to 2.8% by 1996. This over twofold increase gave ice a slightly higher prevalence rate than crack had (2.1%) in 1996. From 1996 through 2002, ice use changed rather little and stands at 3.0% in 2002.

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<sup>47</sup>These more detailed questions about specific drugs within a class are asked only of seniors. They are contained in a single questionnaire form and are asked in a branching format, wherein a respondent must first indicate that he or she used the general class of drugs (e.g., amphetamines) in the past 12 months before being branched to the more detailed questions about which specific drugs were used in the prior 12 months.



- A general measure of the use of *methamphetamine* (as opposed to crystal methamphetamine) was introduced in 1999, and an annual prevalence of 4.7% was observed. Use has declined slowly since then, reaching 3.6% in 2002.
- The sustained, gradual decline in *sedative* use (Figure 5-4c) between 1975 and 1979 halted in 1980 and 1981. Annual prevalence, which had dropped steadily from 12% in 1975 to 10% in 1979, increased slightly to 11% by 1981. This increase probably reflects the increase then occurring in one of the classes of sedatives, methaqualone (discussed next). The longer-term decline resumed again in 1982, and over the next decade annual prevalence dropped all the way down to 2.8%, a decline of three quarters from the peak level in 1975. After 1992, along with a number of other drugs, an increase began in the annual measure, which doubled to 6.0% by 1998 before leveling. In 2002, this measure increased significantly to 7.0%.

The overall trends for sedatives mask differential trends occurring for the two components of the measure (barbiturate and methaqualone use), as illustrated in Figure 5-4c. *Barbiturate* use declined steadily between 1975 and 1987 before leveling off. By 1992, annual prevalence of use (2.8%) was less than one third of the 1975 level (10.7%). It then rose back steadily to reach 6.2% by 2000, dropped slightly to 5.7% in 2001, and then increased significantly to 6.7% in 2002. *Methaqualone* use, on the other hand, rose sharply from 1978 until 1981. In fact, it was the only drug other than amphetamines that was still rising in 1981. But in 1982, the use of methaqualone also began to decline, helping to account for the overall sedative category resuming its decline that year. Annual prevalence plummeted from 7.6% in 1981 to 0.2% in 1993; it then inched up a bit in the 1990s to 1.1% in 1996, where it remained in 1999. In 2002 it stood at 0.9%, a fraction of its peak level observed in 1981 (7.6%). In fact, because of these very low prevalence rates, methaqualone questions were dropped from five of the six questionnaire forms, beginning in 1990. Therefore, since 1990 the overall sedative data have been based on the six-form barbiturate data adjusted by the one-form methaqualone data.<sup>48</sup>

- The rising usage statistics for *tranquilizers* (Figure 5-4b) peaked in 1977—near the beginning of the study—probably following a considerable period of increase. They then showed a long, steady decline for 15 years, through 1992. Lifetime prevalence of use dropped by two thirds (from 18.0% in 1977 to 6.0% in 1992), annual prevalence by three fourths (from 10.8% to 2.8%), and 30-day prevalence by more than three fourths (from 4.6% to 1.0%). Following this significant decline, annual use began to rise after 1992, reaching 7.7% in 2002.<sup>49</sup>
- The prevalence of *heroin* use dropped rather steadily between 1975 and 1979 (Table 5-2 and Figure 5-4f). Lifetime prevalence dropped by exactly half, from 2.2% in 1975 to

<sup>48</sup>As is described in the previous chapter, the replacement of barbiturates by other non-barbiturate sedatives in recent years probably makes barbiturates a somewhat inappropriate label for the class of drugs being reported. Therefore, we have modified the title to “sedatives (barbiturates).”

<sup>49</sup>It should be noted that Xanax was added to the usage question as an example of a tranquilizer in half of the questionnaire forms in 2001 and in all forms beginning in 2002. A comparison of the two half-samples in 2001 revealed that the addition of this example moderately increased reported use. Therefore, the data in the tables prior to 2001 are not strictly comparable to those presented from 2001 onward.

1.1% in 1979, and annual prevalence also dropped by half, from 1.0% in 1975 to 0.5% in 1979. This decline halted in 1979 and the statistics remained almost constant for a decade and a half. In 1994, all prevalence rates remained similar to those in 1979, with very little change in the intervening years. However, in 1995 a sharp (and statistically significant) increase occurred, with annual and 30-day prevalence rates roughly doubling, to 1.1% and 0.6%, respectively. (As discussed in the previous chapter—see also Table 5-6 in this chapter—we believe that the advent of non-injectable forms of heroin played a role in this increase.) However, there was no further increase in annual or 30-day prevalence of use rates from 1995 through 1999 (Tables 5-2 and 5-3). Nor was there any increase during this period in the use of heroin by injection or by other means (Table 5-6). The increase in heroin use was recognized fairly quickly and gave rise to some ameliorative actions, including an anti-heroin campaign by the Partnership for a Drug-Free America. This response may well explain the unusually quick leveling in use after one year of sharp increase. However, in 2000 there was a significant increase in heroin use among twelfth graders (up to 1.5% from 1.1% in 1999), due entirely to a significant increase in use without a needle (from 1.0% to 1.6%). There was actually a significant drop in heroin use among eighth graders in 2000 at the same time that use rose among twelfth graders. But in 2001, there finally was a significant decline (to 0.9%) among twelfth graders, as well. No further drop was observed in 2002 (1.0%).

Beginning in 1995, the questions on heroin use were elaborated in order to differentiate use with and without a needle. As can be seen in Table 5-6, use without a needle has accounted for much of the heroin use among seniors since 1995. About one fourth of the users have used heroin both ways, but of the remainder, three to five times as many have used heroin without a needle as have used with a needle. (The ratios are different in the lower grades, as will be discussed later.)

- For the first 13 years of the study, the use of *narcotics other than heroin* remained quite stable, with annual prevalence fluctuating between 5.1% and 6.4% (see Figure 5-4g). After 1987, there was a gradual decline in annual prevalence from 5.3% in 1987 to 3.3% by 1992. As with so many of the drugs, use began to rise gradually, but steadily, after 1992, more than doubling to 7.0% by 2000—the highest level seen since the study began. The rate remained at 7.0% in 2002.
- Table E-4 in Appendix E shows many of the *specific narcotic* (or opiate-type) drugs that make up this class and how each of them has trended over the past 27 years. It shows some of the drugs responsible for the considerable rise in the overall class during the 1990s: codeine, the annual prevalence of which rose from a low point of 1.0% in 1995 to 4.4% by 2002; opium, which rose from a low of 0.4% in 1993 to 2.1% in 2002; and morphine, which rose from a low of 0.2% in 1993 to 1.5% in 2002. The use of methadone and Demerol also rose during the 1990s, though their annual prevalence rates remain lower than the other three drugs.

Some additional drugs were added to this list in the 2002 questionnaire, including Vicodin, Percocet, and OxyContin. In the questionnaire form that asks about the larger set of specific narcotics as part of a branching question, *Vicodin* had a prevalence level

almost as high as codeine (4.1% vs. 4.4%). (See Table 4 in Appendix E.) The rates for the other new drugs on the list were considerably lower—*OxyContin*, 1.6%; *Percocet*, 1.9%; *Percodan*, 0.6%; and *Dilaudid*, 0.1%. Table E-4 may be useful in terms of tracking trends and telling us something about the *relative* popularity of these various drugs. However, experience with students' reports on several drugs has taught us that the *absolute* prevalence rates evoked are likely to be higher if the question is not part of a branching structure. Because two of these drugs also were included as tripwire questions—asking directly about the frequency of annual use—we can use these to make a better estimate of the absolute prevalence rates. In the free-standing tripwire question, *OxyContin* showed an annual prevalence rate of 4.0% and *Vicodin*, 9.6% in 2002. These are quite high prevalence rates for drugs with the addictive potential of these two drugs; and they are also appreciably higher than the rates derived from the branching questions.

- **Hallucinogen** use (unadjusted for underreporting of PCP) declined some in the mid-1970s (Figure 5-4d) from an annual prevalence of 11.2% in 1975 to 9.6% in 1978. This may well have been the tail end of a longer period of decline precipitated by rising concerns about the adverse effects of hallucinogens—particularly LSD—and especially concerns about possible brain and genetic damage. The use of hallucinogens (unadjusted for PCP use) then leveled for several years before beginning another sustained decline. The first hallucinogen figures adjusted for the underreporting of PCP use were available in 1979. Between then and 1984, annual prevalence of hallucinogens (adjusted) declined steadily from 11.8% to 7.3%. The rate remained fairly level through 1986, dropped a little more through 1988, and then remained level again through 1992. In 1993 this pattern of irregular declines ended, as annual prevalence rose significantly from 6.2% in 1989 to 10.7% by 1996. Use fell to 8.1% in 2000; between 2001 and 2002 there was a sharp further decline to 6.6%, based on a revised (and improved) version of the question.<sup>50</sup>
- **LSD**, one of the major drugs constituting the hallucinogen class, showed a modest decline from 1975 to 1977, followed by considerable stability through 1981 (Figure 5-4d). Between 1981 and 1985, there was a second period of gradual decline, with annual prevalence of use falling from 6.5% to 4.4%. However, after 1985, annual prevalence began to rise gradually to 5.6% in 1992. The rate of increase accelerated in 1993, as annual prevalence jumped to 6.8%. The increase continued through 1996, with annual prevalence reaching 8.8%, double the low point in 1985. Since 1996, annual prevalence has declined, including a significant decrease in 2002 to 3.5%. This is the lowest prevalence recorded since the study began.
- Prevalence of use statistics for the specific hallucinogen **PCP** showed a very sharp decline after 1979, when the use of this drug was first measured (see Figure 5-4d). Annual prevalence dropped from 7.0% in 1979 to 2.2% in 1982. After leveling for a few years, it dropped further to 1.3% by 1987, which is about where it remained until 1993.

<sup>50</sup>In 2001 the question text for “other hallucinogens” was changed in half the questionnaire forms, with the term “other hallucinogens” replacing the older term “other psychedelics” and the word “shrooms” being added to the list of examples. This had the effect of increasing reported use of this class of drugs. All forms incurred these changes in 2002 and beyond. The data for “other hallucinogens” and the derivative measures of “hallucinogens” and “any illicit drug other than marijuana” were all based on the new question in the 2001 estimates and all subsequent estimates.

The speed with which this drug fell from popularity strongly suggests that it achieved a reputation as a dangerous drug very quickly. From 1993 to 1996, annual use increased (as did the use of most of the other illicit drugs)—to 2.6% by 1996. Also, as with most other drugs, the increase halted in 1997. Annual prevalence for twelfth graders was down to 1.1% in 2002, the lowest prevalence we have ever recorded for this drug.

- Table E-1 in Appendix E shows the 27-year trends for a number of specific **hallucinogenic** drugs. In the early years of the study, mescaline, concentrated THC, peyote, and PCP were far more widely used than they are today. **Concentrated THC** was at a peak annual prevalence of 5.7% in 1977 but fell to about 1% by 1984 and has varied relatively little since, although there was a slight upward surge in the mid-1990s. (It is at 0.8% in 2002.) **Mescaline** was at a 5% peak from 1976 through 1978 (and possibly earlier) but fell below 1% by 1988 and has varied rather little since. (Annual prevalence is 0.8% in 2002.) Peyote use was at 1.8% annual prevalence at the first measurement in 1976 and fell to 0.6% by 1982, which is about where it has remained in the years since (0.6% in 2002). **Psilocybin**, derived from mushrooms, also showed a decline between the mid-1970s and the early 1980s, followed by a long period of low levels of reported use. Use rose from 1992 to 1996, as occurred for many drugs, before leveling again. But it is clear from the modification of the question stem to include the popular term “shrooms” that many users no longer knew the drug as psilocybin. The prevalence rate more than tripled between 2000 and 2001, jumping from 1.4% to 4.9%, even though use levels were stable immediately before and after the wording change. We believe it likely that all of this change in percentages was due to the revision of the question.
- The drug **ecstasy (MDMA)** had been in the surveys of young adults for several years before we added it in 1996 to the questionnaires given to secondary school students. We had been concerned about the possibility of stimulating an interest in a previously little-known drug among secondary school students—particularly given its alluring name. In 1996, we found that 6.1% of the seniors had tried the drug and that 4.6% reported use in the prior twelve months. Over the next two years annual prevalence fell to 3.6% in 1998, but in 1999 it increased sharply to 5.6% and then rose sharply again in 2000 to 8.2%. The rate of increase slowed some in 2001, when use reached 9.2%. The sharp increase in the popularity of this drug was followed by a decrease, to 7.4%, in 2002. Chapter 8 shows that perceived risk for ecstasy jumped substantially in 2001, likely helping to explain the deceleration in the rise in use, and then perceived risk increased sharply again in 2002. However, we know from other analyses that ecstasy was still diffusing to more communities in 2001, partially explaining its continued rise in use. (As Volume II reveals, this dramatic increase through 2001 was not confined to teenagers.) The 2001 rises in perceived risk led us to predict the downturn in use that did in fact occur in 2002—once again demonstrating the importance of these beliefs in restraining from drug use. The reported availability of ecstasy, which had risen substantially in recent years, quite probably played a role in its sudden resurgence. Availability dropped some in 2002. (See chapter 9.) This drug has been particularly popular at “raves” and dance clubs, making it one of the so-called “club drugs.”

- Another “club drug,” *Rohypnol*, was added to the study in 1996, in part because of the extensive publicity it received as a “date rape” drug. The annual prevalence rate on this drug has remained low (between 0.8% and 1.4%) in the years since, no doubt in part due to the early and extensive negative publicity it received. The peak prevalence of 1.4% occurred in 1998, and use was down to 0.9% by 2001. In 2002, the standard triplet question (asking about lifetime, past year, and past month use of Rohypnol) was replaced with a “tripwire” question asking only about use in the past year. As a result of this change in the structure and location of the question, the 2002 annual prevalence (1.6%) is not necessarily comparable to the 2001 annual prevalence estimate (0.9%).
- The use of *steroids*, specifically anabolic steroids, has been included in the study since 1989. The question is preceded by an introduction that states, “Steroids, or anabolic steroids, are sometimes prescribed by doctors to promote healing from certain types of injuries. Some athletes, and others, have used them to try to increase muscle development.” The question then asks, “On how many occasions have you taken steroids on your own—that is, without a doctor telling you to take them?” Since it does not state that they must be prescription-controlled substances, we think it likely that some respondents include over-the-counter compounds like androstenedione in their answers. However, some special analyses presented in chapter 4 indicate that it was a minority of self-reported steroid users who also reported using androstenedione in the same year (38%, 30%, 28% in grades 8, 10, and 12 in 2002). Among twelfth graders, annual prevalence stood at 1.9% in 1989, fell to a low of 1.1% by 1992, and then rose gradually during the 1990s to 1.8% by 1999. Use leveled in grade 12 at 1.7% in 2000 but rose significantly to 2.4% in 2001 and leveled again at 2.5% in 2002.
- As these varied patterns of use show, the overall proportion of seniors using *any illicit drugs other than marijuana* in their lifetime has changed over the years, but the mix of drugs they used has changed even more. A number of drug classes showed dramatic declines (particularly in the 1980s), some showed substantial increases, and some remained fairly stable. Further, the periods in which they either increased or declined varied considerably for the different drugs, although between 1992 and 1996 the use of many drugs increased and by 1997 the use of most had stabilized.
- With respect to the licit drugs, in the last half of the 1970s there was a small upward shift in the prevalence of *alcohol* use among seniors (see Figure 5-4i). To illustrate, between 1975 and 1979 the annual prevalence of use rate rose steadily from 85% to 88%, the monthly from 68% to 72%, and the daily from 5.7% to 6.9%. As with marijuana, 1979 was the peak year for annual use. Over the next six years, between 1979 and 1985, these prevalence rates fell gradually. Annual prevalence fell from 88% to 86%, monthly from 72% to 66%, and daily from 6.9% to 5.0%. All three rates remained fairly level from about 1985 to 1987, after which they showed some further decline. Thirty-day prevalence, for example, fell from 66% in 1987 to 51% in 1992, down by more than a quarter from its peak level in 1978 (72%). The prevalence of daily alcohol use fell from 4.8% to 3.4% between 1987 and 1992, followed by a sharper drop to 2.5% in 1993 (based on the original form of the question), down by almost two thirds from its peak level in 1979 (6.9%). No further declines were observed in 1994, however, based on a slightly

revised set of alcohol usage questions.<sup>51</sup> If anything, there was evidence of some increase in use, though none of the changes reached statistical significance. From 1993 through 1997, as many forms of illicit drug use rose, there also was a slight upward drift in the annual, 30-day, and daily prevalence of use rates for alcohol. But between 1997 and 2001 there was a slight (and offsetting) downward drift in annual and 30-day use. Daily use declined some after 1998 and then increased again in 2001. In 2002 there was evidence of a decrease in alcohol use, though not yet a statistically significant one. (Both lower grades did show significant declines in 2002.)

- A similar pattern was observed in the prevalence of *occasional heavy drinking* (Table 5-4 and Figure 5-4j). When asked whether they had taken five or more drinks in a row during the prior two weeks, 37% of the seniors in 1975 said they had. This proportion rose gradually to a peak of 41% by 1979, and it remained at this peak level through 1983. In both 1984 and 1985, we observed drops of 2-percentage-points in this troublesome statistic, bringing it down to 37%, exactly where it had been in 1975. There was no further change in 1986 or 1987, but over the next six years it dropped another 10-percentage-points, from 38% in 1987 to 28% in 1993—two thirds of its peak level of 41%. After 1992, it increased gradually and modestly to 32% in 1998 and then declined some through 2002 (to 29%).
- Beginning in 1991, respondents were asked to report how often they had *been drunk* in their lifetime, in the past 12 months, and in the past 30 days. Thirty-day prevalence of self-reported drunkenness showed declines between 1991 and 1993 (from 32% to 29%), followed by gradual increases through 1997 (34%), as would be expected given the data above (Tables 5-1 through 5-4 and Figure 5-4i). This statistic then declined to 30% by 2002.
- Note that there is no evidence that the 13-year decline in marijuana use observed between 1979 and 1992 led to any concomitant increase in *alcohol* use, as many observers suggested would happen. In fact, through 1992 there was some parallel decline in annual, monthly, and daily alcohol use as well as in occasional heavy drinking. Earlier, when marijuana use rose in the late 1970s, alcohol use moved along with it. As marijuana use rose again in the 1990s, alcohol use seemed to be edging up with it, although certainly not rising as sharply. In sum, there is little evidence here to support what we have termed “the displacement hypothesis,” which implies that an increase in marijuana use will lead to a decline in alcohol use, or vice versa. Instead, both substances appear to move more in harmony, perhaps both reflecting changes in a more general construct such as the tendency to use psychoactive substances, whether licit or illicit, or the frequency with which teens “party” or not.
- *Cigarette* use among high school seniors peaked in 1976 and 1977, as measured by lifetime, 30-day, and daily prevalence. (Annual prevalence of use is not asked.) Over the

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<sup>51</sup>A slight revision was introduced in the question wording in three of the six forms in 1993 and in the three remaining forms beginning in 1994. It added the qualifier of “more than just a few sips” to the definition of a drink of an alcoholic beverage. Figures 5-4i and 5-5 show the extent of the correction that resulted for annual and daily use. For twelfth graders, it was a relatively small correction.

next four years, 30-day prevalence dropped substantially, from 38% in the class of 1977 to 29% in the class of 1981 (see Tables 5-3 and 5-4 and Figure 5-4k). More importantly, **daily cigarette use** dropped over that same interval from 29% to 20%, and daily use of a half-pack or more from 19% to 14%. But by 1982 and 1983 the decline had clearly halted. The earlier decline resumed briefly in 1984; daily use fell from 21% (in 1983) to 19%, and daily use of a half-pack or more dropped from 14% to 12%. In the eight years between 1984 and 1992, there was very little further change: 30-day prevalence fell from 29% to 28%, daily use from 19% to 17%, and daily use of a half-pack or more from 12% to 10%. Despite the general decline in the use of most other drugs during this period, despite the increasingly restrictive legislation with regard to smoking debated and enacted at state and local levels, and despite prevention efforts made in many school systems, there was a noteworthy lack of any appreciable decline in smoking rates. After 1992, both the 30-day smoking rate and the current daily smoking rate actually rose significantly, with monthly use increasing steadily from 28% in 1992 to 37% by 1997 and daily use increasing from 17% to 25%. Finally, by 1998, a turnaround of this upward trend began to emerge, and it accelerated in 2000. Thirty-day prevalence fell significantly from 37% in 1997 to 27% by 2002. Daily prevalence also fell significantly from a recent peak of 25% in 1997 to 17% by 2002.

- We believe that the intense public debate over **cigarette** policies likely played an important role in bringing about the recent and very significant downturn in adolescent smoking. Other developments, however, may well have contributed, including (a) increases in cigarette prices, brought about in part by the tobacco industry settlement with the states; (b) substantially increased prevention activities in a number of states; (c) the removal of certain types of advertising (including billboards) nationwide under the terms of the tobacco settlement; (d) the initiation of a national anti-smoking ad campaign by the American Legacy Foundation; and (e) efforts by the Food and Drug Administration (FDA), in cooperation with the states, to reduce youth access to cigarettes. (The FDA effort eventually was brought to an end by a ruling of the Supreme Court, but the effort may be continuing at the state level, judging by the continuing decline in reported availability by eighth and tenth graders.) Further, the fact that smoking has been falling sooner and faster at lower grade levels suggests that smoking among seniors is likely to continue dropping as a result of the cumulated cohort effects working their way up the age spectrum.
- Questions about the use of **smokeless tobacco** (Figure 5-4l), which includes chewing tobacco and snuff, were first introduced in 1986. They were omitted in 1990 and 1991 and then reintroduced in 1992. Results show a high rate of use for the sample overall, particularly for males, who account for nearly all of the use. The trends for the period 1986 to 1989 showed a decline in use, with 30-day prevalence falling steadily from 11.5% to 8.4%. When the questions were reintroduced in 1992, the usage rate (11.4%) almost matched the 1986 level. Use rose slightly, to 12.2% in 1995, but then fell back by nearly half, to 6.5% by 2002. In 2002, one sixth (18%) of all seniors had tried smokeless tobacco in their lifetime and 2.0% were current daily users. In sum, the use of smokeless tobacco has fallen substantially since 1995 among seniors, while their use of cigarettes has been falling since 1997.

## TRENDS IN PREVALENCE OF USE 1991-2002: EIGHTH AND TENTH GRADERS

To facilitate cross-grade comparisons, trend data for all three grades (eighth, tenth, and twelfth) are included in Tables 5-5a through 5-5b and Figures 5-4a through 5-4n. (Note that Tables 2-1 through 2-3 in chapter 2, “Key Findings: An Overview and Integration Across Five Populations,” augment Tables 5-5a through 5-5b with trend data on college students and young adults.) Our discussion of trends in use at eighth and tenth grades must be delimited to a much shorter historical period than that for twelfth graders, because data on them were first gathered in 1991.

- Since data first became available in 1991 for all three grade levels, the eighth-, tenth-, and twelfth-grade trends in the use of *illicit* drugs have moved largely, though not completely, in parallel. From 1991 through 1996, this has meant some increase in use at all grade levels for most drugs. (It is important to note, however, that the eighth graders were the first to show the increase for many of the drugs over the 1991-1992 interval). In 1997, the prevalence rates for most drugs leveled off, or began to level off, in all grades; in 1998 most rates showed some decline in all grades. Just as the eighth graders were the first to show an increase in the early 1990s, they also were the first to show many of the decreases in the late 1990s.
- **Marijuana** use (Figure 5-4a) rose particularly sharply among eighth graders in the 1990s, with annual prevalence tripling between 1991 and 1996, from 6% to 18%. Starting a year later, use rose significantly among tenth and twelfth graders as well. Between 1992 and 1997, among tenth graders annual prevalence of use more than doubled, rising from 15% to 35%. It increased by more than two thirds, from 22% to 39%, among twelfth graders. In 1997, the prevalence rates began to decline among eighth graders. (Figure 5-4a shows that the increase was decelerating in grades 10 and 12.) By 1998, the upper grades had started to decline as well. Eighth graders have shown a steady decline since their peak in 1996 (18% annual prevalence), reaching 15% by 2002. While both tenth and twelfth graders have shown some decline since their peaks in 1997 (35% and 39%, respectively), their progress had not been as steady or as large, although in 2002 tenth grade use did decline significantly to 30%. Clearly there has been an end to the rapid rise in marijuana use among teenagers in the early 1990s, but whatever downturn has occurred has been modest so far. It is important to note that the two directional changes have occurred so far among eighth graders first. This suggests that eighth graders may be the most immediately responsive to changing influences in the larger social environment. The lag in the decline in the later grades could also reflect some cohort effects (i.e., lingering effects of changes in use that occurred in earlier years).
- **Daily marijuana** use also went up sharply in the 1990s in all three grades (see Figure 5-4m). In fact, in proportional terms, the increases were larger than those for annual prevalence. For the period 1992-1996, daily use among eighth graders increased, from 0.2% to 1.5%, before declining significantly to 1.1% in 1997. For the period 1992-1997, daily use among tenth graders rose more, from 0.8% to 3.7%, and among twelfth graders, from 1.9% to 5.8%. Since 1997 the daily prevalence rates have remained relatively level



in all grades, illustrating how changes in daily use tend to lag changes in annual prevalence, for instance.

- Annual **hallucinogen** use (Figure 5-4d) rose in all three grade levels from 1991 to 1996, followed by some decline in all three grades from 1996 through 2000. In 2001, the question text was changed and the tenth and twelfth graders showed a further significant decrease between 2001 and 2002. The two components of the hallucinogens class, LSD and hallucinogens other than LSD, have generally followed the same pattern. LSD use is now at the lowest level ever recorded in this study.
- The increase in **LSD** use in the early 1990s (Figure 5-4d) is of particular interest because LSD was one of the first drugs to decline in use in the long-term epidemic, almost surely due to growing concerns about its dangers in the early to mid-1970s. The more recent increase in its use may reflect the effects of what we have labeled “generational forgetting”—that is, replacement cohorts do not have as much concern about its dangers as their predecessors did, because they have not had comparable opportunities for direct and vicarious learning about the consequences of using the drug.<sup>52</sup> As is described later, the downturn in LSD use in recent years generally has not been accompanied by the expected changes in perceived risk and disapproval, suggesting to us that the decline may be due more to a displacement by another drug, such as ecstasy, than to any increased aversion to LSD per se. There also has been a decline in the reported availability of LSD since the mid-1990s.
- **Crack** use was at quite low levels in 1991 (Table 5-5b and Figure 5-4e). It began to rise among eighth graders after 1991, among tenth graders after 1992, and among twelfth graders after 1993. From these quite low rates, the annual prevalence of use rate roughly tripled among eighth graders (from 0.7% in 1991 to 2.1% in 1998) and tenth graders (from 0.9% in 1992 to 2.5% in 1998), and it rose by two thirds among twelfth graders (from 1.5% in 1993 to 2.7% in 1999). Crack was one of the very few drug classes still showing evidence of continued increase in 1998. The increases for tenth and twelfth graders stalled in 1999, followed by a decrease in use. Eighth graders actually showed a significant decrease in 1999. By 2002 crack was either holding level (in eighth grade) or perhaps increasing a bit (in grades 10 and 12).
- The use of **other cocaine** also rose some during the 1990s at all three grade levels, though it did not attain the levels observed in the mid-1980s. Among eighth graders, annual prevalence of use rose from 1.0% in 1991 to 2.5% in 1996, before leveling. Increases began after 1992 in the older grades, paused in 1998, and then continued into 1999. Between 1992 and 1999, the increase rose from 1.7% to 4.4% among tenth graders and from 2.6% to 5.8% among twelfth graders. Use has declined from the peak in 1998 in eighth grade (from 2.4% to 1.8% in 2002) and from the peak in 1999 in tenth and twelfth grades (down from 4.4% to 3.4% in tenth and from 5.8% to 4.4% in twelfth). Thus, both powder cocaine and crack cocaine use increased considerably in proportional terms

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<sup>52</sup>See Johnston, L. D. (1991). Toward a theory of drug epidemics. In R. L. Donohew, H. Sypher, & W. Bukoski (Eds.), *Persuasive communication and drug abuse prevention* (pp. 93-132). Hillsdale, NJ: Lawrence Erlbaum.

during the 1990s; but because each started from a very low base, the absolute increases were relatively small, and neither class of drugs has reached the levels they had attained in the mid-1980s. Since the late 1990s there has been some decline in use, though that decline may have ended by 2000.

- The use of *amphetamines* (Figure 5-4a) also increased at all three grade levels during the 1990s, reaching annual prevalence rates by 1996 of 9.1% for eighth graders (versus 6.2% in 1991), 12.4% for tenth graders (versus 8.2% in 1992), and 9.5% for twelfth graders (versus 7.1% in 1992). Like several other drugs, the rise in amphetamine use appears to have begun a year earlier (in 1992) among eighth graders than among tenth and twelfth graders. These trends diverged a little in 1997, as use fell significantly in eighth grade, leveled in tenth grade, and continued to increase in twelfth grade. By 1998, and continuing into 1999, use among both eighth graders and tenth graders was declining and use at twelfth grade had leveled. Thus, we once again see a staggered inflection point in the trends, quite likely reflecting a cohort effect. In the lower two grades use leveled in 2000 but appeared to resume its decline in 2002.
- Between 1991 and 1995, *inhalant* use (Figure 5-4b) rose by more than a third among eighth and tenth graders, with annual prevalence of use reaching 12.8% and 9.6%, respectively. (Recall that inhalant use tends to be higher in the lower grades.) Among twelfth graders, use rose from 6.2% to 8.0% between 1992 and 1995. Since 1995, however, inhalant use has been declining gradually at all grade levels, and the total decline has been appreciable. The 2002 figures are the lowest recorded by the study for eighth and tenth graders.

As Figure 5-4b illustrates, inhalant use, unadjusted for the use of nitrite inhalants, had been on the rise among twelfth graders for a long time. Very likely the same was true among eighth and tenth graders, although our data on them cover only 1991 forward. The anti-inhalant campaign launched by the Partnership for a Drug-Free America in 1995 (partly in response to the results reported from Monitoring the Future) may have played an important role in reversing this troublesome long-term trend. (There was a jump in the perceived risk of inhalant use between the 1995 and 1996 surveys, as is discussed in a later chapter.) The gradual declines continued into 2001. However, in 2002, eighth graders' perceived risk of trying inhalants decreased significantly and tenth graders' perceived risk of regular use also decreased significantly, perhaps serving as a warning that additional attention needs to be paid to the issue.

- *Tranquilizer* use is not nearly as prevalent today as it was 28 years ago, but it showed a very gradual increase at all three grade levels in the early 1990s (see Table 5-5a and Figure 5-4b). From 1991 to 1996, annual prevalence increased at the eighth-grade level, from 1.8% to 3.3%, before starting a decline (reaching 2.5% in 1999). The increase at tenth and twelfth grades started later and continued through 1999, before leveling: from 3.3% in 1994 to 5.4% in 1999 among tenth graders, and from 2.8% in 1992 to 5.8% in 1999 among twelfth graders. This divergence over those three years between the downward trend for eighth graders and the continuing increase among tenth and twelfth

graders is quite unusual. However, it is consistent with the finding that the eighth graders are showing more decline in general, for example, for marijuana.

- There was a large proportional increase in **heroin** use between 1991 and 1996 at all three grade levels. Use peaked in 1996 among eighth graders and a year later in the upper two grades after doubling or tripling at each grade level (see Figure 5-4f). Usage rates then remained quite stable through 1999 before showing a divergence, with use declining significantly among eighth graders in 2000 and rising significantly among twelfth graders. In 2001 significant declines finally were observed in the upper two grades, as well. There were no further changes in 2002.

As mentioned, we believe that the availability of very pure heroin, which could be taken by non-injection means, contributed in an important way to the sharp rise in heroin use in the early 1990s. The importance of non-injectable heroin use by 1995 is documented in Table 5-6, which shows for each grade the proportion of users (based on several prevalence periods) who used heroin either by **injection** or **non-injection** means, or by both means. For eighth graders, the table shows a rough equivalence between the two methods of administration (with and without a needle) from 1995 to 1999. Among tenth graders over the same time interval, somewhat more have used heroin without than with a needle, and the same was the case to a greater extent for twelfth graders. In 2000, using by both means declined among eighth graders and using only without a needle increased among twelfth graders. But in 2001 all three grade levels showed significant declines in the proportion of students using heroin without using a needle. There were no further changes in 2002.

- As noted above, **ecstasy (MDMA)** use fell among twelfth graders from 1996 (when it was first measured) through 1998 (see Table 5-5a), and the same happened at eighth and tenth grade, as well. But in 1999 there was a significant increase in the upper two grades—one of the more important increases to occur in 1999. The eighth graders did not show this resurgence, however, until a year later in 2000, when they had a significant increase in ecstasy use, as did the twelfth graders. Annual prevalence of ecstasy use rose some in all three grades in 2001, but by lesser amounts, suggesting a clear deceleration in the rise. In 2002, annual use finally reversed direction and fell in all three grades, though only the tenth grade decline was statistically significant. We predicted this important turnaround by the sharp increase in perceived risk for ecstasy in 2001—an increase that continued into 2002. One reason that ecstasy use did not decline in 2001, we believe, given the sharp change in perceived risk, was that it was still in the process of diffusing to a larger proportion of communities in the country. While the diffusion process continued into 2002—based on the proportions of schools having at least some lifetime use of ecstasy reported by the student sample—the changes in beliefs about harmfulness more than compensated for the diffusion.
- At all three grade levels, the annual prevalence of **Rohypnol** use remained fairly stable through 1998 from when it was first measured in 1996. Decline then followed at all three grades through 2000, resulting in annual prevalence rates that are quite low: 0.5% in eighth grade and 0.8% in both tenth and twelfth grades. Prevalence in 2002 is slightly

lower—0.3% in eighth grade and 0.7% in tenth grade. Because in 2002 at twelfth grade the question was relocated to a different questionnaire form, a change score cannot be calculated with sufficient accuracy.

- **Ketamine** and **GHB**, both club drugs that were added to the questionnaires in the form of “tripwire” questions beginning in 2000, showed little change in their usage levels through 2002.
- The use of **steroids** among eighth and tenth graders fluctuated rather little between 1991 and 1998, but both grades showed a sharp and highly statistically significant jump in use in 1999. As is described in the section “Gender Differences in Trends,” this jump occurred almost entirely among boys. (Twelfth grade is the only grade level at which there is a measure of perceived risk for steroids, and even though twelfth grade use did not jump in 1999, perceived risk fell sharply that year. It seems likely that perceived risk fell among eighth and tenth graders, as well, in which case it may have contributed to the sudden increase in use.) In 2000 only the tenth graders showed a further increase (significant) in use, and in 2001 only the twelfth graders did so, possibly reflecting some cohort effect. There was no significant change in 2002.
- From 1991 to 1993, the lifetime, annual, and 30-day prevalence measures for **alcohol** (Figure 5-4i) showed a small decline in all three grades (except for 30-day use among eighth graders). Between 1993 and 1996 in the case of eighth and tenth graders, and 1993 to 1997 in the case of twelfth graders, there was a slight upward drift in the annual and 30-day prevalence rates. (This corresponds to the period in which the use of a number of illicit drugs, and also cigarettes, was rising.) Between 1996 and 2001, there was some decline in drinking among eighth graders (for example, 30-day prevalence dropped from 26% in 1996 to 22% in 2001). There was not much change in the upper grades during this time. In 2002, alcohol use for eighth and tenth graders decreased significantly for all prevalence periods (lifetime, annual, and 30-day). Twelfth graders’ use of alcohol also decreased for all levels of use, but the changes were not statistically significant.
- **Occasional heavy drinking** (Figure 5-4j)—defined as having five or more drinks in a row at least once in the prior two weeks—had been rising gradually among eighth graders after 1991, among tenth graders after 1992, and among twelfth graders after 1993. After rising 3 to 4 percentage points in each case, it began to decline in eighth grade after 1996, in tenth grade after 1997, and in twelfth grade after 1998; but it changed rather little during the next several years. At eighth grade heavy drinking has decreased since 1999; at tenth grade it has decreased significantly since 2000; and at twelfth grade, since 1998. Students’ reports of **having been drunk** in the past 30 days show a roughly similar pattern. This year, lifetime and annual use decreased significantly for eighth grade; and lifetime, annual, and 30-day use decreased significantly for tenth grade. Use also decreased for twelfth grade, though the declines did not reach statistical significance.
- **Cigarette** smoking generally is not expected to move synchronously across the three grade levels, because changes have usually been the result of cohort effects rather than

secular trends. (See chapter 6 for a further discussion of this point.) However, the prevalence of current smoking began to rise among eighth and tenth graders after 1991 and among twelfth graders after 1992, and until 1996 it had been moving steadily upward in all three grades (see Figure 5-4k). In 1996 current smoking peaked in grades 8 and 10, and it peaked a year later among twelfth graders. The proportional increases in the smoking rates were considerable during this period—about a 50% increase in the two lower grades and a 31% increase at twelfth grade.

Because of this general parallel movement, which is more characteristic of a secular trend, we are inclined to look for some contemporaneous historical correlates to explain it. One possible explanation is that use rose because cigarette prices dropped on average due to increased price competition among brands. Another is that cigarette advertising and promotion had grown and/or become more effective at reaching youth. Still a third possibility is that the portrayal of smoking had increased appreciably in the entertainment media. We believe there is some evidence supportive of all three possibilities; but whatever the causes, they seemed to reach young people across the spectrum. Therefore, we infer that the changes in cigarette use must have resulted from culture-wide influences of the type just mentioned.

In 1997, the 30-day smoking rate began to decline among eighth graders, to level among tenth graders, and to continue to increase among twelfth graders; but by 1998 there was evidence of a decline in all three grades, one that continued into 2002. As mentioned earlier, we think that the extensive adverse publicity generated by the state attorneys general, the President, and Congress in the debate over a possible legal settlement with the tobacco companies may have contributed importantly to this turnaround by influencing youth attitudes toward cigarette companies and their products. Price increases, the removal of some forms of advertising (such as billboard advertising and the Joe Camel campaign), the implementation of vigorous anti-smoking advertising (particularly that launched by the American Legacy Foundation and some of the states), and strong prevention programs in some states all may have contributed. Despite the substantial recent declines, still 11% of the eighth graders, 18% of the tenth graders, and 27% of the twelfth graders (more than a quarter) are current smokers.

- While there may have been some growth in the use of *smokeless tobacco* in the early 1990s (Figure 5-4l), there is evidence of a fair decline in recent years at all three grade levels.

## TRENDS IN NONCONTINUATION RATES: TWELFTH GRADERS

Table 5-7a shows how the noncontinuation rates observed for the various classes of drugs have changed over time among twelfth graders. Noncontinuation refers to use of the drug in one's lifetime but not in the past 12 months. The noncontinuation rate is the percent of lifetime users who did not report using the drug in the past 12 months.

- **Marijuana** showed some increase in noncontinuation rates between 1979 (16%) and 1984 (27%). This increase gave rise to the greater drop observed in annual than in lifetime prevalence of use, because the latter is influenced only by changes in the initiation rate, whereas the former is influenced by both the initiation rate and the noncontinuation rate. Between 1984 and 1987 there was no further increase, followed by another rise to 35% in 1991. The noncontinuation rate's sharp fall after 1991 to 17% by 1995 helps to explain the sharp turnaround in the annual and 30-day prevalence of use rates during the 1990s. By 1998, the noncontinuation rate had climbed some to 24%, where it stabilized.
- The noncontinuation rate for **cocaine** decreased from 38% in 1976 to 22% in 1979, corresponding to a period of increase in the annual prevalence of use. It then remained fairly stable through 1986, corresponding to a period of stability in the actual prevalence statistics. After 1986, the noncontinuation rate rose substantially—from 25% in 1986 to 55% in 1991—as annual use fell dramatically. This pattern strongly suggests that the sharp increase in perceived risk, which began in 1986, influenced both the initiation rate *and* the quitting rate. After 1991, the noncontinuation rate began declining fairly rapidly once again, reaching 31% by 1996. (Recall that the overall use of cocaine was increasing during that period.) After 1996, noncontinuation rates rose again—corresponding to a period of leveling in overall use—reaching 42% by 2000, where it remained in 2001. It was 36% in 2002. In sum, changes in the noncontinuation rate have contributed appreciably to the overall changes, both increases and decreases, in the prevalence of cocaine use over the last 27 years.
- **Crack cocaine** also showed a sharp rise in noncontinuation, from 28% in 1987 to 52% in 1991, as prevalence of use rates declined. Then, the noncontinuation rate fell back to 30% by 1995, as usage rates rose. Noncontinuation rates for crack then began to increase once again, reaching 43% by 1998, when overall use leveled. There has been little change since 1998.
- Noncontinuation of **amphetamine** use has also fluctuated widely over the years. It rose between 1982 (27%) and 1992 (49%). (Earlier data, based on the unrevised questions, suggest that the change probably began after 1981.) Between 1992 and 1996, when overall use was rising, noncontinuation fell from 49% among lifetime users to 38% by 1996. This statistic then remained fairly level, corresponding to a period of leveling in use, though it was down slightly to 34% by 2002.
- Much of the previous decline in **sedative** use also was accounted for by a changing rate of noncontinuation for the specific substances involved. For example, in the case of **barbiturates**, the noncontinuation rate rose from 36% in 1979 to 52% in 1988. (It then declined in the 1990s to 37% by 1995, when it leveled for several years, and then after 1998 declined to 30% in 2002.) The figure for **methaqualone** was 29% in 1979, rising dramatically to 61% by 1988 and 52% in 1989. (Since 1990, use rates have been very low, and because the questions about methaqualone are on only one form, noncontinuation rates tend to be much more variable than for other drugs.)

- As overall use of *tranquilizers* declined, users showed a steady, gradual increase in their noncontinuation rates between 1975 and 1982, from 38% to 50%. There was little further systematic change for a decade until 1992. After 1992, though, there was a decline, from 53% in 1992 to 36% in 1996, where it has remained level since.
- Between 1982 and 1991, the *LSD* noncontinuation rate fluctuated within a rather narrow range (between 37% and 41%), without a clear trend developing. Between 1991 and 1996, though, the noncontinuation rate dropped from 41% to 30%, accounting for some of the increase in overall LSD use occurring during that period. Since 1996 the rate has risen to 58% by 2002, as overall use has declined appreciably.
- *Steroid* use had a sharp, 14-percentage-point increase in noncontinuation (to 48%) in 1992, a year in which there was an increase in the perceived dangers of using steroids, but the rate has fallen back some to 38% by 2002.
- Although *alcohol* has always had an extremely low rate of noncontinuation, that rate increased gradually from about 1988 to 1993, perhaps reflecting the changed norms regarding its use (see chapter 8). These norms, in turn, may have reflected both the influence of several states' change in the legal drinking age and a greater emphasis on the dangers of drunk driving. There has been little further change since 1993, however, during a period in which there has been relatively little change in use overall.

Table 5-7b provides noncontinuation rates for seniors who were more established users, here defined as those who reported having used a drug 10 or more times during their lifetime. It shows that noncontinuation is far less likely among heavier users than among all users of a given drug. Further, while the trends in noncontinuation mentioned earlier generally have been similar to trends observed in the noncontinuation rates for heavier users of those same drugs, the degree of fluctuation has tended to be considerably smaller among the heavier users.

The reader is cautioned that the number of cases in each cell in Table 5-7b is considerably smaller than in most other tables—particularly when overall usage rates are low to start with; therefore, the trend data are much more uneven.

- Note that the noncontinuation rate of *marijuana* users who had used the drug at least 10 times has been very low throughout the past 27 years. It has ranged only from a low of 4.0% in 1975 to a high of 12.3% in 1990.
- Noncontinuation rates for experienced users of *inhalants* actually dropped in the late 1970s, perhaps as a result of the advent of nitrites—which are used at older ages than most of the other inhalants. However, when the use of nitrites declined during the 1980s, and again in the late 1990s, the noncontinuation rates for experienced users failed to increase.
- Note the sharp rise in the late 1980s in the noncontinuation rates for *cocaine* and *crack*, even among these more experienced users. The noncontinuation rates peaked in 1991

before falling back as the use of these drugs became more popular. After about 1996, the noncontinuation rate rose modestly.

## **IMPLICATIONS FOR PREVENTION**

Whenever prevention programs are designed—whether for schools, families, communities, or the media—questions arise as to what *should* be prevented and what *can* be prevented. While it is axiomatic that the initiation of use should and can be prevented, there is considerably less consensus as to whether the discontinuation of use is a realistic goal. We believe the results just presented help to inform that debate considerably.

It is clear that the totality of social forces that brought about the large declines in drug use during the 1980s and the substantial increases in use during the 1990s operated through their effects on *both* initiation rates and noncontinuation rates. Put another way, the decreases and subsequent increases in annual and 30-day prevalence of use rates were considerably larger than could be explained by fluctuations in initiation rates alone. *These findings show that noncontinuation can and does change appreciably and, therefore, that any comprehensive prevention strategy should include increasing cessation as one of its objectives—particularly cessation from early stage use, as we discuss next.*

It is important to distinguish among users at different levels of involvement. A comparison of the rates in Table 5-7a, based on all previous users, and Table 5-7b, based only on people who reported having used a given drug 10 or more times, is highly instructive. *Clearly, very appreciable proportions of beginning users can be dissuaded from continuing their use; but once they have reached a certain level of involvement (even as few as 10 occasions of use), only very modest proportions have been so dissuaded—even in the best of times. This makes early intervention not only a viable goal for prevention but also a particularly important one.*

## **COMPARISONS AMONG SUBGROUPS IN TRENDS IN PREVALENCE**

This section provides trend comparisons for key population subgroups defined on the following six dimensions: gender, college plans, region of the country, population density, socioeconomic status, and racial/ethnic group. In general, we will focus on the results from twelfth graders, because there is a considerably shorter trend interval available for eighth and tenth graders. Appendix D to this volume contains tables providing trends for these various subgroups on nearly all drugs. The tables are organized by drug, and data are provided for all three grade levels. There exists a matching set of figures showing for all three grade levels each drug's use trends by subgroup on each dimension (e.g., males vs. females or college-bound vs. noncollege-bound, etc.). However, because of their sheer number, these figures are not included in the present volume. They may be accessed on the Monitoring the Future Web site at [www.monitoringthefuture.org](http://www.monitoringthefuture.org). (Click on "Publications" and then, under "Occasional Papers," locate Occasional Paper No. 59.<sup>53</sup>)

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<sup>53</sup>Johnston, L. D., O'Malley, P. M., & Bachman, J. G. (2003). *Demographic subgroup trends for various licit and illicit drugs, 1975-2002*. (Monitoring the Future Occasional Paper No. 59). Ann Arbor, MI: Institute for Social Research.



### Gender Differences in Trends

- Trends in the proportion of males and females who used *any illicit drug* in the prior year have differed some. Annual prevalence rose among males between 1975 and 1978, from 49% to 59%, and then declined steadily to 29% by 1992 (see Figure 5-7). Use among females peaked later, increasing from 41% in 1975 to 51% in 1981 and then dropping to 25% by 1992. (If amphetamine use is not included in the statistics, use by females peaked earlier—in 1979—and then declined as well.) Both male and female rates were up considerably by 1997, to 44% and 40%, respectively. Both have declined a bit since then.
- In the lower grades, although trends tend to remain fairly parallel, females have generally had a slightly higher prevalence of use of *any illicit drugs other than marijuana*, whereas in twelfth grade the opposite has been true. (See Tables D-3 and D-4 in Appendix D.)
- Most of the gender differences mentioned in chapter 4 for individual classes of drugs have remained relatively unchanged over the past 28 years—that is, any trends in overall use have been fairly parallel for males and females. There are, however, some exceptions (see Appendix D for the detailed tables or Occasional Paper No. 59 for the figures).
- The absolute differences between genders in *marijuana* use narrowed somewhat among twelfth graders between the late 1970s and mid-1980s—a period of substantial decline. Their use rates then declined in parallel from 1986 to 1992. At all three grade levels, both genders also showed a several-year increase in marijuana use after 1992. During this interval, the gender difference grew somewhat larger again for twelfth graders. This pattern, in which a longstanding difference between subgroups tends to enlarge in periods of increasing use and to diminish during declines in use, can be seen for a number of other cross-break variables in addition to gender (see, for example, Figure 5-10b).
- This certainly was the case for *inhalants*, though the direction of the gender difference changed between grades. In eighth grade, females tend to have higher rates of use than males; the difference was largest in the peak years of use, the mid-1990s, but was eliminated by 2002. In tenth grade, males have tended to have highest usage rates; the differences were again greatest in the mid-1990s but were just slightly reversed by 2002. At twelfth grade, males have consistently had considerably higher rates of inhalant use, though the differences were greatest in the mid-1990s when use was highest.
- Between 1975 and 1977, there was a small gender difference in *tranquilizer* use for twelfth graders (females used them more frequently than males). This difference had virtually disappeared by 1978, and there was no gender difference for some 14 years (through 1992); but use among males rose more after 1992, opening a gender difference in which use by males has been higher. In eighth grade there has been a consistent gender difference since 1991, with slightly higher use among females. In tenth grade, tranquilizer use among females tends to be equal to or higher than use among males.

- Among seniors, gender differences in *cocaine* use were greatest in the peak years of use (1979 through 1986): male use was higher and then diminished sharply during the ensuing decline phase. The difference shrank considerably, but males were still higher. After 1992, the difference widened again as use increased more among males; but as a turnaround began after 1999, some convergence has once again begun to occur. There have been no appreciable gender differences in cocaine use in eighth or tenth grades since 1991, when data were first available.
- The gender differences in *crack* use are very similar to those for cocaine use overall: there have been higher rates of use among male twelfth graders compared to females. (This is true since 1986, when data were first available. Use grew a bit more among twelfth-grade males after 1992 but declined more since the turnaround after 1998). There has been little difference among eighth and tenth graders in the trends for the recent time intervals for which data are available (since 1991).
- Regarding *amphetamine* use by twelfth graders, a slight gender difference emerged in 1980 and 1981, using the original version of the question; but the revised question introduced in 1982 (further clarifying that non-prescription stimulants should be omitted) showed no gender difference. This strongly suggests that over-the-counter diet pills accounted for the higher use among females in those two years. Since 1982, the rates for both genders have remained very close, showing a substantial decrease in use through 1992 and a modest increase in use since then. In both eighth and tenth grades, females consistently reported higher use than males. Females had a sharper increase in use from 1992 to 1996, when use was rising, and a sharper decrease in use in the decline from 1995 or 1996 to 1999.
- The use of *ice* (data available only for twelfth graders) has been consistently higher among males, rising more among males through 1996 than among females.
- Trends for the two genders in the use of *narcotics other than heroin* converged during a long period of decline in use among seniors from 1979 to 1992. (Males had always had higher rates of use.) However, males showed a much sharper increase in use after 1992, once again opening a substantial gap.
- Among twelfth graders the gender differences in *alcohol* use narrowed slightly between 1975 and 1987. For example, the 30-day prevalence rates for males and females differed by 13 percentage points in 1975 (75% versus 62%, respectively), but that difference was halved (to 7 percentage points) by 1987. (In 2002 the difference was 7 percentage points.) Although substantial gender differences in *daily use* and *occasions of heavy drinking* still remain, by 1993 differences had narrowed there also (Figures 5-5 and 5-6a). For example, between 1975 and 1993 the proportion of males who reported having had five or more drinks in a row during the prior two weeks showed a net decrease of 14 percentage points (49% to 35%), whereas such use among females decreased by only 5

percentage points, from 26% to 21%.<sup>54</sup> By 1998, rates for both genders had risen some, to 39% and 24%, respectively, opening the gap a little. Since 1998 both genders have shown some decline, but it has been sharpest among males (which has been true at all three grade levels). In general, the gender difference has been less at tenth grade and less still at eighth grade.

- On one of the six questionnaire forms administered to twelfth graders, respondents are asked separately about their use of *beer*, *wine*, *hard liquor*, and *wine coolers*.<sup>55</sup> The answers to these questions reveal that differences in beer consumption account for much of the large gender difference in occasions of heavy drinking: 34% of 2002 senior males (versus 18% of the females) reported having had five or more beers in a row during the prior two weeks. Males were also more likely than females to report having had five or more drinks of hard liquor (27% for males versus 24% for females) but only a bit more likely to have consumed wine that heavily (4.6% for males and 4.1% for females). This pattern—a large gender difference in the heavy use of beer, a smaller difference in the heavy use of hard liquor, and a much smaller difference in the heavy use of wine—has been present throughout the study, with little systematic change over time. In 1988, questions on wine coolers were added and here the gender difference was reversed, with females reporting slightly higher rates of heavy drinking of wine coolers (11.4% for females vs. 7.2% for males in 2002).
- In the lower grades, male and female *alcohol* consumption rates are more equivalent and have remained so since first measured in 1991. Unlike the twelfth graders, there is virtually no gender difference in annual or 30-day prevalence of any use of alcohol or in the annual prevalence of *having been drunk*. These gender differences seem to emerge with age, as is the case for many of the drugs. Emerging differences with age also holds true for binge drinking in the prior two weeks. The data consistently have shown only a small gender difference in eighth grade, a modest one in tenth grade, and a large one in twelfth grade. The same pattern has been true for self-reported drunkenness (see Tables D-48 through D-51). In the last few years, however, the gender differences have decreased somewhat, particularly in the upper grades, as use among males has declined more.
- In 1976 we observed that, among twelfth graders, females had caught up to males in daily *cigarette* smoking and by 1977 had exceeded them (see Figure 5-5). Between 1977 and 1981, both genders showed a decline in the prevalence of such smoking, but use among males dropped slightly more, resulting in females maintaining higher rates of daily smoking until 1990. However, the gender difference was declining in the latter half of the 1980s, as male use began to rise gradually and female use declined a bit. The increase in daily smoking among males was greater in the 1990s, and female use did not begin to rise until after 1992. The net result was a crossover of the two lines for daily prevalence of

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<sup>54</sup>It is worth noting that the same number of drinks produces a substantially greater impact on the blood alcohol level of the average female than the average male because of gender differences in the metabolism of alcohol and in body weight. Thus, gender differences in the frequency of actually getting drunk may not be as great as the heavy drinking statistics would indicate, since they are based on a fixed number of drinks.

<sup>55</sup>Tabular data on these behaviors are not reported in this volume.

use in 1991, followed by a roughly parallel increase from 1992 to 1997. Both genders have declined sharply and fairly parallel since 1997.

At the eighth- and tenth-grade levels, there has been rather little gender difference in 30-day or daily smoking levels, though eighth-grade girls had slightly higher rates in the mid- and late 1990s (30-day use) and late 1990s (daily use). Both genders moved up sharply in the early 1990s until 1996, and both have shown a considerable decline since.

- Very large gender differences in the use of *smokeless tobacco* have been consistently observed at all grade levels, with much higher rates among males. Since 1994 there has been a substantial decline overall in use of smokeless tobacco among eighth-grade males (their 30-day prevalence dropped from 12.8% in 1994 to 6.7% in 2000), a considerable drop among tenth-grade males (from 19.2% to 11.4% over the same period), and since 1995, a similar decline at twelfth grade (from 23.6% in 1995 to 14.4% in 2000). In 2001, however, males at all grades showed a pause in the decline, which resumed in 2002. (See Tables D-58 and D-59 in Appendix D.) Since girls' use fluctuates rather little because it is so low, the gender differences rise and fall with the changes in use by males.
- *Steroid* use is also much higher among males, and the trends have differed somewhat for males and females. From 1991 to 1995 (or 1996 in the case of the tenth graders) eighth- and tenth-grade girls showed a gradual increase in their steroid use, while use among boys declined some or held steady. From 1996 through 1999 (or 2000 in the case of the tenth graders) eighth- and tenth-grade boys showed a much greater increase in use than did girls in those grades, widening the gender gap. Girls, however, have shown a fairly steady increase in their use of steroids from the early 1990s through 2002, despite their low levels relative to boys.

Data are available for a little longer period for twelfth graders (since 1989). Both genders showed a decline in steroid use from 1989 through 1992, then some increase for a couple of years. Both genders showed some rise in the late 1990s through 2001 for the males and through 2002 for the females. Overall, the gender difference in twelfth grade is about as large in 2002 as it has been in the past.

### **Trend Differences Related to College Plans**

It is important to realize that the proportion of young people expecting to attend college has risen quite dramatically over the past 28 years covered by this study.<sup>56</sup> In the mid-1970s, only about half of twelfth graders surveyed said that they “definitely would” or “probably would” complete a four-year college program. (They constitute the “college-bound” in the current discussion.) By the late 1990s, however, over three quarters of graduating seniors met the definition for being college-bound. This means that the two groups compared here are changing proportions of the

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<sup>56</sup>For a description of changes in the demographic makeup of the MTF samples and discussion of their implications for substance use, see Johnston, L. D. (2001). Changing demographic patterns of adolescent smoking over the past 23 years: National trends from the Monitoring the Future Study. In National Cancer Institute, *Changing adolescent smoking prevalence: Where it is and why* (pp. 9-33). Smoking and Tobacco Control Monograph No. 14. Bethesda, MD: U.S. Department of Health and Human Services, National Institutes of Health, National Cancer Institute. (NIH Pub. No. 02-5086).

total population and, therefore, do not represent exactly comparable segments of the population across time.

There has been rather little such upward drift in college plans during the 1990s at lower grade levels, but generally 78% to 90% of each class already expects to attend college. Whether or not these expectations are realistic, the reader is reminded that at these lower grades the noncollege-bound constitute a very small proportion of the whole class.

- Both college-bound and noncollege-bound students have shown fairly parallel trends in overall *illicit drug use* over the years (see Figure 5-8), with the noncollege-bound consistently having the higher rate of use.<sup>57</sup>
- Changes in the use of the other specific drug classes also have been generally parallel for the two groups since 1976, with only minor exceptions (see Appendix D for comparisons on the various drugs).
- While changes in *marijuana* use have been quite parallel for the two groups at all three grade levels, it is noteworthy that most of the gradual decline among eighth graders that has occurred since 1996 has occurred among the college-bound.
- Between 1983 and 1986, annual *cocaine* use increased very little among the college-bound seniors but rose by about one quarter among the noncollege-bound seniors, very likely due to the greater popularity of *crack* among the noncollege-bound. From 1986 through 1993, both groups showed large declines in use and some convergence in their rates of cocaine use. During the period of increasing use in the 1990s, the differences enlarged again, particularly in the lower grade levels. Just as the increase in cocaine use was sharper among the noncollege-bound through most of the 1990s at all grade levels, the declines between 1998 and 2000 or 2001 were also sharper.
- As the overall prevalence of use of many drugs fell through 1992 among twelfth graders, there was some convergence of usage rates between the college-bound and noncollege-bound, due to a greater drop in use among the noncollege-bound. This was true for *tranquilizers*, *sedatives*, *methaqualone*, *amphetamines*, *barbiturates*, *nitrite inhalants*, *hallucinogens other than LSD*, *LSD*, and *narcotics other than heroin*. But as the use of several of these drugs began to increase after 1992, the differences grew larger for many of them at all grade levels (e.g., LSD, psychedelics other than LSD, amphetamines, and tranquilizers). The increases were sharper, and in some cases started earlier, among the noncollege-bound.
- For many years there was only a modest absolute difference in the low annual *heroin* prevalence rates observed in twelfth grade for the college- and noncollege-bound (the college-bound were lower). In general, however, the noncollege-bound have been about twice as likely to have used heroin in the prior year. (See Table D-24 in Appendix D.)

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<sup>57</sup>Because of excessive missing data in 1975 on the variable measuring college plans, group comparisons are not presented for that year.

At the lower grade levels there has been a larger proportional and absolute difference in heroin use between these two groups, and in both grades the noncollege-bound group showed a sharper rise in heroin use in the 1990s than did their counterparts who said they expected to complete four years of college (Table D-23). That increase was particularly sharp among the noncollege-bound eighth graders (who now comprise only about 10% of the eighth-grade sample). The noncollege-bound have considerably higher rates of using heroin, particularly using with a needle (see Tables D-25 through D-28).

- The noncollege-bound consistently have had higher rates of *LSD* use than the college-bound in all years measured at all three grade levels, and their use has generally moved in the same direction over time (see Tables D-11 and D-12). The differences between them enlarged at all three grade levels during the 1990s as use increased, particularly in the lower grades. In eighth grade, the small noncollege-bound stratum has been three to five times as likely to use LSD as their peers have. During the decline phase in LSD use over the last several years, the differences have begun to narrow some, but they are still quite substantial.
- The use of *ecstasy (MDMA)* among seniors started out higher among the noncollege-bound in 1996, the year it was first measured, but from then until 2000 the rates of use were fairly close. In the lower grades, however, the differences have been larger and more consistent. Both groups showed an increase in 2000 and 2001 at all grade levels, but the increases were considerably sharper among the noncollege-bound, particularly in the lower grades. (As Tables D-15 and D-16 show, these figures are based on relatively low case counts, making one-year subgroup differences in trends potentially unreliable.)
- For annual *alcohol* prevalence, the noncollege-bound have consistently been higher than the college-bound, though the differences have generally not been as large in twelfth grade as in the lower grades. Between 1992 and 1993, the gap at all three grade levels widened due to a greater drop among the college-bound. Because the enlarging of the gap coincided with the revision of alcohol-use questions (see footnote in “Trends in Prevalence of Use 1975-2002: Twelfth Graders” section of this chapter), it is likely that the revision contributed, perhaps substantially, to the enlarging. This greater differential has remained in the years since. The proportional differential in all of the different alcohol measures is greatest at eighth grade, still substantial but less at tenth, and least at twelfth. (The question revision, instructing respondents to omit occasions in which they had no more than a few sips, appears to have affected the annual prevalence measure considerably more than it did the other alcohol use measures.)
- Among twelfth graders, the *binge drinking* rates of the two groups converged modestly from 1981 to about 1990 (see Table D-51) as the overall prevalence rate declined, though the rate for the college-bound still remained considerably lower. Both groups showed modest increases after 1993; but as use has declined in recent years, the decline has been sharper among the noncollege-bound in all grades.

In eighth and tenth grades there have been large differences in binge drinking rates, and the two groups were diverging during much of the 1990s because the noncollege-bound exhibited a larger increase in binge drinking, whereas the college-bound had a more modest one. Both groups show evidence of a decline in the last year or so (Table D-50).

- At all three grade levels there have been very large differences in the current prevalence of *cigarette* smoking between the noncollege-bound (who have higher rates of use) and the college-bound. (For example, in 2002 the daily smoking rate was more than four times as high among the noncollege-bound eighth graders, at 17.1%, versus 3.9% for the college-bound.) In general, the broad contours of change have been fairly similar for the two groups at the twelfth-grade level, but there was some convergence that occurred roughly over the period 1980 through 1993, as current smoking very gradually declined among the noncollege-bound but gradually increased among the college-bound. In 1980 there was a 17-percentage-point differential in current smoking (40% vs. 22%), which declined to a 10-percentage-point differential by 1993 (37% vs. 27%).

At the eighth- and tenth-grade levels, current smoking rates for the two groups diverged during the early to mid-1990s, with both groups increasing but the noncollege-bound increasing more. Then, at all three grade levels, the college-bound were the first to show a turnaround in current smoking in the mid- to late 1990s, leading their noncollege-bound peers by a year or two. (See Tables D-52 through D-57 in Appendix D for subgroup trends in cigarette smoking.)

- The use of *smokeless tobacco* also has consistently been higher among the noncollege-bound at all grade levels, and the proportional differences have been very large in the eighth and tenth grades. (See Tables D-58 through D-61.) And again, the downturn in use in the mid-1990s began first among the college-bound, followed by their peers a year later at each grade.
- There has been a large and reasonably consistent difference in the rates of *steroid* use (Tables D-62 and D-63) in the two groups at all three grade levels, with the noncollege-bound considerably more likely to use steroids than the college-bound. During the phase of increasing steroid use in the late 1990s, the increases were greatest among the noncollege-bound, enlarging the differences between the groups at all three grade levels.

### Regional Differences in Trends

Data on subgroup trends for the four regions of the country may be found in tabular form in Appendix D in this volume and in graphic form in Occasional Paper No. 59 on the study's Web site, as described at the beginning of this section.

- In all four regions of the country, the proportions of high school seniors using *any illicit drug* during the past 12 months reached their peaks in 1978 or 1979 (see Figure 5-10a and Table D-2 in Appendix D). In the late 1970s and early 1980s, the Northeast region was consistently highest, the South lowest, and the North Central and West in between. Through the 1980s and continuing through 1992, use declined overall. The South maintained its position as having the lowest rate of use, with the other regions having

similar rates of use. From 1992 to 1997, the annual use of any illicit drug increased in all four regions by roughly equivalent amounts, with use in the South remaining lowest. Since then there has been some leveling or decline in annual prevalence in all four regions. Annual prevalence now ranges from a low of 38% in the South to 41% in the West, 42% in the North Central, and 46% in the Northeast.

Among eighth and tenth graders, all regions showed increases in illicit drug use from 1991 to 1996 (Table D-1). As with twelfth graders, leveling or declines have occurred in the most recent years.

- As noted earlier, a major factor in the early rise of illicit drug use other than marijuana (Figure 5-10a) was an increase in reported *amphetamine* use. The rise in amphetamine use among seniors appeared in all four regions; however, the rise in lifetime prevalence of use from 1978 to 1981 was only 6 percentage points in the South, whereas in the other regions the percentages rose between 9 and 12 points. In essence, the South was least affected by both the rise and the fall in reported amphetamine use—a pattern later repeated with cocaine. After 1981 all four regions showed substantial declines in amphetamine use through 1992. After 1992, all regions showed some increase in amphetamine use. Since about 1995, however, the trends have diverged at the different grade levels, though all regions have moved fairly parallel within each grade level. Specifically, use has declined in eighth grade, remained relatively steady in tenth grade, and continued to increase in twelfth grade.
- The long-term *marijuana* trends for twelfth graders generally have shown quite parallel trends in all four regions since 1975, with the Northeast usually having the highest level and the South having the lowest level. Marijuana use rose substantially in all four regions after 1991 for eighth graders and after 1992 for tenth and twelfth graders. Between 1996 and 2002, all regions showed a leveling or turnaround at all grade levels.
- *Cocaine* use has shown very different trends in the four regions of the country, leading to the emergence of one of the largest regional differences observed for any of the drugs. (See Figure 5-10b for differences among twelfth graders in lifetime prevalence of use trends.) In the mid-1970s, there was relatively little regional variation in cocaine use, but as the nation's cocaine epidemic grew, large regional differences emerged. By 1981, annual use had roughly tripled in the West and Northeast, nearly doubled in the North Central, and increased by “only” 26% in the South. This pattern of large regional differences held for about six years, until a sharper decline in the Northeast and the West substantially reduced the differences. At all three grade levels there was a modest overall increase in use in all regions from the early 1990s through 1996 or 1997, followed by a leveling or turnaround in nearly all cases. For most of the years of the study, the West has had the highest level of cocaine use at all three grade levels, but in recent years the differences have not been very large.
- When *crack* use was first measured among twelfth graders in 1986, there were large regional differences, with the West and Northeast having far higher rates than the North Central and South. Its use dropped appreciably in all four regions over the next several



years (though rates did not peak in the North Central until 1987 or in the South until 1989, perhaps due to continued diffusion of the drug to areas that previously did not have access). The declines were large and very sharp in the West and Northeast, both of which initially had substantially higher usage rates than the other regions (as was true for powder cocaine and cocaine use overall). By 1991 little regional difference remained, although the West still had the highest rate of use. After 1991 or 1992 there were increases in all regions, but particularly in the West. Again, the West showed the largest increases and the highest levels of use at all three grades, while the other three regions were fairly similar in their rates of use. All regions showed evidence of a leveling or decline in crack use at all three grade levels in recent years.

- Between 1975 and 1981, sizable regional differences in *hallucinogen* use emerged for twelfth graders, as use in the South dropped appreciably. In 1981, both the North Central and the West had annual prevalence rates of use that were about 2½ times higher than the South (10.3%, 10.4%, and 4.1%, respectively) while the Northeast rate was 3 times as high (12.9%). After 1981, through the remainder of the decade, hallucinogen use dropped appreciably in all regions except in the South (which continued to have the lowest rate), considerably reducing these regional differences. In the early 1990s, use was still consistently lower than average in the South, but the differences among the other three regions were small. A considerable increase in use in the South between 1991 and 1995 brought its annual rate close to the level of the other regions. Since the mid-1990s there has been a decline in all regions.
- Among high school seniors, the use of *LSD* has been consistently lowest in the South. Between 1988 and 1993, the use of LSD did not vary much among the other three regions for the twelfth graders, although in earlier years the trend story was quite similar to that described for hallucinogens as a group of drugs. Between 1993 and 1996, use went up quite sharply in the Northeast region, once again creating regional differences. A sharp decline since 1996 in the Northeast, followed by declines in all other regions, diminished regional differences by 2002.

Regional differences in LSD use among eighth and tenth graders have generally been quite small, although the West had the highest rates of use among eighth graders from 1991 to 1998 and among tenth graders from 1991 to 1994. After 1997 the West had a sharp decline in LSD use among eighth graders, which reduced regional differences again. At tenth grade the other regions rose in their use, catching up with the West and eliminating regional differences by 1995. Since then all regions have shown considerable declines in use.

- Between 1996, when *ecstasy (MDMA)* use was first measured, and 1998, use fell some at all grade levels in all regions. (The one exception was the West in twelfth grade, where it remained stable.) In 1999, when ecstasy use increased significantly in grades 10 and 12, by far the largest increase in both grades occurred in the Northeast, although all regions showed some increase in one or both of those grades. Then, in 2000 use rose some in the other three regions at all grade levels, including eighth grade, but not in the Northeast; the rise was particularly sharp in the West among twelfth grade. In 2001 the North Central

region showed a sharp rise in twelfth grade use, followed by an even sharper drop in 2002. The South, the only region showing further increase in 2002, had only a fairly small increase in twelfth grade.

- Between 1979 and 1982, **PCP** use dropped precipitously in all regions for twelfth graders. The drop was greatest in the Northeast, which in 1979 had a usage rate roughly double that of all the other regions. In general, PCP use was low and relatively stable from 1982 through 1995. Annual prevalence of PCP increased in the Northeast beginning in 1996; during the interval from 1996 to 1999, PCP use was again higher in the Northeast region than the other regions.
- Among twelfth graders from the mid-1970s through the early 1980s, the Northeast and the North Central had appreciably higher 30-day prevalence and heavy drinking rates of **alcohol** use than did the South and West. From the early 1980s to the early 1990s, all four regions exhibited substantial declines in 30-day alcohol prevalence and occasions of heavy drinking, with the Northeast and North Central declining most. As a result, the regional differences diminished somewhat; however, the relative positions of the four regions have remained essentially unchanged. During the last three years, alcohol use has started to decline in all regions at all grade levels. The South and the West still have the lowest rates and the Northeast and North Central the highest.

At the lower grades there has been rather little regional difference for 30-day prevalence and for heavy drinking since 1991, when data were first collected on these measures, and the trends have generally been quite similar across regions.

- Among twelfth graders the West had a considerably lower 30-day prevalence of smoking from the mid-1970s (when the study began) through the mid-1980s, though sharper declines in the South brought its smoking rate down near to the West's by 1984. It is noteworthy that from 1992 to 1994—a period of overall increase in **cigarette** smoking—the West was the only region that did not show an increase in daily smoking in twelfth grade (although by 1995 use had begun to increase in the West as well). This lack of increase in the West may well be due to the fact that California conducted a major anti-smoking campaign in those years. There also was a similar lag and a lower increase in the West at tenth grade than in other regions; the eighth graders in the West showed the least increase compared to other regions and also remained the lowest of the four regions. Despite the fact that the regional differences were more pronounced during the 1990s due to this divergence by the West, all regions at all grade levels have shown an important drop in smoking rates since the mid- to late 1990s.
- The use of **smokeless tobacco** has generally been highest in the South for eighth and tenth graders, followed closely by the North Central. Among twelfth graders, however, use in the North Central rose sharply after 1989, giving that region the highest rates in nearly all of the years since, with the South generally ranking second. During the late 1990s, use of smokeless tobacco fell in all regions in all three grades.

- In general, the regions have moved fairly parallel with regard to *steroid* use at all three grade levels. (Note that, because of the smaller samples on which this question is based in twelfth grade compared to other drugs, the trend curves for that grade are more uneven.)

### Trend Differences Related to Population Density

Appendix D contains tabular trend data on all drugs for the three levels of community size distinguished here. (Their definitions may be found in Appendix B.) Selected figures are presented in this chapter, and a complete set of figures that are far easier to read than tables may be found in Occasional Paper No. 59 on the study Web site, as described at the beginning of this section on subgroup trends.

- Proportions of seniors using *any illicit drug* in all three levels of community size peaked in 1979, at which time there were appreciable differences in use rates, with the large cities having the highest rate, and the non-urban areas the lowest (see Figure 5-11a). Use rates declined from 1979 to 1992, when the annual prevalence in all three areas converged at 27%, virtually eliminating the prior differences. (Most of the narrowing was due to changing levels of marijuana use.) There were increases in use of any illicit drugs among all three levels of community size after 1992, but the increases were smallest among the nonmetropolitan segment, leaving that segment with slightly lower rates in recent years than the other two groups. These increases halted after 1995 in the large metropolitan areas and after 1997 in the other metropolitan areas and the nonmetropolitan areas.
- At the lower two grade levels there has been rather little difference in use as a function of community size, though the “other metropolitan areas” have had the highest levels through most of the period since 1991.
- The overall proportion of twelfth-grade students involved in the use of *any illicit drug other than marijuana* peaked in communities of all sizes in 1981 and then fell until 1991 or 1992 (Figure 5-11a). Since 1989, the large metropolitan areas generally have shown slightly lower rates than the other two strata—a reversal of earlier differences. After 1991 or 1992, the rates for all three strata started to increase gradually, though the increase halted in 1996 for the large metropolitan areas, after 1997 for the other metropolitan areas, and after 1999 in the nonmetropolitan areas.
- At grades 8 and 10, the large metropolitan areas have generally had somewhat lower rates of use since 1991 than the other two strata, though their trend lines have been fairly parallel.
- During the years in which the use of various drugs increased, significant differences emerged among the three levels of population density in the use of a number of specific classes of drugs. During the 1980s, those differences narrowed as use rates declined. Figure 5-11b shows the trends for the annual prevalence of use of *alcohol, marijuana, and cocaine*: The differences among the three population density strata were greatest

(with large cities at the top) in the peak years of use for each drug, but as use declined, the three strata tended to converge.

- For example, the increase in *cocaine* use between 1976 and 1979, although dramatic at all levels of population density, was clearly greatest in the large cities. Between 1980 and 1984, use was fairly stable in all groups, but in 1985 it showed a rise in all groups. In 1986, use stabilized again in all groups, and in 1987 it began a long-term decline. Just as the earlier rise had been greatest in the large cities, so was the decline (see Figure 5-11b). By 1991, there were only small differences by population density in cocaine use among seniors, and this remained the case through 1998. Then use started down in the large metropolitan areas a year before it did in the other two strata, resulting in some differences in usage levels. The large cities now have the lowest annual prevalence for cocaine use at twelfth grade, instead of the highest—a reversal of the differences in all of the years prior to 1989. There have been very small differences in cocaine use at the eighth- and tenth-grade levels since 1991, when data were first available.
- In the late 1980s, the use of *crack* among twelfth graders declined more in the large cities than in the smaller areas. Between 1986, when it was first measured among twelfth graders, and the low point in 1991, annual use was down by 4.7 percentage points (from 5.9% to 1.2%) in the large cities, by 1.8 percentage points (to 1.7%) in the other cities, and by 2.3 percentage points (to 1.2%) in the nonmetropolitan areas. In other words, the previous differences virtually disappeared. There were increases after 1991 or 1992 in all three grades, although use in the nonmetropolitan areas rose more than in the other two strata. The result was that for the last several years, the nonmetropolitan areas have had the highest rates of crack use at all grade levels. The decline in use that began in the late 1990s, which was particularly sharp in the nonmetropolitan areas, has almost eliminated the differences among these strata in the lower grades. In twelfth grade, however, differences remain, with the nonmetropolitan areas having the highest level of use and the large MSAs the lowest.
- In the early years of the study, *marijuana* use consistently had been correlated positively with community size among twelfth graders, with the greatest differences occurring in 1978, one of the peak years of usage (Figure 5-11b). After that, both the absolute and the proportional differences diminished as use declined quite steadily through 1992. Between 1991 or 1992 and 1997, communities in all size categories showed a turnaround in marijuana use; in fact, the turnaround began a year earlier in the nonmetropolitan areas. As use increased, the differences began to re-emerge, though this time the differences are mostly between the two metropolitan strata versus the nonmetropolitan areas (which have a lower prevalence).

At the lower grades the differences among strata have been small, and they have tended to trend in parallel.

- In general, the three levels of population density have shown fairly equivalent rates of *heroin* use and quite parallel trends.

- In the latter 1970s, the use of *narcotics other than heroin* among twelfth graders was consistently highest in the large metropolitan areas and lowest in the nonmetropolitan areas. All groups declined in use through the early 1990s, then increased again; however, the differences among groups were diminished such that by 1995 the annual prevalence for all three groups converged at 5%. All three strata showed an increase from about 1993 through 1999 or 2000. By 1999, the large metropolitan areas stayed at 5%, but the other metropolitan and the nonmetropolitan areas had both increased to 7%, thus almost reversing the differences that existed two decades earlier. However, in 2000 a continuing increase in use in the large metropolitan areas, combined with steady use in the other strata, virtually eliminated the differences observed since 1996.
- The use of *ice* (crystal methamphetamine) was added to the questionnaires (for seniors only) in 1990. While use in all strata rose for some years, it rose most in the large cities, where it peaked in 1996 at a rate well above the less-urban strata. However, use in the large cities declined rapidly, and since 1998 there has been little difference in use among the three strata.
- *Barbiturate* use is reported only for twelfth graders. The rates among the three population density strata were very close and declined very much in parallel from 1975 through 1988. Then, the large cities declined further and developed the lowest rate of use. All three strata had an increase in use in the 1990s, but the large metropolitan areas continued to have the lowest rate of use. However, the picture changed slightly in recent years, when use in the nonmetropolitan areas declined, nearly eliminating differences among the strata.
- Among twelfth graders, there was a greater decline in 30-day *alcohol* prevalence in the large cities from 1980 to 1983, which virtually eliminated the previous differences among the three strata. (See Table D-47 in Appendix D.) From 1983 to 1992 or 1993, there were essentially parallel (and substantial) declines in all three strata. Since the early 1990s, alcohol use largely leveled out in all strata at all three grade levels before starting to decline in all. At the lower grades the trend lines have been fairly parallel and about equivalent for all three strata.
- For occasions of *heavy drinking*, the trends for the three grades are fairly similar to those for 30-day prevalence, except that the nonmetropolitan areas tended to have the highest rates of this behavior in the 1990s at all grade levels. (See Tables D-50 and D-51 in Appendix D.) This high rate of use emerged at eighth grade due to a larger increase in heavy drinking in the nonmetropolitan areas than in the other strata. It has existed consistently since 1991 at tenth grade, and it emerged at twelfth grade because the decline in heavy drinking leveled off sooner (after 1990) in the nonmetropolitan areas. All three strata are fairly similar for twelfth graders in 2002, however.
- In the early to mid-1990s, there were increases in *cigarette* smoking in all three strata for all three grade levels. (See Figure 5-11c and also Tables D-52 and D-53 in Appendix D.) The increases were particularly sharp and lasted longer in the nonmetropolitan areas, thus creating a greater difference than previously existed with use highest in the non-

metropolitan areas and lowest in the large cities. In 1997, use began declining in the eighth and tenth grades in the large and smaller cities, while it continued to increase in nonmetropolitan areas. That increase continued in 1998 and 1999 in eighth grade as the other two strata continued to decline, creating quite a difference in their smoking rates. Among tenth graders a similar difference emerged, but smoking finally began to decline in 1999 in the nonmetropolitan areas, as well. In twelfth grade all three strata have shown some decline over the past five years, but still the nonmetropolitan areas clearly have the highest smoking rate.

- The remaining drugs, including *smokeless tobacco* and *steroids*, show little systematic variation in *trends* related to population density.

### **Differences in Trends by Socioeconomic Status**

The measure of socioeconomic status used in this study—namely, the average educational attainment level of the respondent's parents—is described in the previous chapter and in Appendix B. Five different strata are distinguished, and the students are sorted into those strata based on the educational level of their parents. It should be noted that the overall average educational level of parents has risen over the years; thus each of the five categories contains a slowly changing proportion of the sample. Figures 5-12a through 5-12f show trends for six selected measures of drug use. Trend data, by subgroup, for all drugs may be found in tabular form in Appendix D and in graphic form in Occasional Paper No. 59 on our Web site, as described at the beginning of this section.

- In general there has been little change over time in the relationship between the socioeconomic status (SES) of the family of origin and prevalence of use rates for most of the drugs.
- *Marijuana* use, for example, has had little association with socioeconomic level throughout the life of the study, except that the lowest SES stratum consistently has had a slightly lower prevalence of use rate than all the others among twelfth graders. All levels showed similar declines in use from the late 1970s through 1992 (Figure 5-12a), and all levels showed comparable increases after 1992 in all three grades, before leveling and/or declining a bit in the late 1990s and early 2000s. At the eighth-grade level, there tends to be more of a negative correlation between marijuana and parental education level, and it grew stronger in the mid-1990s. The same occurred in tenth grade, as well, though the differences are not as large.
- *Cocaine* has shown the largest and most interesting change in its association with socioeconomic status (Figure 5-12b). During the incline phase of the cocaine epidemic—from 1975 through 1981—a strong positive association evolved among high school seniors between cocaine use and SES, with the greatest increase in use occurring in the highest SES group and the least increase in the lowest SES group. From 1981 to 1985, use in the top SES levels declined some, while use in the lowest SES group increased substantially between 1982 and 1985—an increase that likely reflected the introduction of the less expensive form of cocaine, *crack*.

The net effect of these changes was the elimination of SES group differences in cocaine use; since 1985, there has been little or no systematic association between overall cocaine use and socioeconomic status. The strong positive association that existed for roughly eight years disappeared. All SES levels showed a substantial decrease in cocaine use between 1986 and 1991, with little differential change. In the upturn between about 1991 and 1997, some reversal in the relationship emerged, with the lowest SES group now having the highest use.

In the lower grades since 1991, when data were first available, the use of both crack and other cocaine has been highest in the lowest SES level. Otherwise, the differences among strata have been small. (This also has been true in twelfth grade for crack since 1992.)

- Aside from the fairly consistent, slightly lower level of *LSD* use among the lowest SES group than among the four other strata, there was little association at the twelfth-grade level between SES and the use of this drug over the interval from 1975 through about 1984 (Figure 5-12c). As the overall usage level for LSD gradually increased after 1984, a modest positive association emerged, although it diminished some in degree by the mid-1990s and was virtually erased during the downturn in use in the years since. In eighth grade, the lowest socioeconomic stratum has had the highest usage level, with hardly any other differences. There have been practically no systematic differences in tenth grade by socioeconomic status.
- Little difference is observed across the five SES categories in reported use of *inhalants*. (See Tables D-7 and D-8 in Appendix D.) There has been virtually no association in the lower grades and no systematic change in association.
- Overall, among twelfth graders, little difference has existed among the SES groups in their trends in *amphetamine* use (see Figure 5-12d). In earlier years (1976 through 1990), there was usually a slight curvilinear relationship, with the two highest and the lowest SES groups tending to be low in amphetamine use. From 1991 through 1995, the two or three highest SES groups had the lowest rates of amphetamine use. Since 1992, increases in use have occurred in all strata. In eighth and tenth grades, amphetamine use generally has been slightly negatively correlated with SES, and while the increases in use through 1995 or 1996 occurred in all groups, they were sharpest in the lower two strata. More recently, all strata in grades 8 and 10 have shown some decline in use over the last several years.
- The picture for *alcohol* use among high school seniors is similar to the one described earlier for marijuana: that is, there has been little difference in the 30-day prevalence rates among the SES strata except that the lowest stratum consistently has had a lower prevalence than all the others; and all strata have moved approximately in parallel. The story for *binge drinking* is similar (Figure 5-12e).
- At the lower grade levels, however, the story is a bit different. Binge drinking generally has been inversely correlated with SES, and the association has been strongest in the eighth grade. Trends for the various strata have generally been parallel, nonetheless.

- Prior to 1981, daily use of *cigarettes* among twelfth graders generally was ordinal and inversely related to SES, with each successively higher SES group smoking less (Figure 5-12f). Between 1981 and 1990, this ordinal relationship diminished substantially because (a) the two highest SES groups showed some gradual increase in use, (b) the next two strata remained unchanged, and (c) the lowest SES group showed a continuing decline in use, which brought it from the highest smoking stratum to the lowest (probably due to its racial composition, as will be discussed in the next section). The net result of this and other trends was a considerable narrowing of SES differences among twelfth-grade students. From 1992 to 1997 all strata showed an increase in daily smoking. From 1997 to 2002, there were sharp declines in smoking in the two highest SES strata and a later and slower downturn in the other strata—once again opening up some class differences. It is possible that the introduction of the Joe Camel advertising campaign in 1988 helped account for the closing of the socioeconomic gap in the late 1980s and that its termination in 1997 helped account for the reemergence of that gap. We know that between 1986 and 1997, the rise in smoking was sharper among twelfth-grade boys than among girls, and that the Camel brand was particularly popular among boys, as well as among those from the more educated strata.<sup>58</sup>

In eighth and tenth grades, all strata showed an increase in their 30-day smoking rates from 1991 to 1996. The lowest SES stratum was the last to show a downturn. In eighth grade, smoking has been consistently negatively correlated with SES.

### Racial/Ethnic Differences in Trends

While the three major racial/ethnic groups examined here—Whites, African Americans, and Hispanics—have quite different levels of use of some drugs, they have similar trends in almost all drug use patterns.<sup>59</sup> (Cigarette use is an exception, as discussed later.) Data have been examined here for these three groups using two-year moving averages of prevalence in order to provide smoother and more reliable trend lines. Even then, they tend to be a bit “bumpy,” especially for Hispanics, for whom we have the least data and for whom there is a higher degree of clustering by school in the sample. See Appendix D for the racial/ethnic trend data on all classes of drugs and Occasional Paper No. 59 on the Monitoring the Future Web site for the graphic presentation of these trends, following the directions given at the beginning of this section on subgroup differences.

- Figure 5-13a shows the trends in annual *marijuana* use for the three groups and illustrates that they have moved generally in parallel—particularly during the long

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<sup>58</sup>Johnston, L. D., O'Malley, P. M., Bachman, J. G., & Schulenberg, J. E. (1999). *Cigarette brand preferences among adolescents*. (Monitoring the Future Occasional Paper No. 45.) Ann Arbor, MI: Institute for Social Research.

<sup>59</sup>We have published articles examining a larger set of ethnic groups that used groupings of respondents from adjacent five-year intervals to obtain more reliable estimates of trends. See Bachman, J. G., Wallace, J. M. Jr., O'Malley, P. M., Johnston, L. D., Kurth, C. L., & Neighbors, H. W. (1991). Racial/ethnic differences in smoking, drinking, and illicit drug use among American high school seniors, 1976-1989. *American Journal of Public Health, 81*, 372-377. See also Wallace, J. M., Jr., Bachman J. G., O'Malley, P. M., Johnston, L. D., Schulenberg, J. E., & Cooper, S. M. (2002). Tobacco, alcohol and illicit drug use: Racial and ethnic differences among U.S. high school seniors, 1976-2000. *Public Health Reports, 117* (Supplement 1), S67-S75.



decline phase. Generally, among twelfth graders, Whites have had the highest level of use and African Americans the lowest, with Hispanics in between. Use fell more in the decline phase (roughly 1979-1992) among African Americans than it did in the other two groups, expanding the differences among them. But use also rose more among African American twelfth graders in the “relapse phase” of the epidemic (roughly 1992-1997), once again narrowing the gap. Their use also leveled earlier (in 1997) than it did among Whites (in 1999). (Recall that we are using two-year averages, which slightly moves some of the inflection points from what we have been discussing previously.) All three groups showed a rise in marijuana use in all three grade levels in the mid-1990s, followed by a leveling or decline in the late 1990s and early 2000s.

While the trends for Whites and Hispanics are quite parallel to each other, their relative positions change across grade levels. In eighth grade, Hispanics have the highest rate of use, while Whites and African Americans are similar and have a considerably lower rate. By tenth grade, Whites have rates of use almost equivalent to Hispanics, and African Americans have lower rates than either Whites or Hispanics. By twelfth grade, Whites quite consistently have had the highest rates, Hispanics slightly lower ones, and African Americans the lowest. (In 2000 there was a slight crossover between Whites and Hispanics.) We believe that differential dropout rates (Hispanics have the highest rate of dropping out) may account for much or all of these shifts in relative position across the three grade levels.

- Figure 5-13a shows the long-term trends for annual *cocaine* use among twelfth graders. It clearly shows that the rise in cocaine use (in 1976-1979) occurred more sharply among Whites and Hispanics than among African Americans. The decline among African Americans appears to have begun earlier, but perhaps of greatest importance, all three groups participated in the sustained decline in cocaine use after 1986. While a little difficult to discern in Figure 5-13a, twelfth-grade Hispanics halted their decline at a higher level than Whites and since then have held fairly steady, with a slight increase in use between 1995 and 1999, whereas use among Whites dropped further but began a sharper rise after 1993. Indeed, there was a convergence of cocaine use rates for Whites and Hispanics in 2002. By way of contrast, cocaine use by African Americans fell to very low levels by the early 1990s and stabilized there. In the lower grades there are large differences among these three racial/ethnic groups in cocaine use, with African Americans consistently reporting very low (and unchanging) rates of use, and Hispanics consistently reporting relatively high rates, with Whites in the middle. Only Whites and Hispanics showed a rise in cocaine use in the early 1990s.
- At the twelfth-grade level there was a crossover of Whites, who formerly had a slightly higher prevalence of use of *cocaine powder*, and Hispanics. Hispanics reached higher levels of use during the peak years of the cocaine epidemic and generally have stayed higher. Also, use among Whites fell more sharply between the late 1980s and the early 1990s. The crossover did not occur for *crack*, however; Hispanics have had the highest rate of use for that form of cocaine since the first measurement in 1987, and African American students have consistently had the lowest. Crack was the dominant form of

cocaine used by African American twelfth graders, which was not true for Whites, even though African Americans had the lowest rates of use of both crack and powder cocaine.

In the two lower grades, use of cocaine powder rose the most among Hispanics from 1991 through 1996 or 1997, whereas over the same interval, use rose some among Whites and very little among African Americans. Hispanics have had considerably higher rates of use than the other two groups at both grade levels. They also have considerably higher use of *crack*. Indeed, at the lower two grade levels, the trends for crack and powder cocaine are very similar to each other.

- At the twelfth-grade level, the rise in reported *inhalant* use (unadjusted for the underreporting of nitrites) occurred about equally among Whites and Hispanics from 1976 through 1995, although Hispanics generally had a lower rate of use than Whites. African Americans, on the other hand, showed practically no increase in their already low levels of use. They now have an annual prevalence that is approximately a third (or less) that of Whites. A similar picture emerges in eighth and tenth grades, except that the increase in the early and mid-1990s among Hispanics and Whites was even steeper than the increase in twelfth grade. Since 1998, the eighth-grade Hispanics have also had slightly higher usage rates than the Whites. There have been important decreases among both White and Hispanic students (as well as among African Americans) in all three grades over the past eight years or so. It is clear from the data on both levels and trends that inhalant drugs have not been popular with African American teenagers. Another class of drugs that has been similarly unpopular with them is hallucinogens.
- With regard to *LSD* and *hallucinogens* in general, African Americans have consistently had far lower rates of use than Whites or Hispanics. Whites have had the highest rate of hallucinogen use for the life of the study at the twelfth-grade level. In the tenth grade, Whites also tend to have a slightly higher level of LSD use than Hispanics. There has not been a consistent difference in eighth grade, although in most years Hispanics have had the highest use.

African Americans also have shown rather little change in their rates of use over the time intervals covered by this study. By way of contrast, both Whites and Hispanics showed sharp increases in LSD use among seniors (after 1989) and among tenth graders (after 1992). Among eighth graders both groups showed an increase (after 1992), which was sharpest for Whites until their use began to decline in 1998, while use among Hispanics continued rising briefly. Both Whites and Hispanics have shown a decrease in LSD use in recent years at all three grade levels, with little change occurring in the very low rates of use among African Americans.

- *Ecstasy*, another drug used for its hallucinogenic effects, also has remained relatively unpopular among African American students at all grade levels. While use rose sharply among both Whites and Hispanics in the late 1990s, the increase among African Americans has been far less and has started from a much lower level. All groups at all grade levels have shown a decline or leveling over the past couple of years in their reported ecstasy use.

- The substantial decline in the use of *amphetamines*, which began among twelfth graders in 1982 and ran through 1992, narrowed the substantial differences among the three ethnic groups somewhat, although all three groups showed some decline. The decline was greatest among Whites, who started with the highest rates, and least among African Americans, who started with the lowest. Hispanics have been about midway between the other two groups. Between 1992 and 2002, there has been some increase in amphetamine use among Whites (Hispanic use also increased between 1992 and 2001) but little among African Americans. In the lower grades, the three groups generally have the same rank order in their levels of amphetamine use; African American students showed little change in their low levels of use since 1991, even though the other two groups showed first an increase and then a decrease in use.
- Among twelfth graders, the substantial differences in the use of *barbiturates*, *tranquilizers*, and *narcotics other than heroin* converged somewhat for the three racial/ethnic groups as use of these drugs declined over a fairly long period. In general, Whites consistently had the highest usage rates in senior year and also the largest declines; African Americans had the lowest rates and, therefore, the smallest absolute declines. During the early 1990s increase in the use of these drugs, Whites showed the greatest increase and African Americans the least—again enlarging the difference between them. The considerable increase in the use of narcotics other than heroin that ran from 1992 to 2002 has been particularly sharp among Whites, while use may have leveled among Hispanics and has been declining for several years among African Americans.
- The 30-day prevalence of *alcohol* use has shown relatively consistent racial/ethnic differences over time at each grade level. Among twelfth graders, Whites have had the highest rates, African Americans considerably lower ones, and Hispanics rates midway between the two. Their cross-time trends have generally been parallel, although Whites showed the greatest decline in drinking between 1988 and 1993, narrowing the difference between them and Hispanics. At tenth grade, Whites and Hispanics have generally had equivalent rates and African Americans substantially lower ones. At eighth grade, Hispanics consistently have had the highest drinking rates, while Whites have fallen in the middle, though the difference between Whites and Hispanics appears to be narrowing.

The trends for *occasional heavy drinking* have been very similar to those just discussed for current drinking, though the absolute rates are lower, of course. African Americans consistently have had appreciably lower rates than the other two groups at all three grade levels. The rates of binge drinking among Hispanic and African American eighth graders have been falling since the mid-1990s, while such drinking among Whites has been falling only since around 2000. (See Figure 5-13b and Tables D-46 through D-51 in Appendix D.)

- *Cigarette* smoking showed quite dramatic differential trends during the 1980s. Among seniors the three racial/ethnic groups had daily smoking rates that were not substantially different in the late 1970s (Figure 5-13b). All three groups showed declines between

1977 and 1981, with the declines somewhat stronger for African Americans and Hispanics, clearly leaving Whites with the highest smoking rates by 1981. After that, African Americans exhibited a consistent and continuing decline through 1993, while rates among Whites increased gradually and rates among Hispanics stayed level. By 1991, African Americans had a rate of daily smoking that was only one fourth that of Whites. After 1992, current (30-day) smoking rose among all three ethnic groups, though the increase was clearly the greatest among Whites.

- In the eighth and tenth grades, all three ethnic groups showed a sharp rise in *daily smoking* use during the 1990s, though all showed some signs of leveling and then decreasing by the mid- to late 1990s. At tenth grade, the increase was sharpest among Whites, similar to twelfth-grade trends, and use among Whites has been substantially higher than among Hispanics, whose use has been substantially higher than that of African Americans. At eighth grade, the smoking rates for Whites and Hispanics have been quite close and both much higher than among African American eighth graders. At eighth and tenth grades, the downturn of the late 1990s began a year or two later among African Americans than it did among the other two groups.
- Summing across the drugs, it may be seen that African American students have the lowest rates of use of virtually all licit and illicit drugs at all three grade levels being examined here. And they have consistently had *exceptionally* low rates of use for particular drugs, including *inhalants*, *hallucinogens* taken as a class, *LSD*, *other hallucinogens*, and *ecstasy*. Further, for the past decade their *cigarette* smoking rates also have been exceptionally low.
- In eighth grade, Hispanic students have tended to have the highest rates of use of a number of drugs, including *marijuana*, *crack*, *cocaine powder*, *heroin*, *tranquilizers*, and *heavy drinking*. However, by twelfth grade the differences between Hispanic and White students narrow considerably, although in 2002 Hispanic twelfth graders had the highest rates of *crack*, *heroin with a needle*, and *ice*. As we have said earlier, we believe that Hispanics' considerably higher rate of school dropouts may do much to explain these changes in ordering across the grade levels.

**TABLE 5-1**  
**Long-Term Trends in Lifetime Prevalence of Use of Various Drugs for Twelfth Graders**

	Percentage who ever used																								'01-'02 change				
	Class of:																												
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998		1999	2000	2001	2002
<i>Approx. N (in 1,000s) =</i>	9.4	15.4	17.1	17.8	15.5	15.9	17.5	17.7	16.3	15.9	16.0	15.2	16.3	16.3	16.7	15.2	15.0	15.8	16.3	15.4	15.4	14.3	15.4	15.2	13.6	12.8	12.8	12.9	
Any Illicit Drug <sup>a,b</sup>	55.2	58.3	61.6	64.1	65.1	65.4	65.6	64.4	62.9	61.6	60.6	57.6	56.6	53.9	50.9	47.9	44.1	40.7	42.9	45.6	48.4	50.8	54.3	54.1	54.7	54.0	53.9	53.0	-0.9
Any Illicit Drug Other																													
Than Marijuana <sup>a,b,c</sup>	36.2	35.4	35.8	36.5	37.4	38.7	42.8	41.1	40.4	40.3	39.7	37.7	35.8	32.5	31.4	29.4	26.9	25.1	26.7	27.6	28.1	28.5	30.0	29.4	29.4	29.0	30.7	29.5	-1.2
Marijuana/Hashish	47.3	52.8	56.4	59.2	60.4	60.3	59.5	58.7	57.0	54.9	54.2	50.9	50.2	47.2	43.7	40.7	36.7	32.6	35.3	38.2	41.7	44.9	49.6	49.1	49.7	48.8	49.0	47.8	-1.1
Inhalants <sup>d</sup>	—	10.3	11.1	12.0	12.7	11.9	12.3	12.8	13.6	14.4	15.4	15.9	17.0	16.7	17.6	18.0	17.6	16.6	17.4	17.7	17.4	16.6	16.1	15.2	15.4	14.2	13.0	11.7	-1.4
Inhalants, Adjusted <sup>d,e</sup>	—	—	—	—	18.2	17.3	17.2	17.7	18.2	18.0	18.1	20.1	18.6	17.5	18.6	18.5	18.0	17.0	17.7	18.3	17.8	17.5	16.9	16.5	16.0	14.6	13.8	12.4	-1.4
Amyl/Butyl Nitrites <sup>f,g</sup>	—	—	—	—	11.1	11.1	10.1	9.8	8.4	8.1	7.9	8.6	4.7	3.2	3.3	2.1	1.6	1.5	1.4	1.7	1.5	1.8	2.0	2.7	1.7	0.8	1.9	1.5	-0.4
Hallucinogens <sup>c</sup>	16.3	15.1	13.9	14.3	14.1	13.3	13.3	12.5	11.9	10.7	10.3	9.7	10.3	8.9	9.4	9.4	9.6	9.2	10.9	11.4	12.7	14.0	15.1	14.1	13.7	13.0	14.7	12.0	-2.7s
Hallucinogens, Adjusted <sup>f,h</sup>	—	—	—	—	17.7	15.6	15.3	14.3	13.6	12.3	12.1	11.9	10.6	9.2	9.9	9.7	10.0	9.4	11.3	11.7	13.1	14.5	15.4	14.4	14.2	13.6	15.3	12.8	-2.5s
LSD	11.3	11.0	9.8	9.7	9.5	9.3	9.8	9.6	8.9	8.0	7.5	7.2	8.4	7.7	8.3	8.7	8.8	8.6	10.3	10.5	11.7	12.6	13.6	12.6	12.2	11.1	10.9	8.4	-2.5ss
Hallucinogens Other Than LSD <sup>c</sup>	14.1	12.1	11.2	11.6	10.7	9.8	9.1	8.0	7.3	6.6	6.5	5.7	5.4	4.1	4.3	4.1	3.7	3.3	3.9	4.9	5.4	6.8	7.5	7.1	6.7	6.9	10.4	9.2	-1.2
PCP <sup>i,g</sup>	—	—	—	—	12.8	9.6	7.8	6.0	5.6	5.0	4.9	4.8	3.0	2.9	3.9	2.8	2.9	2.4	2.9	2.8	2.7	4.0	3.9	3.9	3.4	3.4	3.5	3.1	-0.5
MDMA (Ecstasy) <sup>f</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.1	6.9	5.8	8.0	11.0	11.7	10.5	-1.2
Cocaine	9.0	9.7	10.8	12.9	15.4	15.7	16.5	16.0	16.2	16.1	17.3	16.9	15.2	12.1	10.3	9.4	7.8	6.1	6.1	5.9	6.0	7.1	8.7	9.3	9.8	8.6	8.2	7.8	-0.4
Crack <sup>i</sup>	—	—	—	—	—	—	—	—	—	—	—	—	5.4	4.8	4.7	3.5	3.1	2.6	2.6	3.0	3.0	3.3	3.9	4.4	4.6	3.9	3.7	3.8	+0.1
Other Cocaine <sup>i</sup>	—	—	—	—	—	—	—	—	—	—	—	—	14.0	12.1	8.5	8.6	7.0	5.3	5.4	5.2	5.1	6.4	8.2	8.4	8.8	7.7	7.4	7.0	-0.4
Heroin <sup>k</sup>	2.2	1.8	1.8	1.6	1.1	1.1	1.1	1.2	1.2	1.3	1.2	1.1	1.2	1.1	1.3	1.3	0.9	1.2	1.1	1.2	1.6	1.8	2.1	2.0	2.0	2.4	1.8	1.7	-0.1
With a needle <sup>l</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.7	0.8	0.9	0.8	0.9	0.8	0.7	0.8	+0.1
Without a needle <sup>l</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.4	1.7	2.1	1.6	1.8	2.4	1.5	1.6	+0.1
Other Narcotics <sup>m</sup>	9.0	9.6	10.3	9.9	10.1	9.8	10.1	9.6	9.4	9.7	10.2	9.0	9.2	8.6	8.3	8.3	6.6	6.1	6.4	6.6	7.2	8.2	9.7	9.8	10.2	10.6	9.9	10.1	+0.2 <sup>n</sup>
Amphetamines <sup>b,m</sup>	22.3	22.6	23.0	22.9	24.2	26.4	32.2	27.9	26.9	27.9	26.2	23.4	21.6	19.8	19.1	17.5	15.4	13.9	15.1	15.7	15.3	15.3	16.5	16.4	16.3	15.6	16.2	16.8	+0.5
Methamphetamine <sup>o</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.2	7.9	6.9	-0.2
Crystal Meth. (Ice) <sup>o</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.7	3.3	2.9	3.1	3.4	3.9	4.4	4.4	5.3	4.8	4.0	4.1	4.7	+0.6
Sedatives (Barbiturates) <sup>m</sup>	16.9	16.2	15.6	13.7	11.8	11.0	11.3	10.3	9.9	9.9	9.2	8.4	7.4	6.7	6.5	6.8	6.2	5.5	6.3	7.0	7.4	7.6	8.1	8.7	8.9	9.2	8.7	9.5	+0.9
Sedatives, Adjusted <sup>m,p</sup>	18.2	17.7	17.4	16.0	14.6	14.9	16.0	15.2	14.4	13.3	11.8	10.4	8.7	7.8	7.4	7.5	6.7	6.1	6.4	7.3	7.6	8.2	8.7	9.2	9.5	9.3	8.9	10.2	+1.3s
Methaqualone <sup>m,q</sup>	8.1	7.8	8.5	7.9	8.3	9.5	10.6	10.7	10.1	8.3	6.7	5.2	4.0	3.3	2.7	2.3	1.3	1.6	0.8	1.4	1.2	2.0	1.7	1.6	1.8	0.8	1.1	1.5	+0.4
Tranquilizers <sup>c,m</sup>	17.0	16.8	18.0	17.0	16.3	15.2	14.7	14.0	13.3	12.4	11.9	10.9	10.9	9.4	7.6	7.2	7.2	6.0	6.4	6.6	7.1	7.2	7.8	8.5	9.3	8.9	10.3	11.4	+1.2
Rohypnol <sup>f</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.2	1.8	3.0	2.0	1.5	1.7	—	—
Alcohol <sup>r</sup>	90.4	91.9	92.5	93.1	93.0	93.2	92.6	92.8	92.6	92.6	92.2	91.3	92.2	92.0	90.7	89.5	88.0	87.5	80.0	80.4	80.7	79.2	81.7	81.4	80.0	80.3	79.7	78.4	-1.3
Been Drunk <sup>o</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	65.4	63.4	62.5	62.9	63.2	61.8	64.2	62.4	62.3	62.3	63.9	61.6	-2.3
Cigarettes	73.6	75.4	75.7	75.3	74.0	71.0	71.0	70.1	70.6	69.7	68.8	67.6	67.2	66.4	65.7	64.4	63.1	61.8	61.9	62.0	64.2	63.5	65.4	65.3	64.6	62.5	61.0	57.2	-3.9ss
Smokeless Tobacco <sup>s</sup>	—	—	—	—	—	—	—	—	—	—	—	31.4	32.2	30.4	29.2	—	—	32.4	31.0	30.7	30.9	29.8	25.3	26.2	23.4	23.1	19.7	18.3	-1.4
Steroids <sup>o</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.0	2.9	2.1	2.1	2.0	2.4	2.3	1.9	2.4	2.7	2.9	2.5	3.7	4.0	+0.3

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available.

† indicates some change in the question. See relevant footnote for that drug. See relevant figure to assess the impact of the wording changes.

Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.

SOURCE: The Monitoring the Future Study, the University of Michigan.

## Footnotes for Table 5-1 to Table 5-4

‡ indicates some change in the question. See relevant footnote for that drug. See relevant figure to assess the impact of the wording changes.

<sup>a</sup>Use of “any illicit drug” includes any use of marijuana, LSD, other hallucinogens, crack, other cocaine, or heroin, or any use of other narcotics, amphetamines, sedatives (barbiturates), methaqualone (excluded since 1990), or tranquilizers not under a doctor’s orders.

<sup>b</sup>Beginning in 1982 the question about amphetamine use was revised to get respondents to exclude the inappropriate reporting of nonprescription amphetamines. The prevalence of use rate dropped slightly as a result of this methodological change.

<sup>c</sup>In 2001 the question text was changed on half of the questionnaire forms for each grade. “Other psychedelics” was changed to “other hallucinogens” and “shrooms” was added to the list of examples. For the tranquilizer list of examples, Miltown was replaced with Xanax. The 2001 data presented here are based on the changed forms only; N is one-half of N indicated. In 2002 the remaining forms were changed to the new wording. The 2002 data are based on all forms. Data for “any illicit drug other than marijuana” and “hallucinogens” are also affected by these changes and have been handled in a parallel manner.

<sup>d</sup>Data based on four of five forms in 1976–88; N is four-fifths of N indicated. Data based on five of six forms in 1989–98; N is five-sixths of N indicated. Beginning in 1999, data based on three of six forms; N is three-sixths of N indicated.

<sup>e</sup>Adjusted for underreporting of amyl and butyl nitrites. See text for details.

<sup>f</sup>Data based on one form; N is one-fifth of N indicated in 1979–88 and one-sixth of N indicated beginning in 1989. Data for MDMA based on two of six forms in 2002; N is two-sixths of N indicated. Data for Rohypnol for 2001 and 2002 are not comparable due to changes in the questionnaire forms.

<sup>g</sup>Question text changed slightly in 1987.

<sup>h</sup>Adjusted for underreporting of PCP. See text for details.

<sup>i</sup>Data based on one of five forms in 1986; N is one-fifth of N indicated. Data based on two forms in 1987–89; N is two-fifths of N indicated in 1987–88 and two-sixths of N indicated in 1989. Data based on six forms beginning in 1990.

<sup>j</sup>Data based on one form in 1987–89; N is one-fifth of N indicated in 1987–88 and one-sixth of N indicated in 1989. Data based on four of six forms beginning in 1990; N is four-sixths of N indicated.

<sup>k</sup>In 1995 the heroin question was changed in half of the questionnaire forms. Separate questions were asked for use with injection and without injection. Data presented here represent the combined data from all forms.

<sup>l</sup>Data based on three of six forms; N is three-sixths of N indicated.

<sup>m</sup>Only drug use not under a doctor’s orders is included here.

<sup>n</sup>In 2002 the question text was changed in half of the questionnaire forms. The list of examples of narcotics other than heroin was updated: Talwin, laudanum, and paregoric—all of which had negligible rates of use by 2001—were replaced with Vicodin, Oxycontin, and Percocet. The 2001 data presented here are based on all forms. The 2002 estimates are based on the 2001 prevalence of use rate plus the increase observed from 2001 to 2002 in the half-sample in which the question did not change. Thus, the change score given in the right-hand column is the difference between the data from the unchanged forms only in both 2001 and 2002.

<sup>o</sup>Data based on two of six forms; N is two-sixths of N indicated. Steroid data based on one of six forms in 1989–90; N is one-sixth of N indicated in 1989–90. Steroid data based on two of six forms beginning in 1991; N is two-sixths of N indicated.

<sup>p</sup>“Sedatives, adjusted” data are a combination of barbiturate and methaqualone data. Data based on five forms in 1975–88, six forms in 1989, one form in 1990 (N is one-sixth of N indicated in 1990), and six forms of barbiturate data adjusted by one form of methaqualone data beginning in 1991.

<sup>q</sup>Data based on five forms in 1975–88 and six forms in 1989. Data based on one of six forms beginning in 1990; N is one-sixth of N indicated.

<sup>r</sup>Data based on five forms in 1975–88 and on six forms in 1989–92. In 1993, the question text was changed slightly in three of six forms to indicate that a “drink” meant “more than a few sips.” The 1993 data are based on the changed forms only; N is one-half of N indicated. In 1994 the remaining forms were changed to the new wording. Beginning in 1994, the data are based on all forms.

<sup>s</sup>The prevalence of use of smokeless tobacco was not asked of twelfth graders in 1990 and 1991. Prior to 1990 the prevalence of use question on smokeless tobacco was located near the end of one twelfth-grade questionnaire form, whereas after 1991 the question was placed earlier and in a different form. This shift could explain the discontinuities between the corresponding data.

<sup>t</sup>Data based on two of six forms in 2000; N is two-sixths of N indicated. Data based on three of six forms beginning in 2001; N is three-sixths of N indicated. Data for GHB based on one form in 2002; N is one-sixth of N indicated.

SOURCE: The Monitoring the Future Study, the University of Michigan.

**TABLE 5-2**  
**Long-Term Trends in Annual Prevalence of Use of Various Drugs for Twelfth Graders**

	Percentage who used in last twelve months																								'01-'02 change							
	Class of:																															
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998		1999	2000	2001	2002			
<i>Approx. N (in 1,000s) =</i>	9.4	15.4	17.1	17.8	15.5	15.9	17.5	17.7	16.3	15.9	16.0	15.2	16.3	16.3	16.7	15.2	15.0	15.8	16.3	15.4	15.4	14.3	15.4	15.2	13.6	12.8	12.8	12.9				
Any Illicit Drug <sup>a,b</sup>	45.0	48.1	51.1	53.8	54.2	53.1	52.1	49.4	47.4	45.8	46.3	44.3	41.7	38.5	35.4	32.5	29.4	27.1	31.0	35.8	39.0	40.2	42.4	41.4	42.1	40.9	41.4	41.0	-0.5			
Any Illicit Drug Other Than Marijuana <sup>a,b,c</sup>	26.2	25.4	26.0	27.1	28.2	30.4	34.0	30.1	28.4	28.0	27.4	25.9	24.1	21.1	20.0	17.9	16.2	14.9	17.1	18.0	19.4	19.8	20.7	20.2	20.7	20.4	†21.6	20.9	-0.7			
Marijuana/Hashish	40.0	44.5	47.6	50.2	50.8	48.8	46.1	44.3	42.3	40.0	40.6	38.8	36.3	33.1	29.6	27.0	23.9	21.9	26.0	30.7	34.7	35.8	38.5	37.5	37.8	36.5	37.0	36.2	-0.8			
Inhalants <sup>d</sup>	—	3.0	3.7	4.1	5.4	4.6	4.1	4.5	4.3	5.1	5.7	6.1	6.9	6.5	5.9	6.9	6.6	6.2	7.0	7.7	8.0	7.6	6.7	6.2	5.6	5.9	4.5	4.5	0.0			
Inhalants, Adjusted <sup>d,e</sup>	—	—	—	—	8.9	7.9	6.1	6.6	6.2	7.2	7.5	8.9	8.1	7.1	6.9	7.5	6.9	6.4	7.4	8.2	8.4	8.5	7.3	7.1	6.0	6.2	4.9	4.9	+0.1			
Amyl/Butyl Nitrites <sup>f,g</sup>	—	—	—	—	6.5	5.7	3.7	3.6	3.6	4.0	4.0	4.7	2.6	1.7	1.7	1.4	0.9	0.5	0.9	1.1	1.1	1.6	1.2	1.4	0.9	0.6	0.6	1.1	+0.5			
Hallucinogens <sup>c</sup>	11.2	9.4	8.8	9.6	9.9	9.3	9.0	8.1	7.3	6.5	6.3	6.0	6.4	5.5	5.6	5.9	5.8	5.9	7.4	7.6	9.3	10.1	9.8	9.0	9.4	8.1	†9.1	6.6	-2.5sss			
Hallucinogens, Adjusted <sup>e,h</sup>	—	—	—	—	11.8	10.4	10.1	9.0	8.3	7.3	7.6	7.6	6.7	5.8	6.2	6.0	6.1	6.2	7.8	7.8	9.7	10.7	10.0	9.2	9.8	8.7	†9.7	7.2	-2.5ss			
LSD	7.2	6.4	5.5	6.3	6.6	6.5	6.5	6.1	5.4	4.7	4.4	4.5	5.2	4.8	4.9	5.4	5.2	5.6	6.8	6.9	8.4	8.8	8.4	7.6	8.1	6.6	6.6	3.5	-3.1sss			
Hallucinogens Other Than LSD <sup>c</sup>	9.4	7.0	6.9	7.3	6.8	6.2	5.6	4.7	4.1	3.8	3.6	3.0	3.2	2.1	2.2	2.1	2.0	1.7	2.2	3.1	3.8	4.4	4.6	4.6	4.3	4.4	†5.9	5.4	-0.4			
PCP <sup>i,g</sup>	—	—	—	—	7.0	4.4	3.2	2.2	2.6	2.3	2.9	2.4	1.3	1.2	2.4	1.2	1.4	1.4	1.4	1.6	1.8	2.6	2.3	2.1	1.8	2.3	1.8	1.1	-0.7			
MDMA (Ecstasy) <sup>f</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.6	4.0	3.6	5.6	8.2	9.2	7.4	-1.8				
Cocaine	5.6	6.0	7.2	9.0	12.0	12.3	12.4	11.5	11.4	11.6	13.1	12.7	10.3	7.9	6.5	5.3	3.5	3.1	3.3	3.6	4.0	4.9	5.5	5.7	6.2	5.0	4.8	5.0	+0.2			
Crack <sup>i</sup>	—	—	—	—	—	—	—	—	—	—	—	4.1	3.9	3.1	3.1	1.9	1.5	1.5	1.5	1.9	2.1	2.1	2.4	2.5	2.7	2.2	2.1	2.3	+0.2			
Other Cocaine <sup>j</sup>	—	—	—	—	—	—	—	—	—	—	—	—	9.8	7.4	5.2	4.6	3.2	2.6	2.9	3.0	3.4	4.2	5.0	4.9	5.8	4.5	4.4	4.4	0.0			
Heroin <sup>k</sup>	1.0	0.8	0.8	0.8	0.5	0.5	0.5	0.6	0.6	0.5	0.6	0.5	0.5	0.5	0.5	0.4	0.6	0.5	0.6	1.1	1.0	1.2	1.0	1.1	1.1	1.5	0.9	1.0	+0.1			
With a needle <sup>l</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.5	0.5	0.5	0.4	0.4	0.4	0.3	0.4	+0.1			
Without a needle <sup>l</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.0	1.0	1.2	0.8	1.0	1.6	0.8	0.8	0.0			
Other Narcotics <sup>m</sup>	5.7	5.7	6.4	6.0	6.2	6.3	5.9	5.3	5.1	5.2	5.9	5.2	5.3	4.6	4.4	4.5	3.5	3.3	3.6	3.8	4.7	5.4	6.2	6.3	6.7	7.0	6.7	7.0	+0.2 <sup>n</sup>			
Oxycontin <sup>o</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.0	—		
Vicodin <sup>o</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9.6	—		
Amphetamines <sup>b,m</sup>	16.2	15.8	16.3	17.1	18.3	20.8	26.0	†20.3	17.9	17.7	15.8	13.4	12.2	10.9	10.8	9.1	8.2	7.1	8.4	9.4	9.3	9.5	10.2	10.1	10.2	10.5	10.9	11.1	+0.2			
Ritalin <sup>o</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.1	4.0	-1.1		
Methamphetamine <sup>o</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.7	4.3	3.9	3.6	-0.3
Crystal Meth. (Ice) <sup>o</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.3	1.4	1.3	1.7	1.8	2.4	2.8	2.3	3.0	1.9	2.2	2.5	3.0	+0.6			
Sedatives (Barbiturates) <sup>m</sup>	10.7	9.6	9.3	8.1	7.5	6.8	6.6	5.5	5.2	4.9	4.6	4.2	3.6	3.2	3.3	3.4	3.4	2.8	3.4	4.1	4.7	4.9	5.1	5.5	5.8	6.2	5.7	6.7	+1.0s			
Sedatives, Adjusted <sup>m,p</sup>	11.7	10.7	10.8	9.9	9.9	10.3	10.5	9.1	7.9	6.6	5.8	5.2	4.1	3.7	3.7	3.6	3.6	2.9	3.4	4.2	4.9	5.3	5.4	6.0	6.3	6.3	5.9	7.0	+1.1s			
Methaqualone <sup>m,q</sup>	5.1	4.7	5.2	4.9	5.9	7.2	7.6	6.8	5.4	3.8	2.8	2.1	1.5	1.3	1.3	0.7	0.5	0.6	0.2	0.8	0.7	1.1	1.0	1.1	1.1	0.3	0.8	0.9	+0.2			
Tranquilizers <sup>c,m</sup>	10.6	10.3	10.8	9.9	9.6	8.7	8.0	7.0	6.9	6.1	5.8	5.5	4.8	3.8	3.5	3.6	2.8	3.5	3.7	4.4	4.6	4.7	5.5	5.8	5.7	†6.9	7.7	+0.8				
Rohypnol <sup>r</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.1	1.2	1.4	1.0	0.8	0.9	1.6	— <sup>f</sup>			
GHB <sup>r</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.9	1.6	1.5	-0.1		
Ketamine <sup>r</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.5	2.5	2.6	+0.1		
Alcohol <sup>r</sup>	84.8	85.7	87.0	87.7	88.1	87.9	87.0	86.8	87.3	86.0	85.6	84.5	85.7	85.3	82.7	80.6	77.7	76.8	†72.7	73.0	73.7	72.5	74.8	74.3	73.8	73.2	73.3	71.5	-1.8			
Been Drunk <sup>o</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	52.7	50.3	49.6	51.7	52.5	51.9	53.2	52.0	53.2	51.8	53.2	50.4	-2.8			
Cigarettes	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
Bidis <sup>o</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9.2	7.0	5.9	-1.2		
Kreteks <sup>o</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	10.1	8.4	-1.7		
Smokeless Tobacco <sup>s</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
Steroids <sup>o</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.9	1.7	1.4	1.1	1.2	1.3	1.5	1.4	1.4	1.7	1.8	1.7	2.4	2.5	+0.1		

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available.

† indicates some change in the question. See relevant footnote for that drug. See relevant figure to assess the impact of the wording changes.

See Table 5-1 for relevant footnotes.

Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.

SOURCE: The Monitoring the Future Study, the University of Michigan.

**TABLE 5-3**  
**Long-Term Trends in Thirty-Day Prevalence of Use of Various Drugs for Twelfth Graders**

	Percentage who used in last thirty days																									'01-'02 change			
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999		2000	2001	2002
<i>Approx. N (in 1,000s) =</i>	9.4	15.4	17.1	17.8	15.5	15.9	17.5	17.7	16.3	15.9	16.0	15.2	16.3	16.3	16.7	15.2	15.0	15.8	16.3	15.4	15.4	14.3	15.4	15.2	13.6	12.8	12.8	12.9	
Any Illicit Drug <sup>a,b</sup>	30.7	34.2	37.6	38.9	38.9	37.2	36.9	32.5	30.5	29.2	29.7	27.1	24.7	21.3	19.7	17.2	16.4	14.4	18.3	21.9	23.8	24.6	26.2	25.6	25.9	24.9	25.7	25.4	-0.4
Any Illicit Drug Other																													
Than Marijuana <sup>a,b,c</sup>	15.4	13.9	15.2	15.1	16.8	18.4	21.7	17.0	15.4	15.1	14.9	13.2	11.6	10.0	9.1	8.0	7.1	6.3	7.9	8.8	10.0	9.5	10.7	10.7	10.4	10.4	11.0	11.3	+0.3
Marijuana/Hashish	27.1	32.2	35.4	37.1	36.5	33.7	31.6	28.5	27.0	25.2	25.7	23.4	21.0	18.0	16.7	14.0	13.8	11.9	15.5	19.0	21.2	21.9	23.7	22.8	23.1	21.6	22.4	21.5	-0.9
Inhalants <sup>d</sup>	—	0.9	1.3	1.5	1.7	1.4	1.5	1.5	1.7	1.9	2.2	2.5	2.8	2.6	2.3	2.7	2.4	2.3	2.5	2.7	3.2	2.5	2.5	2.3	2.0	2.2	1.7	1.5	-0.2
Inhalants, Adjusted <sup>d,e</sup>	—	—	—	—	3.2	2.7	2.5	2.5	2.5	2.6	3.0	3.2	3.5	3.0	2.7	2.9	2.6	2.5	2.8	2.9	3.5	2.9	2.9	3.1	2.4	2.4	2.1	1.8	-0.3
Amyl/Butyl Nitrites <sup>f,g</sup>	—	—	—	—	2.4	1.8	1.4	1.1	1.4	1.4	1.6	1.3	1.3	0.6	0.6	0.6	0.4	0.3	0.6	0.4	0.4	0.7	0.7	1.0	0.4	0.3	0.5	0.6	+0.1
Hallucinogens <sup>e</sup>	4.7	3.4	4.1	3.9	4.0	3.7	3.7	3.4	2.8	2.6	2.5	2.5	2.5	2.2	2.2	2.2	2.1	2.7	3.1	4.4	3.5	3.9	3.8	3.5	2.6	3.3	2.3	-1.0	sss
Hallucinogens, Adjusted <sup>h</sup>	—	—	—	—	5.3	4.4	4.5	4.1	3.5	3.2	3.8	3.5	2.8	2.3	2.9	2.3	2.4	2.3	3.3	3.2	4.6	3.8	4.1	4.1	3.9	3.0	3.5	2.7	-0.8s
LSD	2.3	1.9	2.1	2.1	2.4	2.3	2.5	2.4	1.9	1.5	1.6	1.7	1.8	1.8	1.9	1.9	2.0	2.4	2.6	4.0	2.5	3.1	3.2	2.7	1.6	2.3	0.7	-1.6	sss
Hallucinogens Other Than LSD <sup>e</sup>	3.7	2.3	3.0	2.7	2.4	2.3	2.1	1.7	1.5	1.6	1.3	1.3	1.1	0.7	0.8	0.8	0.7	0.5	0.8	1.2	1.3	1.6	1.7	1.6	1.6	1.7	1.9	2.0	+0.1
PCP <sup>g</sup>	—	—	—	—	2.4	1.4	1.4	1.0	1.3	1.0	1.6	1.3	0.6	0.3	1.4	0.4	0.5	0.6	1.0	0.7	0.6	1.3	0.7	1.0	0.8	0.9	0.5	0.4	-0.1
MDMA (Ecstasy) <sup>f</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.0	1.6	1.5	2.5	3.6	2.8	2.4	-0.4
Cocaine	1.9	2.0	2.9	3.9	5.7	5.2	5.8	5.0	4.9	5.8	6.7	6.2	4.3	3.4	2.8	1.9	1.4	1.3	1.3	1.5	1.8	2.0	2.3	2.4	2.6	2.1	2.1	2.3	+0.2
Crack <sup>i</sup>	—	—	—	—	—	—	—	—	—	—	—	—	1.3	1.6	1.4	0.7	0.7	0.6	0.7	0.8	1.0	1.0	0.9	1.0	1.1	1.0	1.1	1.2	+0.1
Other Cocaine <sup>j</sup>	—	—	—	—	—	—	—	—	—	—	—	—	4.1	3.2	1.9	1.7	1.2	1.0	1.2	1.3	1.3	1.6	2.0	2.0	2.5	1.7	1.8	1.9	+0.1
Heroin <sup>k</sup>	0.4	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.3	0.2	0.2	0.3	0.2	0.3	0.6	0.5	0.5	0.5	0.5	0.7	0.4	0.5	+0.1
With a needle <sup>l</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.3	0.4	0.3	0.2	0.2	0.2	0.2	0.3	+0.1
Without a needle <sup>l</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.6	0.4	0.6	0.4	0.4	0.7	0.3	0.5	+0.1
Other Narcotics <sup>m</sup>	2.1	2.0	2.8	2.1	2.4	2.4	2.1	1.8	1.8	1.8	2.3	2.0	1.8	1.6	1.6	1.5	1.1	1.2	1.3	1.5	1.8	2.0	2.3	2.4	2.6	2.9	3.0	3.1	+0.2 <sup>n</sup>
Amphetamines <sup>b,m</sup>	8.5	7.7	8.8	8.7	9.9	12.1	15.8	10.7	8.9	8.3	6.8	5.5	5.2	4.6	4.2	3.7	3.2	2.8	3.7	4.0	4.0	4.1	4.8	4.6	4.5	5.0	5.6	5.5	-0.2
Methamphetamine <sup>o</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Crystal Meth. (Ice) <sup>o</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.6	0.6	0.5	0.6	0.7	1.1	1.1	0.8	1.2	0.8	1.0	1.1	1.2	+0.1
Sedatives (Barbiturates) <sup>m</sup>	4.7	3.9	4.3	3.2	3.2	2.9	2.6	2.0	2.1	1.7	2.0	1.8	1.4	1.2	1.4	1.3	1.4	1.1	1.3	1.7	2.2	2.1	2.1	2.6	2.6	3.0	2.8	3.2	+0.4
Sedatives, Adjusted <sup>m,p</sup>	5.4	4.5	5.1	4.2	4.4	4.8	4.6	3.4	3.0	2.3	2.4	2.2	1.7	1.4	1.6	1.4	1.5	1.2	1.3	1.8	2.3	2.3	2.1	2.8	2.8	3.1	3.0	3.4	+0.4
Methaqualone <sup>m,q</sup>	2.1	1.6	2.3	1.9	2.3	3.3	3.1	2.4	1.8	1.1	1.0	0.8	0.6	0.5	0.6	0.2	0.2	0.4	0.1	0.4	0.4	0.6	0.3	0.6	0.4	0.2	0.5	0.3	-0.2
Tranquilizers <sup>c,m</sup>	4.1	4.0	4.6	3.4	3.7	3.1	2.7	2.4	2.5	2.1	2.1	2.1	2.0	1.5	1.3	1.2	1.4	1.0	1.2	1.4	1.8	2.0	1.8	2.4	2.5	2.6	2.9	3.3	+0.4
Rohypnol <sup>f</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.5	0.3	0.3	0.3	0.4	0.3	—	
Alcohol <sup>r</sup>	68.2	68.3	71.2	72.1	71.8	72.0	70.7	69.7	69.4	67.2	65.9	65.3	66.4	63.9	60.0	57.1	54.0	51.3	48.6	50.1	51.3	50.8	52.7	52.0	51.0	50.0	49.8	48.6	-1.2
Been Drunk <sup>o</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	31.6	29.9	28.9	30.8	33.2	31.3	34.2	32.9	32.9	32.3	32.7	30.3	-2.4
Cigarettes	36.7	38.8	38.4	36.7	34.4	30.5	29.4	30.0	30.3	29.3	30.1	29.6	29.4	28.7	28.6	29.4	28.3	27.8	29.9	31.2	33.5	34.0	36.5	35.1	34.6	31.4	29.5	26.7	-2.8s
Smokeless Tobacco <sup>s</sup>	—	—	—	—	—	—	—	—	—	—	—	11.5	11.3	10.3	8.4	—	—	11.4	10.7	11.1	12.2	9.8	9.7	8.8	8.4	7.6	7.8	6.5	-1.4
Steroids <sup>o</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.8	1.0	0.8	0.6	0.7	0.9	0.7	0.7	1.0	1.1	0.9	0.8	1.3	1.4	+0.1

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. '‡' indicates some change in the question. See relevant footnote for that drug. See relevant figure to assess the impact of the wording changes. See Table 5-1 for relevant footnotes.

Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.

SOURCE: The Monitoring the Future Study, the University of Michigan.



**TABLE 5-4**  
**Long-Term Trends in Thirty-Day Prevalence of Daily Use of Various Drugs for Twelfth Graders**

	Percentage who used daily in last thirty days																								'01-'02 change					
	Class of:																													
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002		
Approx. N (in 1,000s) =	9.4	15.4	17.1	17.8	15.5	15.9	17.5	17.7	16.3	15.9	16.0	15.2	16.3	16.7	15.2	15.0	15.8	16.3	15.4	15.4	14.3	15.4	15.2	13.6	12.8	12.8	12.9			
Marijuana/Hashish	6.0	8.2	9.1	10.7	10.3	9.1	7.0	6.3	5.5	5.0	4.9	4.0	3.3	2.7	2.9	2.2	2.0	1.9	2.4	3.6	4.6	4.9	5.8	5.6	6.0	6.0	5.8	6.0	+0.1	
Inhalants <sup>d</sup>	—	*	*	0.1	*	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.2	0.2	0.3	0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.2	0.1	0.2	+0.1	
Inhalants, Adjusted <sup>h,e</sup>	—	—	—	—	0.1	0.2	0.2	0.2	0.2	0.2	0.4	0.4	0.4	0.3	0.3	0.3	0.5	0.2	0.2	—	—	0.4	0.2	0.9	0.3	0.3	0.1	0.3	+0.2	
Amyl/Butyl Nitrites <sup>f,g</sup>	—	—	—	—	*	0.1	0.1	0.0	0.2	0.1	0.3	0.5	0.3	0.1	0.3	0.1	0.2	0.1	0.1	0.2	0.2	0.4	0.1	0.3	0.2	*	0.1	0.3	+0.2	
Hallucinogens <sup>c</sup>	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	*	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.1	0.1	0.2	‡0.2	0.1	-0.1	
Hallucinogens, Adjusted <sup>f,h</sup>	—	—	—	—	0.2	0.2	0.1	0.2	0.2	0.2	0.3	0.3	0.2	*	0.3	0.3	0.1	0.1	0.1	—	—	0.4	0.4	0.8	0.2	0.2	‡0.2	0.4	+0.1	
LSD	*	*	*	*	*	*	0.1	*	0.1	0.1	0.1	*	0.1	*	*	0.1	0.1	0.1	0.1	0.1	0.1	*	0.2	0.1	0.1	0.1	0.2	0.1	-0.1	
Hallucinogens Other Than LSD <sup>c</sup>	—	0.1	0.1	*	*	*	0.1	*	*	0.1	*	*	*	*	*	*	*	*	*	*	*	0.1	0.1	0.1	*	0.1	‡0.1	*	0.0	
PCP <sup>f,g</sup>	—	—	—	—	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.2	0.3	0.1	0.2	0.1	0.1	0.1	0.1	0.3	0.3	0.3	0.1	0.3	0.2	0.2	0.1	0.2	+0.2	
MDMA (Ecstasy) <sup>f</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.0	0.1	0.2	0.1	*	0.2	*	-0.2		
Cocaine	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.2	0.2	0.2	0.4	0.4	0.3	0.2	0.3	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.0	
Crack <sup>l</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.0	
Other Cocaine <sup>l</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	0.2	0.2	0.1	0.1	*	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.0	
Heroin <sup>k</sup>	0.1	*	*	*	*	*	*	*	0.1	*	*	*	*	*	*	*	*	*	*	*	*	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0
With a needle <sup>l</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.1	0.2	0.1	*	*	*	*	0.1	0.0	
Without a needle <sup>l</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	*	0.1	0.1	0.0	0.0	*	*	0.1	+0.1	
Other Narcotics <sup>m</sup>	0.1	0.1	0.2	0.1	*	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	*	*	0.1	0.1	0.2	0.2	0.1	0.2	0.1	0.2	0.1	-0.1 <sup>n</sup>	
Amphetamines <sup>b,m</sup>	0.5	0.4	0.5	0.5	0.6	0.7	1.2	‡0.7	0.8	0.6	0.4	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.5	0.5	0.7	+0.1	
Methamphetamine <sup>o</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.1	0.1	0.1	0.3	+0.1	
Crystal Meth. (Ice) <sup>o</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.1	0.1	0.1	0.1	*	0.1	0.1	0.1	*	*	0.1	0.2	0.2	0.0	
Sedatives (Barbiturates) <sup>m</sup>	0.1	0.1	0.2	0.1	*	0.1	0.1	0.1	0.1	*	0.1	0.1	0.1	*	0.1	0.1	0.1	*	0.1	*	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.2	+0.1	
Sedatives, Adjusted <sup>m,p</sup>	0.3	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	*	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.2	+0.1	
Methaqualone <sup>m,q</sup>	*	*	*	*	*	0.1	0.1	0.1	*	*	*	*	*	*	*	*	*	*	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tranquilizers <sup>c,m</sup>	0.1	0.2	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	*	*	0.1	*	0.1	0.1	0.1	*	*	0.1	*	0.2	0.1	0.1	0.1	0.1	‡0.1	0.2	+0.1	
Rohypnol <sup>f</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.1	0.0	0.1	0.1	0.1	*	—	—	
Alcohol																														
Daily <sup>r</sup>	5.7	5.6	6.1	5.7	6.9	6.0	6.0	5.7	5.5	4.8	5.0	4.8	4.8	4.2	4.2	3.7	3.6	3.4	‡3.4	2.9	3.5	3.7	3.9	3.9	3.4	2.9	3.6	3.5	-0.1	
Been drunk daily <sup>o</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.9	0.8	0.9	1.2	1.3	1.6	2.0	1.5	1.9	1.7	1.4	1.2	-0.2	
5+ drinks in a row in last 2 weeks	36.8	37.1	39.4	40.3	41.2	41.2	41.4	40.5	40.8	38.7	36.7	36.8	37.5	34.7	33.0	32.2	29.8	27.9	27.5	28.2	29.8	30.2	31.3	31.5	30.8	30.0	29.7	28.6	-1.1	
Cigarettes																														
Daily	26.9	28.8	28.8	27.5	25.4	21.3	20.3	21.1	21.2	18.7	19.5	18.7	18.7	18.1	18.9	19.1	18.5	17.2	19.0	19.4	21.6	22.2	24.6	22.4	23.1	20.6	19.0	16.9	-2.1s	
Half-pack or more per day	17.9	19.2	19.4	18.8	16.5	14.3	13.5	14.2	13.8	12.3	12.5	11.4	11.4	10.6	11.2	11.3	10.7	10.0	10.9	11.2	12.4	13.0	14.3	12.6	13.2	11.3	10.3	9.1	-1.2	
Smokeless Tobacco <sup>f,s</sup>	—	—	—	—	—	—	—	—	—	—	—	4.7	5.1	4.3	3.3	—	—	4.3	3.3	3.9	3.6	3.3	4.4	3.2	2.9	3.2	2.8	2.0	-0.9	
Steroids <sup>o</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.1	0.2	0.1	0.1	0.1	0.4	0.2	0.3	0.3	0.3	0.2	0.2	0.2	0.3	+0.1	

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available.

'\*' indicates less than .05 percent but greater than 0 percent.

'‡' indicates some change in the question. See relevant footnote for that drug. See relevant figure to assess the impact of the wording changes.

See Table 5-1 for relevant footnotes.

Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.

Daily use is defined as use on 20 or more occasions in the past 30 days except for 5+ drinks, cigarettes, and smokeless tobacco, for which actual daily use is measured.

SOURCE: The Monitoring the Future Study, the University of Michigan.

**TABLE 5-5a**  
**Trends in Lifetime Prevalence of Use of Various Drugs for Eighth, Tenth, and Twelfth Graders**  
(Entries are percentages)

	<u>Lifetime</u>												'01-'02 change
	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	
Any Illicit Drug <sup>a</sup>													
8th Grade	18.7	20.6	22.5	25.7	28.5	31.2	29.4	29.0	28.3	26.8	26.8	24.5	-2.3s
10th Grade	30.6	29.8	32.8	37.4	40.9	45.4	47.3	44.9	46.2	45.6	45.6	44.6	-1.1
12th Grade	44.1	40.7	42.9	45.6	48.4	50.8	54.3	54.1	54.7	54.0	53.9	53.0	-0.9
Any Illicit Drug Other Than Marijuana <sup>a,b</sup>													
8th Grade	14.3	15.6	16.8	17.5	18.8	19.2	17.7	16.9	16.3	15.8	17.0	13.7	-3.3sss
10th Grade	19.1	19.2	20.9	21.7	24.3	25.5	25.0	23.6	24.0	23.1	23.6	22.1	-1.5
12th Grade	26.9	25.1	26.7	27.6	28.1	28.5	30.0	29.4	29.4	29.0	30.7	29.5	-1.2
Any Illicit Drug Including Inhalants <sup>a,c</sup>													
8th Grade	28.5	29.6	32.3	35.1	38.1	39.4	38.1	37.8	37.2	35.1	34.5	31.6	-2.9ss
10th Grade	36.1	36.2	38.7	42.7	45.9	49.8	50.9	49.3	49.9	49.3	48.8	47.7	-1.1
12th Grade	47.6	44.4	46.6	49.1	51.5	53.5	56.3	56.1	56.3	57.0	56.0	54.6	-1.4
Marijuana/Hashish													
8th Grade	10.2	11.2	12.6	16.7	19.9	23.1	22.6	22.2	22.0	20.3	20.4	19.2	-1.2
10th Grade	23.4	21.4	24.4	30.4	34.1	39.8	42.3	39.6	40.9	40.3	40.1	38.7	-1.4
12th Grade	36.7	32.6	35.3	38.2	41.7	44.9	49.6	49.1	49.7	48.8	49.0	47.8	-1.1
Inhalants <sup>c,d</sup>													
8th Grade	17.6	17.4	19.4	19.9	21.6	21.2	21.0	20.5	19.7	17.9	17.1	15.2	-1.9s
10th Grade	15.7	16.6	17.5	18.0	19.0	19.3	18.3	18.3	17.0	16.6	15.2	13.5	-1.6s
12th Grade	17.6	16.6	17.4	17.7	17.4	16.6	16.1	15.2	15.4	14.2	13.0	11.7	-1.4
Nitrites <sup>e</sup>													
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	1.6	1.5	1.4	1.7	1.5	1.8	2.0	2.7	1.7	0.8	1.9	1.5	-0.4
Hallucinogens <sup>b,f</sup>													
8th Grade	3.2	3.8	3.9	4.3	5.2	5.9	5.4	4.9	4.8	4.6	5.2	4.1	-1.0
10th Grade	6.1	6.4	6.8	8.1	9.3	10.5	10.5	9.8	9.7	8.9	8.9	7.8	-1.0
12th Grade	9.6	9.2	10.9	11.4	12.7	14.0	15.1	14.1	13.7	13.0	14.7	12.0	-2.7s
LSD													
8th Grade	2.7	3.2	3.5	3.7	4.4	5.1	4.7	4.1	4.1	3.9	3.4	2.5	-1.0s
10th Grade	5.6	5.8	6.2	7.2	8.4	9.4	9.5	8.5	8.5	7.6	6.3	5.0	-1.4s
12th Grade	8.8	8.6	10.3	10.5	11.7	12.6	13.6	12.6	12.2	11.1	10.9	8.4	-2.5ss
Hallucinogens Other Than LSD <sup>b</sup>													
8th Grade	1.4	1.7	1.7	2.2	2.5	3.0	2.6	2.5	2.4	2.3	3.9	3.3	-0.6
10th Grade	2.2	2.5	2.8	3.8	3.9	4.7	4.8	5.0	4.7	4.8	6.6	6.3	-0.3
12th Grade	3.7	3.3	3.9	4.9	5.4	6.8	7.5	7.1	6.7	6.9	10.4	9.2	-1.2
PCP <sup>e</sup>													
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	2.9	2.4	2.9	2.8	2.7	4.0	3.9	3.9	3.4	3.4	3.5	3.1	-0.5

(Table continued on next page)

**TABLE 5-5a (cont.)**  
**Trends in Lifetime Prevalence of Use of Various Drugs for Eighth, Tenth, and Twelfth Graders**

	<u>Lifetime</u>												'01-'02 change
	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	
MDMA (Ecstasy) <sup>g</sup>													
8th Grade	—	—	—	—	—	3.4	3.2	2.7	2.7	4.3	5.2	4.3	-0.9
10th Grade	—	—	—	—	—	5.6	5.7	5.1	6.0	7.3	8.0	6.6	-1.4
12th Grade	—	—	—	—	—	6.1	6.9	5.8	8.0	11.0	11.7	10.5	-1.2
Cocaine													
8th Grade	2.3	2.9	2.9	3.6	4.2	4.5	4.4	4.6	4.7	4.5	4.3	3.6	-0.7
10th Grade	4.1	3.3	3.6	4.3	5.0	6.5	7.1	7.2	7.7	6.9	5.7	6.1	+0.5
12th Grade	7.8	6.1	6.1	5.9	6.0	7.1	8.7	9.3	9.8	8.6	8.2	7.8	-0.4
Crack													
8th Grade	1.3	1.6	1.7	2.4	2.7	2.9	2.7	3.2	3.1	3.1	3.0	2.5	-0.4
10th Grade	1.7	1.5	1.8	2.1	2.8	3.3	3.6	3.9	4.0	3.7	3.1	3.6	+0.5
12th Grade	3.1	2.6	2.6	3.0	3.0	3.3	3.9	4.4	4.6	3.9	3.7	3.8	+0.1
Other Cocaine <sup>h</sup>													
8th Grade	2.0	2.4	2.4	3.0	3.4	3.8	3.5	3.7	3.8	3.5	3.3	2.8	-0.5
10th Grade	3.8	3.0	3.3	3.8	4.4	5.5	6.1	6.4	6.8	6.0	5.0	5.2	+0.2
12th Grade	7.0	5.3	5.4	5.2	5.1	6.4	8.2	8.4	8.8	7.7	7.4	7.0	-0.4
Heroin <sup>i</sup>													
8th Grade	1.2	1.4	1.4	2.0	2.3	2.4	2.1	2.3	2.3	1.9	1.7	1.6	-0.1
10th Grade	1.2	1.2	1.3	1.5	1.7	2.1	2.1	2.3	2.3	2.2	1.7	1.8	+0.2
12th Grade	0.9	1.2	1.1	1.2	1.6	1.8	2.1	2.0	2.0	2.4	1.8	1.7	-0.1
With a needle <sup>j</sup>													
8th Grade	—	—	—	—	1.5	1.6	1.3	1.4	1.6	1.1	1.2	1.0	-0.1
10th Grade	—	—	—	—	1.0	1.1	1.1	1.2	1.3	1.0	0.8	1.0	+0.2
12th Grade	—	—	—	—	0.7	0.8	0.9	0.8	0.9	0.8	0.7	0.8	+0.1
Without a needle <sup>j</sup>													
8th Grade	—	—	—	—	1.5	1.6	1.4	1.5	1.4	1.3	1.1	1.0	-0.1
10th Grade	—	—	—	—	1.1	1.7	1.7	1.7	1.6	1.7	1.3	1.3	+0.1
12th Grade	—	—	—	—	1.4	1.7	2.1	1.6	1.8	2.4	1.5	1.6	+0.1
Other Narcotics <sup>k</sup>													
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	6.6	6.1	6.4	6.6	7.2	8.2	9.7	9.8	10.2	10.6	9.9	10.1	+0.2 <sup>l</sup>
Amphetamines <sup>k</sup>													
8th Grade	10.5	10.8	11.8	12.3	13.1	13.5	12.3	11.3	10.7	9.9	10.2	8.7	-1.5 <sup>s</sup>
10th Grade	13.2	13.1	14.9	15.1	17.4	17.7	17.0	16.0	15.7	15.7	16.0	14.9	-1.1
12th Grade	15.4	13.9	15.1	15.7	15.3	15.3	16.5	16.4	16.3	15.6	16.2	16.8	+0.5
Methamphetamine <sup>m,n</sup>													
8th Grade	—	—	—	—	—	—	—	—	4.5	4.2	4.4	3.5	-0.9
10th Grade	—	—	—	—	—	—	—	—	7.3	6.9	6.4	6.1	-0.3
12th Grade	—	—	—	—	—	—	—	—	8.2	7.9	6.9	6.7	-0.2
Ice <sup>n</sup>													
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	3.3	2.9	3.1	3.4	3.9	4.4	4.4	5.3	4.8	4.0	4.1	4.7	+0.6

(Table continued on next page)

**TABLE 5-5a (cont.)**  
**Trends in Lifetime Prevalence of Use of Various Drugs for Eighth, Tenth, and Twelfth Graders**

	Lifetime												'01-'02 change
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	
Sedatives (Barbiturates) <sup>k</sup>													
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	6.2	5.5	6.3	7.0	7.4	7.6	8.1	8.7	8.9	9.2	8.7	9.5	+0.9
Methalqualone <sup>e,k</sup>													
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	1.3	1.6	0.8	1.4	1.2	2.0	1.7	1.6	1.8	0.8	1.1	1.5	+0.4
Tranquilizers <sup>b,k</sup>													
8th Grade	3.8	4.1	4.4	4.6	4.5	5.3	4.8	4.6	4.4	4.4	‡ 5.0	4.3	-0.7
10th Grade	5.8	5.9	5.7	5.4	6.0	7.1	7.3	7.8	7.9	8.0	‡ 9.2	8.8	-0.3
12th Grade	7.2	6.0	6.4	6.6	7.1	7.2	7.8	8.5	9.3	8.9	‡ 10.3	11.4	+1.2
Rohypnol <sup>e,o,p</sup>													
8th Grade	—	—	—	—	—	1.5	1.1	1.4	1.3	1.0	1.1	0.8	-0.3
10th Grade	—	—	—	—	—	1.5	1.7	2.0	1.8	1.3	1.5	1.3	-0.2
12th Grade	—	—	—	—	—	1.2	1.8	3.0	2.0	1.5	1.7	—	—
Alcohol <sup>q</sup>													
Any use													
8th Grade	70.1	69.3	‡ 55.7	55.8	54.5	55.3	53.8	52.5	52.1	51.7	50.5	47.0	-3.5ss
10th Grade	83.8	82.3	‡ 71.6	71.1	70.5	71.8	72.0	69.8	70.6	71.4	70.1	66.9	-3.2ss
12th Grade	88.0	87.5	‡ 80.0	80.4	80.7	79.2	81.7	81.4	80.0	80.3	79.7	78.4	-1.3
Been Drunk <sup>n</sup>													
8th Grade	26.7	26.8	26.4	25.9	25.3	26.8	25.2	24.8	24.8	25.1	23.4	21.3	-2.1s
10th Grade	50.0	47.7	47.9	47.2	46.9	48.5	49.4	46.7	48.9	49.3	48.2	44.0	-4.2sss
12th Grade	65.4	63.4	62.5	62.9	63.2	61.8	64.2	62.4	62.3	62.3	63.9	61.6	-2.3
Cigarettes													
Any use													
8th Grade	44.0	45.2	45.3	46.1	46.4	49.2	47.3	45.7	44.1	40.5	36.6	31.4	-5.1sss
10th Grade	55.1	53.5	56.3	56.9	57.6	61.2	60.2	57.7	57.6	55.1	52.8	47.4	-5.4sss
12th Grade	63.1	61.8	61.9	62.0	64.2	63.5	65.4	65.3	64.6	62.5	61.0	57.2	-3.9ss
Smokeless Tobacco <sup>e,r</sup>													
8th Grade	22.2	20.7	18.7	19.9	20.0	20.4	16.8	15.0	14.4	12.8	11.7	11.2	-0.5
10th Grade	28.2	26.6	28.1	29.2	27.6	27.4	26.3	22.7	20.4	19.1	19.5	16.9	-2.6s
12th Grade	—	32.4	31.0	30.7	30.9	29.8	25.3	26.2	23.4	23.1	19.7	18.3	-1.4
Steroids <sup>n</sup>													
8th Grade	1.9	1.7	1.6	2.0	2.0	1.8	1.8	2.3	2.7	3.0	2.8	2.5	-0.3
10th Grade	1.8	1.7	1.7	1.8	2.0	1.8	2.0	2.0	2.7	3.5	3.5	3.5	0.0
12th Grade	2.1	2.1	2.0	2.4	2.3	1.9	2.4	2.7	2.9	2.5	3.7	4.0	+0.3

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001.  
 '—' indicates data not available.  
 '‡' indicates some change in the question. See relevant footnote for that drug.  
 Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.

SOURCE: The Monitoring the Future Study, the University of Michigan.

**TABLE 5-5b**  
**Trends in Annual and 30-Day Prevalence of Use of Various Drugs**  
**for Eighth, Tenth, and Twelfth Graders**

	Annual												'01-'02 change	30-Day												'01-'02 change
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002		1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	
Any Illicit Drug <sup>a</sup>	11.3	12.9	15.1	18.5	21.4	23.6	22.1	21.0	20.5	19.5	19.5	17.7	-1.7s	5.7	6.8	8.4	10.9	12.4	14.6	12.9	12.1	12.2	11.9	11.7	10.4	-1.2
8th Grade	21.4	20.4	24.7	30.0	33.3	37.5	38.5	35.0	35.9	36.4	37.2	34.8	-2.4s	11.6	11.0	14.0	18.5	20.2	23.2	23.0	21.5	22.1	22.5	22.7	20.8	-1.9s
10th Grade	29.4	27.1	31.0	35.8	39.0	40.2	42.4	41.4	42.1	40.9	41.4	41.0	-0.5	16.4	14.4	18.3	21.9	23.8	24.6	26.2	25.6	25.9	24.9	25.7	25.4	-0.4
12th Grade																										
Any Illicit Drug Other Than Marijuana <sup>a,b</sup>	8.4	9.3	10.4	11.3	12.6	13.1	11.8	11.0	10.5	10.2	10.8	8.8	-2.0ss	3.8	4.7	5.3	5.6	6.5	6.9	6.0	5.5	5.5	5.6	5.5	4.7	-0.8
8th Grade	12.2	12.3	13.9	15.2	17.5	18.4	18.2	16.6	16.7	16.7	17.9	15.7	-2.1s	5.5	5.7	6.5	7.1	8.9	8.9	8.8	8.6	8.6	8.5	8.7	8.1	-0.6
10th Grade	16.2	14.9	17.1	18.0	19.4	19.8	20.7	20.2	20.7	20.4	21.6	20.9	-0.7	7.1	6.3	7.9	8.8	10.0	9.5	10.7	10.7	10.4	10.4	11.0	11.3	+0.3
12th Grade																										
Any Illicit Drug Including Inhalants <sup>a,c</sup>	16.7	18.2	21.1	24.2	27.1	28.7	27.2	26.2	25.3	24.0	23.9	21.4	-2.5ss	8.8	10.0	12.0	14.3	16.1	17.5	16.0	14.9	15.1	14.4	14.0	12.6	-1.4s
8th Grade	23.9	23.5	27.4	32.5	35.6	39.6	40.3	37.1	37.7	38.0	38.7	36.1	-2.6s	13.1	12.6	15.5	20.0	21.6	24.5	24.1	22.5	23.1	23.6	23.6	21.7	-1.9s
10th Grade	31.2	28.8	32.5	37.6	40.2	41.9	43.3	42.4	42.8	42.5	42.6	42.1	-0.5	17.8	15.5	19.3	23.0	24.8	25.5	26.9	26.6	26.4	26.4	26.5	25.9	-0.5
12th Grade																										
Marijuana/Hashish	6.2	7.2	9.2	13.0	15.8	18.3	17.7	16.9	16.5	15.6	15.4	14.6	-0.8	3.2	3.7	5.1	7.8	9.1	11.3	10.2	9.7	9.7	9.1	9.2	8.3	-0.9
8th Grade	16.5	15.2	19.2	25.2	28.7	33.6	34.8	31.1	32.1	32.2	32.7	30.3	-2.4s	8.7	8.1	10.9	15.8	17.2	20.4	20.5	18.7	19.4	19.7	19.8	17.8	-1.9s
10th Grade	23.9	21.9	26.0	30.7	34.7	35.8	38.5	37.5	37.8	36.5	37.0	36.2	-0.8	13.8	11.9	15.5	19.0	21.2	21.9	23.7	22.8	23.1	21.6	22.4	21.5	-0.9
12th Grade																										
Inhalants <sup>c,d</sup>	9.0	9.5	11.0	11.7	12.8	12.2	11.8	11.1	10.3	9.4	9.1	7.7	-1.4ss	4.4	4.7	5.4	5.6	6.1	5.8	5.6	4.8	5.0	4.5	4.0	3.8	-0.2
8th Grade	7.1	7.5	8.4	9.1	9.6	9.5	8.7	8.0	7.2	7.3	6.6	5.8	-0.9	2.7	2.7	3.3	3.6	3.5	3.3	3.0	2.9	2.6	2.6	2.4	2.4	-0.1
10th Grade	6.6	6.2	7.0	7.7	8.0	7.6	6.7	6.2	5.6	5.9	4.5	4.5	0.0	2.4	2.3	2.5	2.7	3.2	2.5	2.5	2.3	2.0	2.2	1.7	1.5	-0.2
12th Grade																										
Nitrites <sup>e</sup>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	0.9	0.5	0.9	1.1	1.1	1.6	1.2	1.4	0.9	0.6	0.6	1.1	+0.5	0.4	0.3	0.6	0.4	0.4	0.7	0.7	1.0	0.4	0.3	0.5	0.6	+0.1
12th Grade																										
Hallucinogens <sup>b,f</sup>	1.9	2.5	2.6	2.7	3.6	4.1	3.7	3.4	2.9	2.8	3.4	2.6	-0.8	0.8	1.1	1.2	1.3	1.7	1.9	1.8	1.4	1.3	1.2	1.6	1.2	-0.4
8th Grade	4.0	4.3	4.7	5.8	7.2	7.8	7.6	6.9	6.9	6.1	6.2	4.7	-1.5s	1.6	1.8	1.9	2.4	3.3	2.8	3.3	3.2	2.9	2.3	2.1	1.6	-0.4
10th Grade	5.8	5.9	7.4	7.6	9.3	10.1	9.8	9.0	9.4	8.1	9.1	6.6	-2.5sss	2.2	2.1	2.7	3.1	4.4	3.5	3.9	3.8	3.5	2.6	3.3	2.3	-1.0ss
12th Grade																										
LSD	1.7	2.1	2.3	2.4	3.2	3.5	3.2	2.8	2.4	2.4	2.2	1.5	-0.7s	0.6	0.9	1.0	1.1	1.4	1.5	1.5	1.1	1.1	1.0	1.0	0.7	-0.3
8th Grade	3.7	4.0	4.2	5.2	6.5	6.9	6.7	5.9	6.0	5.1	4.1	2.6	-1.6sss	1.5	1.6	1.6	2.0	3.0	2.4	2.8	2.7	2.3	1.6	1.5	0.7	-0.8sss
10th Grade	5.2	5.6	6.8	6.9	8.4	8.8	8.4	7.6	8.1	6.6	6.6	3.5	-3.1sss	1.9	2.0	2.4	2.6	4.0	2.5	3.1	3.2	2.7	1.6	2.3	0.7	-1.6sss
12th Grade																										
Hallucinogens Other Than LSD <sup>b</sup>	0.7	1.1	1.0	1.3	1.7	2.0	1.8	1.6	1.5	1.4	2.4	2.1	-0.3	0.3	0.4	0.5	0.7	0.8	0.9	0.7	0.7	0.6	0.6	1.1	1.0	-0.2
8th Grade	1.3	1.4	1.9	2.4	2.8	3.3	3.3	3.4	3.2	3.1	4.3	4.0	-0.4	0.4	0.5	0.7	1.0	1.0	1.0	1.2	1.4	1.2	1.2	1.4	1.4	0.0
10th Grade	2.0	1.7	2.2	3.1	3.8	4.4	4.6	4.6	4.3	4.4	5.9	5.4	-0.4	0.7	0.5	0.8	1.2	1.3	1.6	1.7	1.6	1.6	1.7	1.9	2.0	+0.1
12th Grade																										

(Table continued on next page)

**TABLE 5-5b (cont.)**  
**Trends in Annual and 30-Day Prevalence of Use of Various Drugs**  
**for Eighth, Tenth, and Twelfth Graders**

	<u>Annual</u>												<u>30-Day</u>													
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	'01-'02 change	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	'01-'02 change
PCP <sup>e</sup>																										
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	1.4	1.4	1.4	1.6	1.8	2.6	2.3	2.1	1.8	2.3	1.8	1.1	-0.7	0.5	0.6	1.0	0.7	0.6	1.3	0.7	1.0	0.8	0.9	0.5	0.4	-0.1
MDMA (Ecstasy) <sup>g</sup>																										
8th Grade	—	—	—	—	—	2.3	2.3	1.8	1.7	3.1	3.5	2.9	-0.6	—	—	—	—	—	1.0	1.0	0.9	0.8	1.4	1.8	1.4	-0.5
10th Grade	—	—	—	—	—	4.6	3.9	3.3	4.4	5.4	6.2	4.9	-1.3s	—	—	—	—	—	1.8	1.3	1.3	1.8	2.6	2.6	1.8	-0.8s
12th Grade	—	—	—	—	—	4.6	4.0	3.6	5.6	8.2	9.2	7.4	-1.8	—	—	—	—	—	2.0	1.6	1.5	2.5	3.6	2.8	2.4	-0.4
Cocaine																										
8th Grade	1.1	1.5	1.7	2.1	2.6	3.0	2.8	3.1	2.7	2.6	2.5	2.3	-0.3	0.5	0.7	0.7	1.0	1.2	1.3	1.1	1.4	1.3	1.2	1.2	1.1	-0.1
10th Grade	2.2	1.9	2.1	2.8	3.5	4.2	4.7	4.7	4.9	4.4	3.6	4.0	+0.5	0.7	0.7	0.9	1.2	1.7	1.7	2.0	2.1	1.8	1.8	1.3	1.6	+0.3
12th Grade	3.5	3.1	3.3	3.6	4.0	4.9	5.5	5.7	6.2	5.0	4.8	5.0	+0.2	1.4	1.3	1.3	1.5	1.8	2.0	2.3	2.4	2.6	2.1	2.1	2.3	+0.2
Crack																										
8th Grade	0.7	0.9	1.0	1.3	1.6	1.8	1.7	2.1	1.8	1.8	1.7	1.6	-0.1	0.3	0.5	0.4	0.7	0.7	0.8	0.7	0.9	0.8	0.8	0.8	0.8	0.0
10th Grade	0.9	0.9	1.1	1.4	1.8	2.1	2.2	2.5	2.4	2.2	1.8	2.3	+0.5s	0.3	0.4	0.5	0.6	0.9	0.8	0.9	1.1	0.8	0.9	0.7	1.0	+0.2
12th Grade	1.5	1.5	1.5	1.9	2.1	2.1	2.4	2.5	2.7	2.2	2.1	2.3	+0.2	0.7	0.6	0.7	0.8	1.0	1.0	0.9	1.0	1.1	1.0	1.1	1.2	+0.1
Other Cocaine <sup>h</sup>																										
8th Grade	1.0	1.2	1.3	1.7	2.1	2.5	2.2	2.4	2.3	1.9	1.9	1.8	-0.1	0.5	0.5	0.6	0.9	1.0	1.0	0.8	1.0	1.1	0.9	0.9	0.8	-0.2
10th Grade	2.1	1.7	1.8	2.4	3.0	3.5	4.1	4.0	4.4	3.8	3.0	3.4	+0.4	0.6	0.6	0.7	1.0	1.4	1.3	1.6	1.8	1.6	1.6	1.2	1.3	+0.2
12th Grade	3.2	2.6	2.9	3.0	3.4	4.2	5.0	4.9	5.8	4.5	4.4	4.4	0.0	1.2	1.0	1.2	1.3	1.3	1.6	2.0	2.0	2.5	1.7	1.8	1.9	+0.1
Heroin <sup>i</sup>																										
8th Grade	0.7	0.7	0.7	1.2	1.4	1.6	1.3	1.3	1.4	1.1	1.0	0.9	-0.1	0.3	0.4	0.4	0.6	0.6	0.7	0.6	0.6	0.6	0.5	0.6	0.5	-0.1
10th Grade	0.5	0.6	0.7	0.9	1.1	1.2	1.4	1.4	1.4	1.4	0.9	1.1	+0.1	0.2	0.2	0.3	0.4	0.6	0.5	0.6	0.7	0.7	0.5	0.3	0.5	+0.2
12th Grade	0.4	0.6	0.5	0.6	1.1	1.0	1.2	1.0	1.1	1.5	0.9	1.0	+0.1	0.2	0.3	0.2	0.3	0.6	0.5	0.5	0.5	0.5	0.7	0.4	0.5	+0.1
With a needle <sup>j</sup>																										
8th Grade	—	—	—	—	0.9	1.0	0.8	0.8	0.9	0.6	0.7	0.6	-0.1	—	—	—	—	0.4	0.5	0.4	0.5	0.4	0.3	0.4	0.3	-0.1
10th Grade	—	—	—	—	0.6	0.7	0.7	0.8	0.6	0.5	0.4	0.6	+0.1	—	—	—	—	0.3	0.3	0.3	0.4	0.3	0.3	0.2	0.3	+0.1
12th Grade	—	—	—	—	0.5	0.5	0.5	0.4	0.4	0.4	0.3	0.4	+0.1	—	—	—	—	0.3	0.4	0.3	0.2	0.2	0.2	0.2	0.3	+0.1
Without a needle <sup>k</sup>																										
8th Grade	—	—	—	—	0.8	1.0	0.8	0.8	0.9	0.7	0.6	0.6	0.0	—	—	—	—	0.3	0.4	0.4	0.3	0.4	0.3	0.4	0.3	-0.1
10th Grade	—	—	—	—	0.8	0.9	1.1	1.0	1.1	1.1	0.7	0.8	+0.1	—	—	—	—	0.3	0.3	0.4	0.5	0.5	0.4	0.2	0.4	+0.1
12th Grade	—	—	—	—	1.0	1.0	1.2	0.8	1.0	1.6	0.8	0.8	0.0	—	—	—	—	0.6	0.4	0.6	0.4	0.4	0.7	0.3	0.5	+0.1
Other Narcotics <sup>k</sup>																										
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	3.5	3.3	3.6	3.8	4.7	5.4	6.2	6.3	6.7	7.0	6.7	7.0	+0.2 <sup>l</sup>	1.1	1.2	1.3	1.5	1.8	2.0	2.3	2.4	2.6	2.9	3.0	3.1	+0.2 <sup>l</sup>
Oxycontin <sup>m,n</sup>																										
8th Grade	—	—	—	—	—	—	—	—	—	—	—	1.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	3.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	—	—	—	—	—	—	—	—	—	—	—	4.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—

(Table continued on next page)

**TABLE 5-5b (cont.)**  
**Trends in Annual and 30-Day Prevalence of Use of Various Drugs**  
**for Eighth, Tenth, and Twelfth Graders**

	<u>Annual</u>												'01-'02 change	<u>30-Day</u>												'01-'02 change	
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002		1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002		
Vicodin <sup>m,n</sup>																											
8th Grade	—	—	—	—	—	—	—	—	—	—	—	2.5	—	—	—	—	—	—	—	—	—	—	—	—	—		
10th Grade	—	—	—	—	—	—	—	—	—	—	—	6.9	—	—	—	—	—	—	—	—	—	—	—	—	—		
12th Grade	—	—	—	—	—	—	—	—	—	—	—	9.6	—	—	—	—	—	—	—	—	—	—	—	—	—		
Amphetamines <sup>k</sup>																											
8th Grade	6.2	6.5	7.2	7.9	8.7	9.1	8.1	7.2	6.9	6.5	6.7	5.5	-1.2s	2.6	3.3	3.6	3.6	4.2	4.6	3.8	3.3	3.4	3.4	3.2	2.8	-0.4	
10th Grade	8.2	8.2	9.6	10.2	11.9	12.4	12.1	10.7	10.4	11.1	11.7	10.7	-1.0	3.3	3.6	4.3	4.5	5.3	5.5	5.1	5.1	5.0	5.4	5.6	5.2	-0.4	
12th Grade	8.2	7.1	8.4	9.4	9.3	9.5	10.2	10.1	10.2	10.5	10.9	11.1	+0.2	3.2	2.8	3.7	4.0	4.0	4.1	4.8	4.6	4.5	5.0	5.6	5.5	-0.2	
Ritalin <sup>m,n</sup>																											
8th Grade	—	—	—	—	—	—	—	—	—	—	2.9	2.8	-0.1	—	—	—	—	—	—	—	—	—	—	—	—	—	
10th Grade	—	—	—	—	—	—	—	—	—	—	4.8	4.8	0.0	—	—	—	—	—	—	—	—	—	—	—	—	—	
12th Grade	—	—	—	—	—	—	—	—	—	—	5.1	4.0	-1.1	—	—	—	—	—	—	—	—	—	—	—	—	—	
Methamphetamine <sup>m,n</sup>																											
8th Grade	—	—	—	—	—	—	—	—	—	3.2	2.5	2.8	-0.6	—	—	—	—	—	—	—	—	1.1	0.8	1.3	1.1	-0.2	
10th Grade	—	—	—	—	—	—	—	—	—	4.6	4.0	3.7	3.9	+0.2	—	—	—	—	—	—	—	1.8	2.0	1.5	1.8	+0.4	
12th Grade	—	—	—	—	—	—	—	—	—	4.7	4.3	3.9	3.6	-0.3	—	—	—	—	—	—	—	1.7	1.9	1.5	1.7	+0.1	
Ice <sup>n</sup>																											
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
12th Grade	1.4	1.3	1.7	1.8	2.4	2.8	2.3	3.0	1.9	2.2	2.5	3.0	+0.6	0.6	0.5	0.6	0.7	1.1	1.1	0.8	1.2	0.8	1.0	1.1	1.2	+0.1	
Sedatives (Barbiturates) <sup>k</sup>																											
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
12th Grade	3.4	2.8	3.4	4.1	4.7	4.9	5.1	5.5	5.8	6.2	5.7	6.7	+1.0s	1.4	1.1	1.3	1.7	2.2	2.1	2.1	2.6	2.6	3.0	2.8	3.2	+0.4	
Methaqualone <sup>e,k</sup>																											
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
12th Grade	0.5	0.6	0.2	0.8	0.7	1.1	1.0	1.1	1.1	0.3	0.8	0.9	+0.2	0.2	0.4	0.1	0.4	0.4	0.6	0.3	0.6	0.4	0.2	0.5	0.3	-0.2	
Tranquilizers <sup>b,k</sup>																											
8th Grade	1.8	2.0	2.1	2.4	2.7	3.3	2.9	2.6	2.5	2.6	2.8	2.6	-0.3	0.8	0.8	0.9	1.1	1.2	1.5	1.2	1.2	1.1	1.4	1.2	1.2	0.0	
10th Grade	3.2	3.5	3.3	3.3	4.0	4.6	4.9	5.1	5.4	5.6	7.3	6.3	-1.0	1.2	1.5	1.1	1.5	1.7	1.7	2.2	2.2	2.2	2.5	2.9	2.9	0.0	
12th Grade	3.6	2.8	3.5	3.7	4.4	4.6	4.7	5.5	5.8	5.7	6.9	7.7	+0.8	1.4	1.0	1.2	1.4	1.8	2.0	1.8	2.4	2.5	2.6	2.9	3.3	+0.4	
Rohypnol <sup>e,o,p</sup>																											
8th Grade	—	—	—	—	—	1.0	0.8	0.8	0.5	0.5	0.7	0.3	-0.4	—	—	—	—	—	0.5	0.3	0.4	0.3	0.3	0.4	0.2	-0.2	
10th Grade	—	—	—	—	—	1.1	1.3	1.2	1.0	0.8	1.0	0.7	-0.3	—	—	—	—	—	0.5	0.5	0.4	0.5	0.4	0.2	0.4	+0.2	
12th Grade	—	—	—	—	—	1.1	1.2	1.4	1.0	0.8	0.9	1.6	— <sup>p</sup>	—	—	—	—	—	0.5	0.3	0.3	0.3	0.4	0.3	—	—	
GHB <sup>m,s</sup>																											
8th Grade	—	—	—	—	—	—	—	—	—	1.2	1.1	0.8	-0.2	—	—	—	—	—	—	—	—	—	—	—	—	—	
10th Grade	—	—	—	—	—	—	—	—	—	1.1	1.0	1.4	+0.4	—	—	—	—	—	—	—	—	—	—	—	—	—	
12th Grade	—	—	—	—	—	—	—	—	—	1.9	1.6	1.5	-0.1	—	—	—	—	—	—	—	—	—	—	—	—	—	
Ketamine <sup>m,t</sup>																											
8th Grade	—	—	—	—	—	—	—	—	—	1.6	1.3	1.3	0.0	—	—	—	—	—	—	—	—	—	—	—	—	—	
10th Grade	—	—	—	—	—	—	—	—	—	2.1	2.1	2.2	+0.1	—	—	—	—	—	—	—	—	—	—	—	—	—	
12th Grade	—	—	—	—	—	—	—	—	—	2.5	2.5	2.6	+0.1	—	—	—	—	—	—	—	—	—	—	—	—	—	

(Table continued on next page)

**TABLE 5-5b (cont.)**  
**Trends in Annual and 30-Day Prevalence of Use of Various Drugs**  
**for Eighth, Tenth, and Twelfth Graders**

	Annual												'01-'02 change	30-Day												'01-'02 change
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002		1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	
Alcohol <sup>a</sup>																										
Any use																										
8th Grade	54.0	53.7	‡45.4	46.8	45.3	46.5	45.5	43.7	43.5	43.1	41.9	38.7	-3.2ss	25.1	26.1	‡24.3	25.5	24.6	26.2	24.5	23.0	24.0	22.4	21.5	19.6	-1.9s
10th Grade	72.3	70.2	‡63.4	63.9	63.5	65.0	65.2	62.7	63.7	65.3	63.5	60.0	-3.5ss	42.8	39.9	‡38.2	39.2	38.8	40.4	40.1	38.8	40.0	41.0	39.0	35.4	-3.6ss
12th Grade	77.7	76.8	‡72.7	73.0	73.7	72.5	74.8	74.3	73.8	73.2	73.3	71.5	-1.8	54.0	51.3	‡48.6	50.1	51.3	50.8	52.7	52.0	51.0	50.0	49.8	48.6	-1.2
Been Drunk <sup>n</sup>																										
8th Grade	17.5	18.3	18.2	18.2	18.4	19.8	18.4	17.9	18.5	18.5	16.6	15.0	-1.6s	7.6	7.5	7.8	8.7	8.3	9.6	8.2	8.4	9.4	8.3	7.7	6.7	-1.0
10th Grade	40.1	37.0	37.8	38.0	38.5	40.1	40.7	38.3	40.9	41.6	39.9	35.4	-4.5sss	20.5	18.1	19.8	20.3	20.8	21.3	22.4	21.1	22.5	23.5	21.9	18.3	-3.6sss
12th Grade	52.7	50.3	49.6	51.7	52.5	51.9	53.2	52.0	53.2	51.8	53.2	50.4	-2.8	31.6	29.9	28.9	30.8	33.2	31.3	34.2	32.9	32.9	32.3	32.7	30.3	-2.4
Cigarettes																										
Any use																										
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	14.3	15.5	16.7	18.6	19.1	21.0	19.4	19.1	17.5	14.6	12.2	10.7	-1.5s
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	20.8	21.5	24.7	25.4	27.9	30.4	29.8	27.6	25.7	23.9	21.3	17.7	-3.6sss
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	28.3	27.8	29.9	31.2	33.5	34.0	36.5	35.1	34.6	31.4	29.5	26.7	-2.8s
Bidis <sup>m,n</sup>																										
8th Grade	—	—	—	—	—	—	—	—	—	—	3.9	2.7	2.7	0.0	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	6.4	4.9	3.1	-1.8ss	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	—	—	—	—	—	—	—	—	—	—	9.2	7.0	5.9	-1.2	—	—	—	—	—	—	—	—	—	—	—	—
Kreteks <sup>m,n</sup>																										
8th Grade	—	—	—	—	—	—	—	—	—	—	—	2.6	2.6	-0.1	—	—	—	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—	—	—	6.0	4.9	-1.2	—	—	—	—	—	—	—	—	—	—	—	—
12th Grade	—	—	—	—	—	—	—	—	—	—	10.1	8.4	-1.7	—	—	—	—	—	—	—	—	—	—	—	—	—
Smokeless Tobacco <sup>e,f</sup>																										
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	6.9	7.0	6.6	7.7	7.1	7.1	5.5	4.8	4.5	4.2	4.0	3.3	-0.8
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	10.0	9.6	10.4	10.5	9.7	8.6	8.9	7.5	6.5	6.1	6.9	6.1	-0.8
12th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	11.4	10.7	11.1	12.2	9.8	9.7	8.8	8.4	7.6	7.8	6.5	-1.4
Steroids <sup>n</sup>																										
8th Grade	1.0	1.1	0.9	1.2	1.0	0.9	1.0	1.2	1.7	1.7	1.6	1.5	-0.1	0.4	0.5	0.5	0.5	0.6	0.4	0.5	0.5	0.7	0.8	0.7	0.8	0.0
10th Grade	1.1	1.1	1.0	1.1	1.2	1.2	1.2	1.2	1.7	2.2	2.1	2.2	+0.1	0.6	0.6	0.5	0.6	0.6	0.5	0.7	0.6	0.9	1.0	0.9	1.0	+0.1
12th Grade	1.4	1.1	1.2	1.3	1.5	1.4	1.4	1.7	1.8	1.7	2.4	2.5	+0.1	0.8	0.6	0.7	0.9	0.7	0.7	1.0	1.1	0.9	0.8	1.3	1.4	+0.1

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001.

'—' indicates data not available.

‡ indicates some change in the question. See relevant footnote for that drug.

Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.

SOURCE: The Monitoring the Future Study, the University of Michigan.



**TABLE 5-5c**  
**Trends in 30-Day Prevalence of Daily Use of Various Drugs for Eighth, Tenth, and Twelfth Graders**

	<u>Daily</u>												'01-'02 change
	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	
Marijuana/Hashish, daily <sup>u</sup>													
8th Grade	0.2	0.2	0.4	0.7	0.8	1.5	1.1	1.1	1.4	1.3	1.3	1.2	-0.1
10th Grade	0.8	0.8	1.0	2.2	2.8	3.5	3.7	3.6	3.8	3.8	4.5	3.9	-0.6s
12th Grade	2.0	1.9	2.4	3.6	4.6	4.9	5.8	5.6	6.0	6.0	5.8	6.0	+0.1
Alcohol <sup>u</sup>													
Any daily use													
8th Grade	0.5	0.6	‡ 1.0	1.0	0.7	1.0	0.8	0.9	1.0	0.8	0.9	0.7	-0.2
10th Grade	1.3	1.2	‡ 1.8	1.7	1.7	1.6	1.7	1.9	1.9	1.8	1.9	1.8	-0.1
12th Grade	3.6	3.4	‡ 3.4	2.9	3.5	3.7	3.9	3.9	3.4	2.9	3.6	3.5	-0.1
Been Drunk, daily <sup>u</sup>													
8th Grade	0.1	0.1	0.2	0.3	0.2	0.2	0.2	0.3	0.4	0.3	0.2	0.3	0.0
10th Grade	0.2	0.3	0.4	0.4	0.6	0.4	0.6	0.6	0.7	0.5	0.6	0.5	-0.2
12th Grade	0.9	0.8	0.9	1.2	1.3	1.6	2.0	1.5	1.9	1.7	1.4	1.2	-0.2
5+ drinks in a row in last 2 weeks													
8th Grade	12.9	13.4	13.5	14.5	14.5	15.6	14.5	13.7	15.2	14.1	13.2	12.4	-0.8
10th Grade	22.9	21.1	23.0	23.6	24.0	24.8	25.1	24.3	25.6	26.2	24.9	22.4	-2.4s
12th Grade	29.8	27.9	27.5	28.2	29.8	30.2	31.3	31.5	30.8	30.0	29.7	28.6	-1.1
Cigarettes													
Any daily use													
8th Grade	7.2	7.0	8.3	8.8	9.3	10.4	9.0	8.8	8.1	7.4	5.5	5.1	-0.3
10th Grade	12.6	12.3	14.2	14.6	16.3	18.3	18.0	15.8	15.9	14.0	12.2	10.1	-2.1ss
12th Grade	18.5	17.2	19.0	19.4	21.6	22.2	24.6	22.4	23.1	20.6	19.0	16.9	-2.1s
1/2 pack+/day													
8th Grade	3.1	2.9	3.5	3.6	3.4	4.3	3.5	3.6	3.3	2.8	2.3	2.1	-0.2
10th Grade	6.5	6.0	7.0	7.6	8.3	9.4	8.6	7.9	7.6	6.2	5.5	4.4	-1.2s
12th Grade	10.7	10.0	10.9	11.2	12.4	13.0	14.3	12.6	13.2	11.3	10.3	9.1	-1.2
Smokeless Tobacco, daily <sup>u,r</sup>													
8th Grade	1.6	1.8	1.5	1.9	1.2	1.5	1.0	1.0	0.9	0.9	1.2	0.8	-0.4
10th Grade	3.3	3.0	3.3	3.0	2.7	2.2	2.2	2.2	1.5	1.9	2.2	1.7	-0.6
12th Grade	—	4.3	3.3	3.9	3.6	3.3	4.4	3.2	2.9	3.2	2.8	2.0	-0.9

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001.  
 '—' indicates data not available.

‡ indicates some change in the question. See relevant footnote for that drug.

Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.

SOURCE: The Monitoring the Future Study, the University of Michigan.

### Footnotes for Table 5-5a to Table 5-5c

Approximate Weighted Ns	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
8th Grade	17,500	18,600	18,300	17,300	17,500	17,800	18,600	18,100	16,700	16,700	16,200	15,100
10th Grade	14,800	14,800	15,300	15,800	17,000	15,600	15,500	15,000	13,600	14,300	14,000	14,300
12th Grade	15,000	15,800	16,300	15,400	15,400	14,300	15,400	15,200	13,600	12,800	12,800	12,900

<sup>a</sup>For 12th graders only: Use of “any illicit drug” includes any use of marijuana, LSD, other hallucinogens, crack, other cocaine, or heroin, or any use of other narcotics, amphetamines, sedatives (barbiturates), or tranquilizers not under a doctor’s orders. For 8th and 10th graders: The use of other narcotics and barbiturates has been excluded, because these younger respondents appear to overreport use (perhaps because they include the use of nonprescription drugs in their answers).

<sup>b</sup>In 2001 the question text was changed on half of the questionnaire forms for each grade. “Other psychedelics” was changed to “other hallucinogens” and “shrooms” was added to the list of examples. For the tranquilizer list of examples, Miltown was replaced with Xanax. The 2001 data presented here are based on the changed forms only; N is one-half of N indicated. In 2002 the remaining forms were changed to the new wording. The 2002 data are based on all forms. Data for “any illicit drug other than marijuana” and “hallucinogens” are also affected by these changes and have been handled in a parallel manner.

<sup>c</sup>For 12th graders only: Data based on five of six forms in 1991-98; N is five-sixths of N indicated. Beginning in 1999, data based on three of six forms; N is one-half of N indicated.

<sup>d</sup>Inhalants are unadjusted for underreporting of amyl and butyl nitrites.

<sup>e</sup>For 12th graders only: Data based on one of six forms; N is one-sixth of N indicated.

<sup>f</sup>Hallucinogens are unadjusted for underreporting of PCP.

<sup>g</sup>For 8th and 10th graders only: Data based on one of two forms in 1996; N is one-half of N indicated. In 1997–2001, data based on one-third of N indicated due to changes on the questionnaire forms. Data based on two of four forms in 2002; N is one-half of N indicated. For 12th graders only: Data based on one of six forms in 1996–2001; N is one-sixth of N indicated. Data based on two of six forms in 2002; N is two-sixths of N indicated.

<sup>h</sup>For 12th graders only: Data based on four of six forms; N is four-sixths of N indicated.

<sup>i</sup>In 1995, the heroin question was changed in three of six forms for 12th graders and in one of two forms for 8th and 10th graders. Separate questions were asked for use with injection and without injection. Data presented here represent the combined data from all forms. In 1996, the heroin question was changed in all remaining 8th and 10th grade forms.

<sup>j</sup>For 8th and 10th graders only: Data based on one of two forms in 1995; N is one-half of N indicated. Data based on all forms beginning in 1996. For 12th graders only: Data based on three of six forms; N is one-half of N indicated.

<sup>k</sup>Only drug use not under a doctor’s orders is included here.

<sup>l</sup>In 2002 the question text was changed in half of the questionnaire forms. The list of examples of narcotics other than heroin was updated: Talwin, laudanum, and paregoric—all of which had negligible rates of use by 2001—were replaced with Vicodin, Oxycontin, and Percocet. The 2001 data presented here are based on all forms. The 2002 estimates are based on the 2001 prevalence of use rate plus the increase observed

from 2001 to 2002 in the half-sample in which the question did not change. Thus, the change score given in the right-hand column is the difference between the data from the unchanged forms only in both 2001 and 2002.

<sup>m</sup>For 8th and 10th graders only: Data based on one of four forms; N is one-third of N indicated.

<sup>n</sup>For 12th graders only: Data based on two of six forms; N is two-sixths of N indicated.

<sup>o</sup>For 8th and 10th graders only: Data based on one of two forms in 1996; N is one-half of N indicated. Data based on three of four forms in 1997–98; N is two-thirds of N indicated. Data based on two of four forms in 1999–2001; N is one-third of N indicated. Data based on one of four forms in 2002; N is one-sixth of N indicated.

<sup>p</sup>For 12th graders only: Data for Rohypnol for 2001 and 2002 are not comparable due to changes in the questionnaire forms.

<sup>q</sup>In 1993, the question text was changed slightly in half of the forms to indicate that a “drink” meant “more than a few sips.” The 1993 data are based on the changed forms only; N is one-half of N indicated. In 1994 the remaining forms were changed to the new wording. Beginning in 1994, the data are based on all forms.

<sup>r</sup>For 8th and 10th graders only: Data based on one of two forms for 1991–96 and on two of four forms beginning in 1997; N is one-half of N indicated.

<sup>s</sup>For 12th graders only: Data based on two of six forms in 2000; N is two-sixths of N indicated. Data based on three of six forms in 2001; N is one-half of N indicated. Data based on one of six forms in 2002; N is one-sixth of N indicated.

<sup>t</sup>For 12th graders only: Data based on two of six forms in 2000; N is two-sixths of N indicated. Data based on three of six forms beginning in 2001; N is one-half of N indicated.

<sup>u</sup>Daily use is defined as use on twenty or more occasions in the past thirty days except for cigarettes and smokeless tobacco, for which actual daily use is measured, and for 5+ drinks, for which the prevalence of having five or more drinks in a row in the last two weeks is measured.

**TABLE 5-6**  
**Trends in Prevalence of Use of Heroin *with* and *without* a Needle**  
**Eighth, Tenth, and Twelfth Graders**

(Entries are percentages of all respondents)

	<u>Percentage who used in:</u>																											
	<u>Lifetime</u>									<u>Past year</u>									<u>Past month</u>									
	1995	1996	1997	1998	1999	2000	2001	2002	'01-'02 change	1995	1996	1997	1998	1999	2000	2001	2002	'01-'02 change	1995	1996	1997	1998	1999	2000	2001	2002	'01-'02 change	
<b>Eighth Graders</b>																												
Used heroin:																												
Only <i>with</i> a needle	0.7	0.8	0.7	0.8	0.9	0.6	0.6	0.6	-0.1	0.5	0.6	0.4	0.5	0.5	0.4	0.4	0.3	-0.1	0.3	0.3	0.2	0.3	0.3	0.2	0.2	0.2	0.2	-0.1
Only <i>without</i> a needle	0.7	0.9	0.8	0.9	0.7	0.8	0.6	0.6	0.0	0.5	0.5	0.5	0.5	0.5	0.5	0.3	0.3	0.0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	-0.1
Both ways	0.8	0.7	0.6	0.6	0.7	0.5	0.5	0.5	0.0	0.4	0.4	0.3	0.4	0.4	0.2	0.3	0.3	0.0	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.0
Used heroin at all	2.3	2.4	2.1	2.3	2.3	1.9	1.7	1.6	-0.1	1.4	1.6	1.3	1.3	1.4	1.1	1.0	0.9	-0.1	0.6	0.7	0.6	0.6	0.6	0.5	0.6	0.5	0.5	-0.1
<i>Approx. N</i> <i>(in thousands) =</i>	8.8	17.8	18.6	18.1	16.7	16.7	16.2	15.1		8.8	17.8	18.6	18.1	16.7	16.7	16.2	15.1		8.8	17.8	18.6	18.1	16.7	16.7	16.2	15.1		
<b>Tenth Graders</b>																												
Used heroin:																												
Only <i>with</i> a needle	0.6	0.5	0.4	0.6	0.7	0.5	0.4	0.5	+0.1	0.3	0.3	0.3	0.4	0.3	0.3	0.3	0.3	0.0	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.0
Only <i>without</i> a needle	0.7	1.1	1.0	1.2	1.1	1.2	0.8	0.9	0.0	0.5	0.6	0.7	0.6	0.8	0.8	0.5	0.5	0.0	0.2	0.2	0.3	0.3	0.4	0.2	0.1	0.2	+0.1	
Both ways	0.4	0.6	0.6	0.6	0.6	0.5	0.4	0.5	+0.1	0.3	0.3	0.4	0.4	0.3	0.2	0.2	0.3	+0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.2	+0.1	
Used heroin at all	1.7	2.1	2.1	2.3	2.3	2.2	1.7	1.8	+0.2	1.1	1.2	1.4	1.4	1.4	1.4	0.9	1.1	+0.1	0.6	0.5	0.6	0.7	0.7	0.5	0.3	0.5	+0.2	
<i>Approx. N</i> <i>(in thousands) =</i>	8.5	15.6	15.5	15.0	13.6	14.3	14.0	14.3		8.5	15.6	15.5	15.0	13.6	14.3	14.0	14.3		8.5	15.6	15.5	15.0	13.6	14.3	14.0	14.3		
<b>Twelfth Graders</b>																												
Used heroin:																												
Only <i>with</i> a needle	0.3	0.3	0.3	0.4	0.4	0.3	0.3	0.3	0.0	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	+0.1	0.1	0.2	0.1	0.1	0.1	0.2	0.1	0.1	0.0	
Only <i>without</i> a needle	0.9	1.1	1.3	1.2	1.2	1.8	1.2	1.0	-0.2	0.6	0.6	0.7	0.6	0.8	1.1	0.6	0.6	0.0	0.3	0.1	0.3	0.3	0.3	0.5	0.2	0.3	+0.1	
Both ways	0.4	0.4	0.5	0.5	0.4	0.4	0.4	0.4	+0.1	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.0	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.0	
Used heroin at all	1.6	1.8	2.1	2.0	2.0	2.4	1.8	1.7	-0.1	1.1	1.0	1.2	1.0	1.1	1.5	0.9	1.0	+0.1	0.6	0.5	0.5	0.5	0.5	0.7	0.4	0.5	+0.1	
<i>Approx. N</i> <i>(in thousands) =</i>	7.7	7.2	7.7	7.6	6.8	6.4	6.4	6.5		7.7	7.2	7.7	7.6	6.8	6.4	6.4	6.5		7.7	7.2	7.7	7.6	6.8	6.4	6.4	6.5		

NOTES: Level of significance of difference between the two most recent classes:  $s = .05$ ,  $ss = .01$ ,  $sss = .001$ .  
Any apparent inconsistency between the total who used heroin at all and the sum of those who used with a needle, without a needle, and both ways is due to rounding error.  
Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.  
Eighth- and tenth-grade data based on one of two forms in 1995 and on all forms after 1995; twelfth-grade data based on three of six forms.

SOURCE: The Monitoring the Future Study, the University of Michigan.

**TABLE 5-7a**  
**Trends in Noncontinuation Rates among Twelfth Graders**  
**Who Ever Used Drug in Lifetime**

Percentage who did not use in last twelve months

	Class of:																											
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Marijuana/Hashish	15.4	15.7	15.6	15.2	15.9	19.1	22.5	24.5	25.8	27.1	25.1	23.8	27.7	29.9	32.3	33.7	34.9	32.8	26.3	19.6	16.8	20.3	22.4	23.6	23.9	25.2	24.5	24.3
Inhalants	—	70.9	66.7	65.8	57.5	61.3	66.7	64.8	68.4	64.6	63.0	61.6	59.4	61.1	66.5	61.7	62.5	62.7	59.8	56.5	54.0	54.2	58.4	59.2	63.6	58.5	65.4	61.5
<i>Inhalants, Adjusted</i>	—	—	—	—	50.8	55.7	65.5	63.3	64.4	58.4	59.8	55.7	56.5	59.4	62.9	59.5	61.7	62.4	58.2	55.2	52.8	51.4	56.8	57.0	62.5	57.5	64.5	60.5
Amyl/Butyl Nitrites	—	—	—	—	41.4	48.6	63.4	63.3	57.1	50.6	49.4	45.3	44.7	46.9	48.5	33.3	43.7	66.7	35.7	35.3	26.7	11.1	40.0	48.1	47.1	25.0	68.4	26.7
Hallucinogens	31.3	37.7	36.7	32.9	29.8	30.1	32.3	35.2	38.7	39.3	38.8	38.1	37.9	38.2	40.4	37.2	39.6	35.9	32.1	33.3	26.8	27.9	35.1	36.2	31.4	37.7	34.4	45.0
<i>Hallucinogens, Adj.</i>	—	—	—	—	31.2	32.5	35.7	38.0	36.7	40.6	36.9	36.1	36.8	37.0	37.4	38.1	39.0	34.0	31.0	33.3	26.0	26.2	35.1	36.1	31.0	36.0	32.8	43.8
LSD	36.3	41.8	43.9	35.1	30.5	30.1	33.7	36.5	39.3	41.3	41.3	37.5	38.1	37.7	41.0	37.9	40.9	34.9	34.0	34.3	28.2	30.2	38.2	39.7	33.6	40.5	39.4	58.3
Hallucinogens	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Than LSD	33.3	42.1	38.4	37.1	36.4	36.7	38.5	41.3	43.8	42.4	44.6	47.4	40.7	48.8	48.8	48.8	45.9	48.5	43.6	36.7	29.6	35.3	38.7	35.2	35.8	36.2	37.1	41.3
PCP	—	—	—	—	45.3	54.2	59.0	63.3	53.6	54.0	40.8	50.0	56.7	58.6	38.5	57.1	51.7	41.7	51.7	42.9	33.3	35.0	41.0	46.2	47.1	32.4	48.6	64.5
MDMA (Ecstasy)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	24.6	42.0	37.9	30.0	25.5	21.4	29.5
Cocaine	37.8	38.1	33.3	30.2	22.1	21.7	24.8	28.1	29.6	28.0	24.3	24.9	32.2	34.7	36.9	43.6	55.1	49.2	45.9	39.0	33.3	31.0	36.8	38.7	36.7	41.9	41.5	35.9
Crack	—	—	—	—	—	—	—	—	—	—	—	—	27.8	35.4	34.0	45.7	51.6	42.3	42.3	36.7	30.0	36.4	38.5	43.2	41.3	43.6	43.2	39.5
Other Cocaine	—	—	—	—	—	—	—	—	—	—	—	—	30.0	38.8	38.8	46.5	54.3	50.9	46.3	42.3	33.3	34.4	39.0	41.7	34.1	41.6	40.5	37.1
Heroin	54.5	55.6	55.6	50.0	54.5	54.5	54.5	50.0	50.0	61.5	50.0	54.5	58.3	54.5	53.8	61.5	55.6	50.0	54.5	50.0	31.3	44.4	42.9	50.0	45.0	37.5	50.0	41.2
With a needle	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	28.6	37.5	44.4	50.0	55.6	50.0	57.1	50.0
Without a needle	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	28.6	41.2	42.9	50.0	44.4	33.3	46.7	50.0
Other Narcotics	36.7	40.6	37.9	39.4	38.6	35.7	41.6	44.8	45.7	46.4	42.2	42.2	42.4	46.5	47.0	45.8	47.0	45.9	43.8	42.4	34.7	34.2	36.1	35.7	34.3	34.0	32.3	30.7
Amphetamines	27.4	30.1	29.1	25.3	24.4	21.2	19.3	27.2	33.5	36.6	39.7	42.7	43.5	44.9	43.5	48.0	46.8	48.9	44.4	40.1	39.2	37.9	38.2	38.4	37.4	32.7	32.7	33.9
Methamphetamine	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Crystal Meth. (Ice)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	51.9	57.6	55.2	45.2	47.1	38.5	36.4	47.7	43.4	60.4	45.0	39.0	36.2
Sedatives (Barbi-	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
turates)	36.7	40.7	40.4	40.9	36.4	38.2	41.6	46.6	47.5	50.5	50.0	50.0	51.4	52.2	49.2	50.0	45.2	49.1	46.0	41.4	36.5	35.5	37.0	36.8	34.8	32.6	34.5	29.5
Sedatives, Adj.	35.7	39.5	37.9	38.1	32.2	30.9	34.4	40.1	45.1	50.4	50.8	50.0	52.9	52.6	50.0	—	—	—	—	—	—	—	—	—	—	—	—	—
Methaqualone	37.0	39.7	38.8	38.0	28.9	24.2	28.3	36.4	46.5	54.2	58.2	59.6	62.5	60.6	51.9	69.6	61.5	62.5	75.0	42.9	41.7	45.0	41.2	31.3	38.9	62.5	27.3	40.0
Tranquilizers	37.6	38.7	40.0	41.8	41.1	42.8	45.6	50.0	48.1	50.8	48.7	46.8	49.5	48.9	50.0	51.4	50.0	53.3	45.3	43.9	38.0	36.1	39.7	35.3	37.6	36.0	29.3	32.5
Rohypnol	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.3	33.3	53.3	50.0	46.7	47.1	—
Alcohol <sup>a</sup>	6.2	6.7	5.9	5.8	5.3	5.7	6.0	6.5	5.7	7.1	7.2	7.4	7.0	7.3	8.8	9.9	11.7	12.2	† 9.1	9.2	8.7	8.5	8.4	8.7	7.8	8.8	8.0	8.8
Been Drunk	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	19.4	20.7	20.6	17.8	16.9	16.0	17.1	16.7	14.6	16.9	16.7	18.2
Cigarettes <sup>b</sup>	16.0	16.7	16.2	17.9	19.6	21.4	20.8	19.1	18.6	18.5	15.9	17.0	17.1	18.2	18.5	18.2	17.4	18.6	16.9	15.9	14.6	13.5	13.1	14.3	16.1	16.3	17.5	17.3
Smokeless Tobacco <sup>b</sup>	—	—	—	—	—	—	—	—	—	—	—	21.8	18.4	25.7	26.2	—	—	29.6	25.5	33.1	26.5	27.3	26.2	17.9	20.7	15.1	18.9	20.4
Steroids	—	—	—	—	—	—	—	—	—	—	—	—	—	—	36.7	41.4	33.3	47.6	40.0	45.8	34.8	26.3	41.7	37.0	37.9	32.0	35.1	37.5

NOTE: '—' indicates data not available. '†' indicates some change in the question. See relevant footnote for that drug.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>In 1993, the question text was changed slightly in three forms to indicate that a "drink" meant "more than a few sips." The 1993 data are based on the changed forms only. In 1994 the remaining forms were changed to the new wording. Beginning in 1994, the data are based on all six questionnaire forms.

<sup>b</sup>Percentage of regular users (ever) who did not use at all in the last thirty days.

**TABLE 5-7b**  
**Trends in Noncontinuation Rates among Twelfth Graders**  
**Who Used Drug Ten or More Times in Lifetime**

Percentage who did not use in last twelve months

	Class of:																												
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	
Marijuana/Hashish	4.0	4.0	4.1	3.7	4.6	5.4	7.2	7.6	8.3	8.8	7.8	7.9	9.2	9.9	10.6	12.3	10.5	10.9	7.8	5.0	4.7	6.6	7.7	8.2	8.5	9.0	8.7	9.4	
Inhalants	—	48.9	42.6	34.6	23.8	25.2	23.8	27.2	23.1	23.4	25.8	15.3	21.1	21.5	25.9	24.0	23.7	28.6	21.8	26.4	21.6	24.8	25.2	28.0	27.8	23.0	30.8	25.7	
Amyl/Butyl Nitrites	—	—	—	—	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	
Hallucinogens	10.8	16.1	15.2	10.8	8.1	8.4	7.7	7.5	13.0	14.1	12.2	11.1	11.9	16.6	21.8	16.5	17.4	11.5	12.1	14.3	10.6	9.0	12.2	16.4	12.8	12.9	12.3	20.0	
LSD	15.2	17.3	18.0	12.2	7.4	6.4	7.1	7.5	15.3	12.1	12.6	12.2	11.5	16.0	21.2	16.0	18.5	11.4	11.9	15.3	11.5	10.5	16.8	20.3	14.3	15.7	14.6	28.6	
Hallucinogens	—	16.6	14.4	13.3	11.5	13.1	7.7	8.2	8.5	14.5	13.7	16.0	15.8	20.1	19.5	22.6	29.3	19.6	16.2	16.0	10.1	15.5	15.9	17.5	13.4	6.2	10.8	11.0	
Other Than LSD	—	—	—	—	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	
PCP	—	—	—	—	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	
MDMA (Ecstasy)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	†	†	†	†	†	2.5	8.3	
Cocaine	7.7	8.2	6.2	3.8	3.1	3.1	3.1	2.9	6.2	3.1	2.5	3.5	7.6	11.4	11.3	19.6	25.3	20.2	14.1	22.9	9.6	8.8	12.0	12.4	12.3	18.1	15.6	11.3	
Crack <sup>a</sup>	—	—	—	—	—	—	—	—	—	—	—	—	13.4	2.1	5.2	26.2	31.1	15.3	16.4	16.8	6.3	8.3	17.4	19.5	16.0	13.5	7.1	10.9	
Other Cocaine	—	—	—	—	—	—	—	—	—	—	—	—	10.2	6.1	16.2	18.5	24.3	23.2	14.7	24.1	15.5	13.9	14.6	17.1	13.1	22.5	14.9	11.7	
Heroin	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	
With a needle	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	†	†	†	†	†	†	†	†	
Without a needle	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	†	†	†	†	†	†	†	
Other Narcotics	9.6	11.6	9.7	9.9	8.7	10.8	10.1	13.5	16.4	15.4	12.2	13.8	15.6	19.3	15.2	15.9	16.1	16.8	16.7	16.8	12.6	11.5	10.1	12.4	12.2	10.8	9.7	8.3	
Amphetamines	8.0	9.8	7.6	7.4	6.1	4.1	4.4	8.4	10.7	12.7	17.5	17.6	17.5	16.0	17.4	18.1	17.2	19.8	13.5	13.8	11.9	10.2	10.8	15.0	12.7	11.2	7.7	10.0	
Methamphetamine	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	12.4	22.8	19.2	23.9
Crystal Meth. (Ice)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	†	†	†	†	†	†	†	†	†	†	†	†	11.2 <sup>b</sup>	
Sedatives (Barbi-																													
turates)	13.4	16.5	12.9	13.5	11.2	11.7	8.9	12.6	17.7	22.8	20.6	19.7	20.7	23.4	18.0	19.8	19.7	23.4	11.0	14.9	10.9	8.3	11.1	12.5	10.7	7.0	5.6	5.7	
Sedatives, Adj.	13.6	16.2	12.4	12.8	8.6	10.5	7.6	8.6	16.4	20.8	23.6	19.7	23.1	25.2	17.3	—	—	—	—	—	—	—	—	—	—	—	—	—	
Methaqualone	13.5	15.9	11.9	13.1	6.1	6.0	4.9	8.0	16.3	23.3	26.7	24.9	32.2	29.8	18.6	—	—	—	—	—	—	—	—	—	—	—	—	—	
Tranquilizers	12.0	13.0	11.1	14.4	14.1	14.3	16.3	16.0	14.8	18.8	19.2	15.0	17.1	15.8	11.7	19.3	13.1	21.0	6.7	13.8	6.2	6.9	13.9	13.6	9.9	5.3	8.1	5.8	
Rohypnol	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	†	†	†	†	†	†	†	
Alcohol <sup>c</sup>	0.6	0.8	0.6	0.9	0.7	0.8	1.0	0.9	0.9	1.1	1.2	1.0	1.1	1.2	1.5	1.9	1.9	2.3	‡ 2.5	2.1	2.0	1.6	1.9	1.9	1.7	1.7	1.3	1.9	
Been Drunk	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.3	4.1	4.6	3.3	2.8	2.1	3.6	2.8	1.8	2.6	2.3	2.0
Steroids	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	

NOTES: '—' indicates data not available.

† indicates that the cell entry was omitted because it was based on fewer than 50 seniors who used ten or more times. All other cells are based on more than 50 cases.

‡ indicates some change in the question. See relevant footnote for that drug.

SOURCE: The Monitoring the Future Study, the University of Michigan.

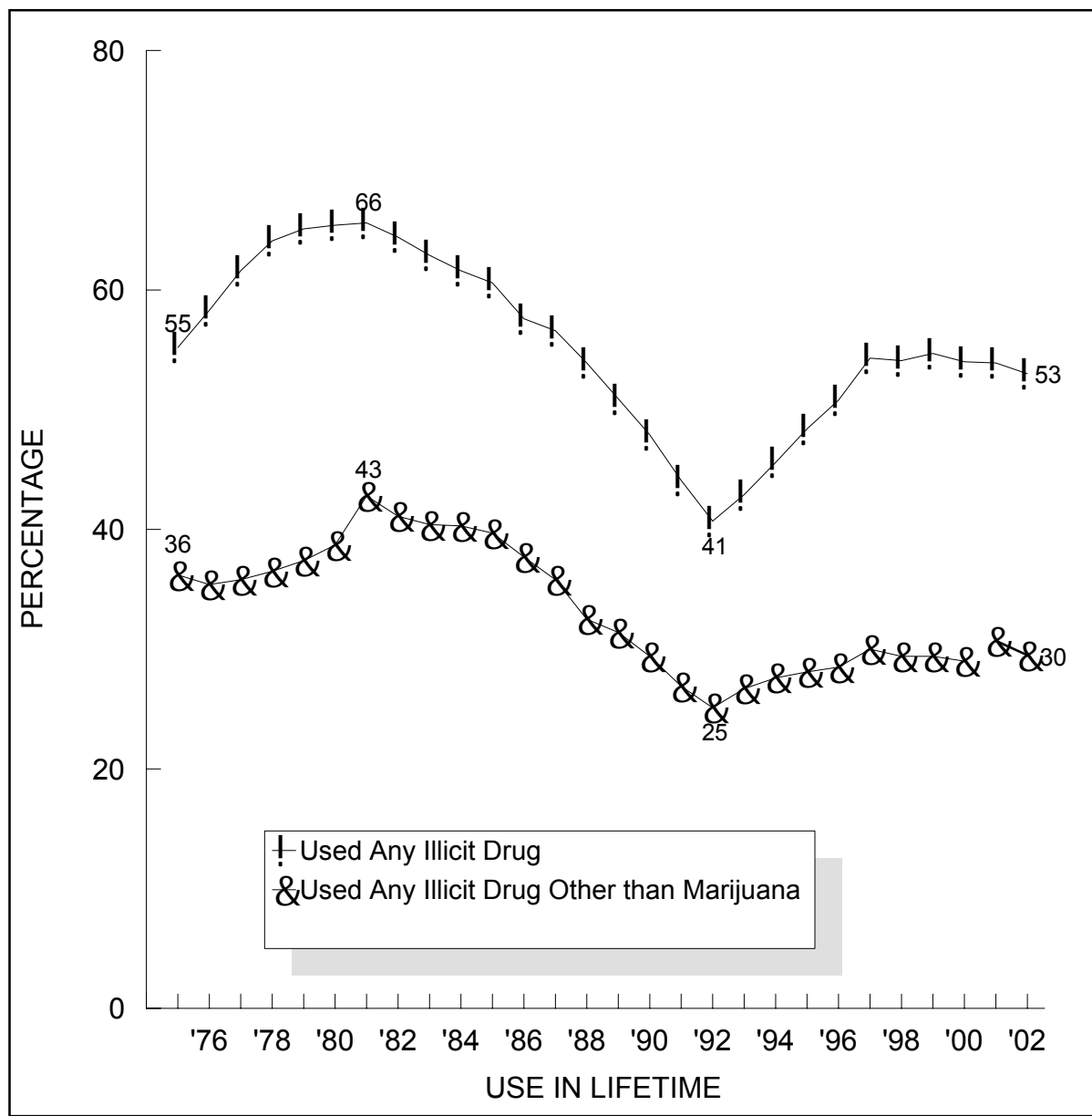
<sup>a</sup>Based on 85 cases in 1987, 54 cases in 1988, and 56 cases in 1989. Crack was included in all six questionnaire forms beginning in 1990.

<sup>b</sup>Based on 55 cases in 2002.

<sup>c</sup>In 1993, the question text was changed slightly in three forms to indicate that a "drink" meant "more than a few sips." The 1993 data are based on the changed forms only. In 1994 the remaining forms were changed to the new wording. Beginning in 1994, the data are based on all six questionnaire forms.

FIGURE 5-1

**Trends in Lifetime Prevalence of an Illicit Drug Use Index for Twelfth Graders**



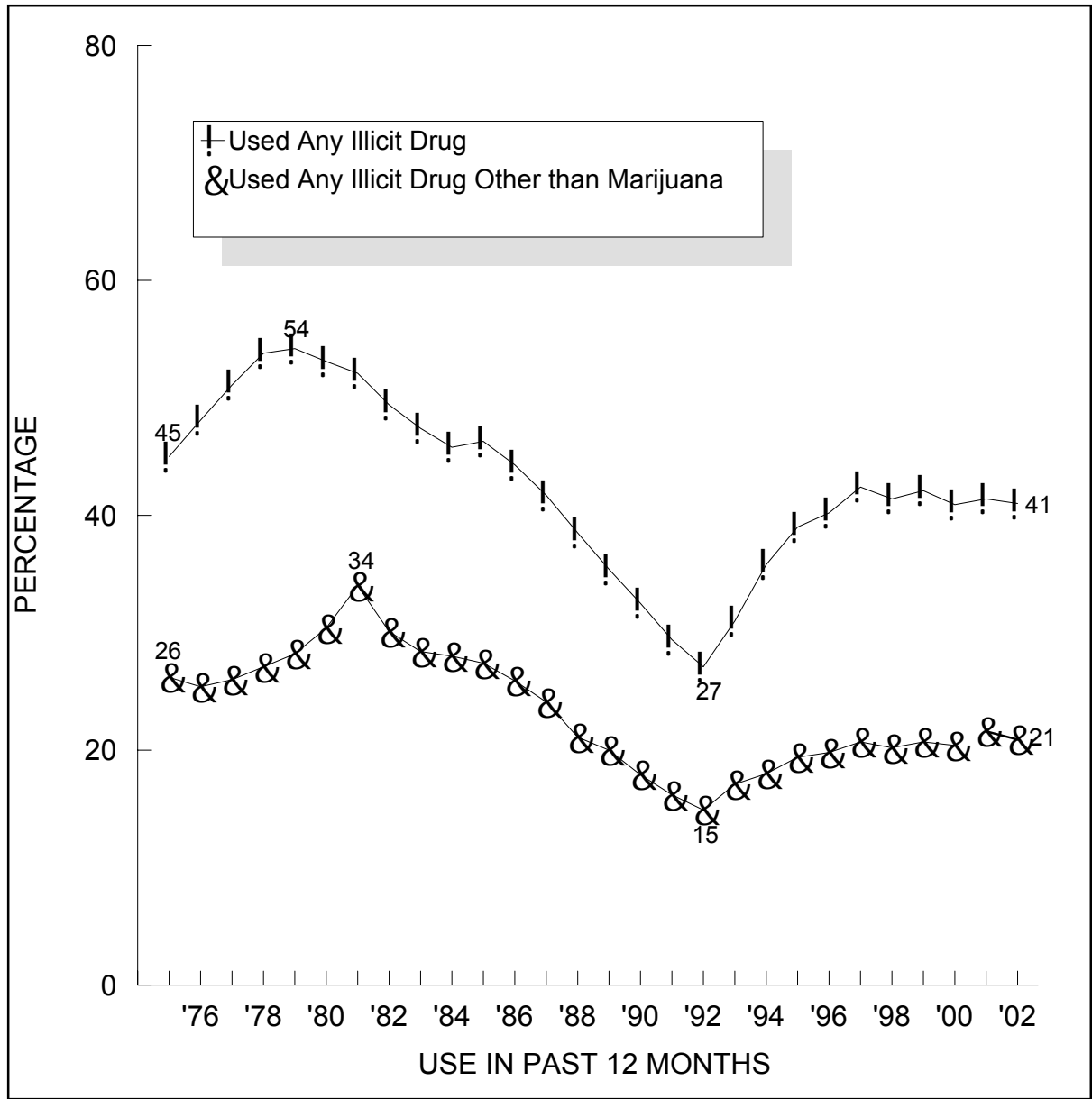
NOTES: Use of "any illicit drugs" includes any use of marijuana, LSD, other hallucinogens, crack, other cocaine, or heroin, or any use which is not under a doctor's orders of other opiates, stimulants, barbiturates, methaqualone (excluded since 1990), or tranquilizers.

Beginning in 1982 the question about stimulant use (i.e., amphetamines) was revised to get respondents to exclude the inappropriate reporting of nonprescription stimulants. The prevalence rate dropped slightly as a result of this methodological change.

Beginning in 2001, revised sets of questions on other hallucinogen and tranquilizer use were introduced. Data for "any illicit other than marijuana" are affected by these changes. From 2001 on, data points are based on the revised questions.

FIGURE 5-2

**Trends in Annual Prevalence of an Illicit Drug Use Index for Twelfth Graders**



NOTES: Use of "any illicit drugs" includes any use of marijuana, LSD, other hallucinogens, crack or other cocaine, or heroin, or any use which is not under a doctor's orders of other opiates, stimulants, barbiturates, methaqualone (excluded since 1990), or tranquilizers.

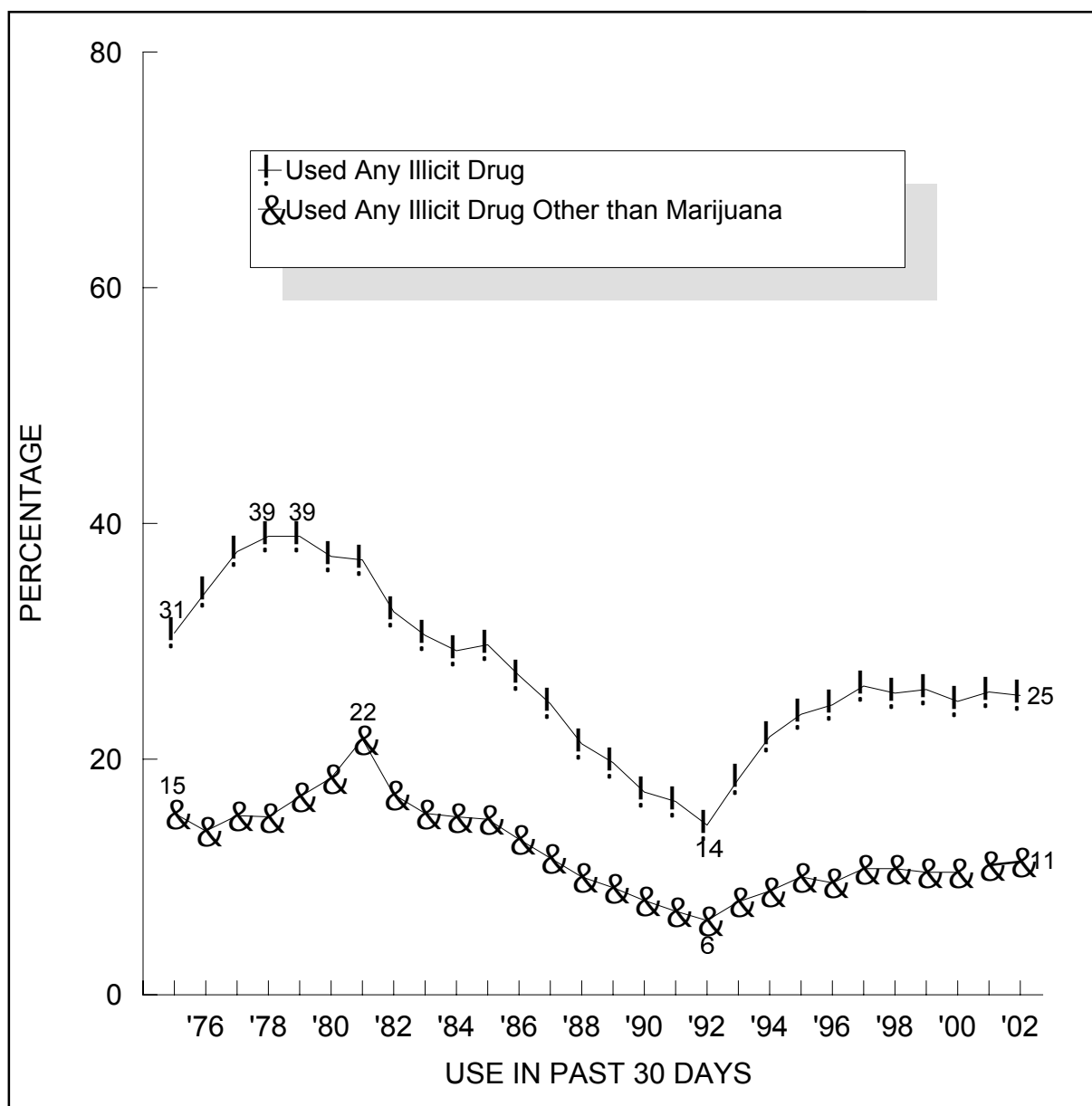
Beginning in 1982 the question about stimulant use (i.e., amphetamines) was revised to get respondents to exclude the inappropriate reporting of nonprescription stimulants. The prevalence rate dropped slightly as a result of this methodological change.

Beginning in 2001, revised sets of questions on other hallucinogen and tranquilizer use were introduced. Data for "any illicit other than marijuana" are affected by these changes. From 2001 on, data points are based on the revised questions.



FIGURE 5-3

**Trends in 30-Day Prevalence of an Illicit Drug Use Index for Twelfth Graders**



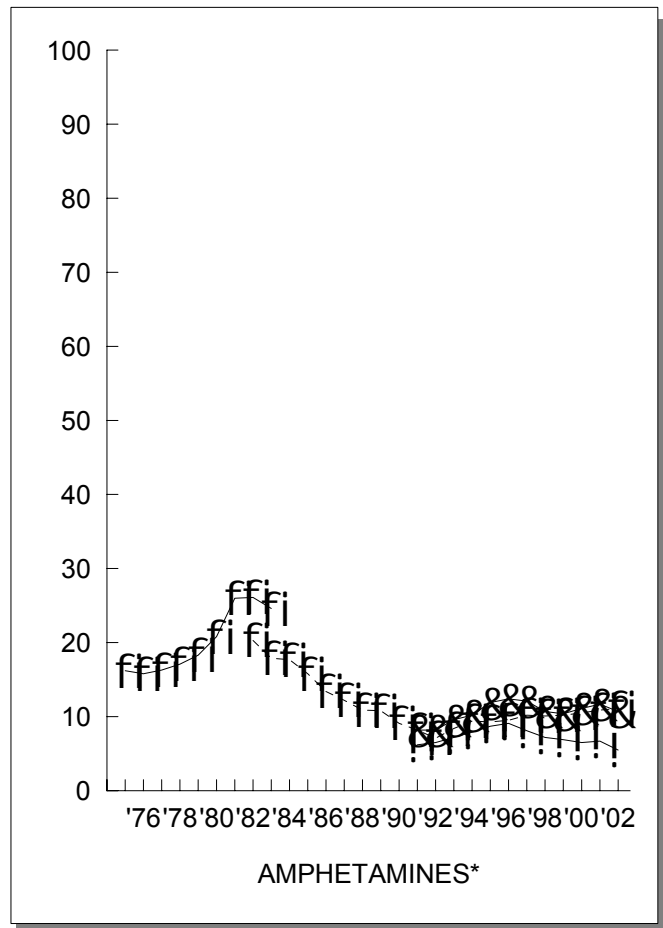
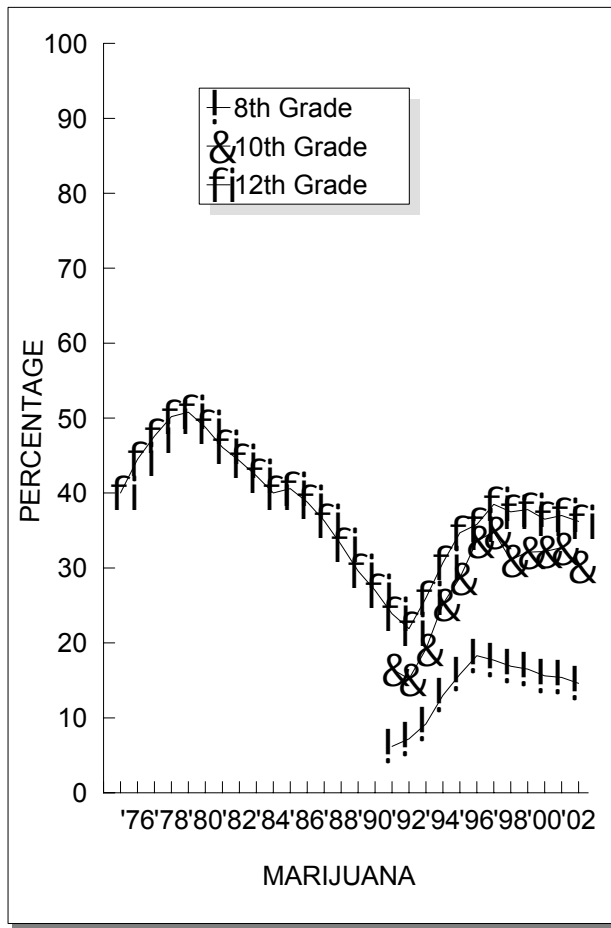
NOTES: Use of "any illicit drugs" includes any use of marijuana, LSD, other hallucinogens, crack, other cocaine, or heroin, or any use which is not under a doctor's orders of other opiates, stimulants, barbiturates, methaqualone (excluded since 1990), or tranquilizers.

Beginning in 1982 the question about stimulant use (i.e., amphetamines) was revised to get respondents to exclude the inappropriate reporting of nonprescription stimulants. The prevalence rate dropped slightly as a result of this methodological change.

Beginning in 2001, revised sets of questions on other hallucinogen and tranquilizer use were introduced. Data for "any illicit other than marijuana" are affected by these changes. From 2001 on, data points are based on the revised questions.

FIGURE 5-4a

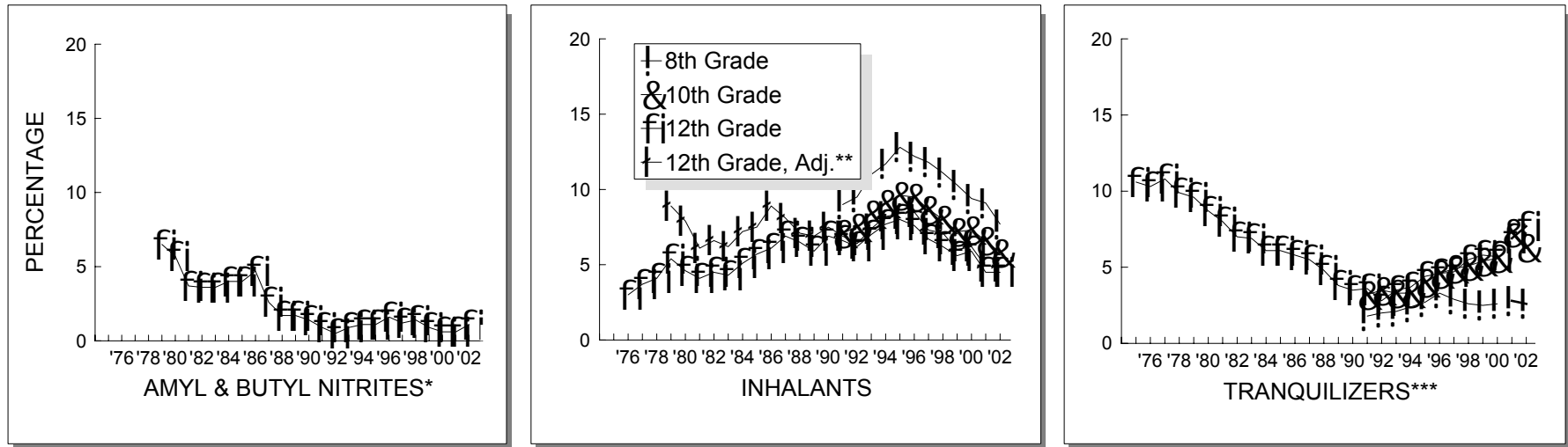
**Trends in Annual Prevalence of Various Drugs  
for Eighth, Tenth, and Twelfth Graders**



\*The dotted lines connect percentages which result if nonprescription stimulants are excluded.

FIGURE 5-4b

**Trends in Annual Prevalence of Various Drugs  
for Eighth, Tenth, and Twelfth Graders**



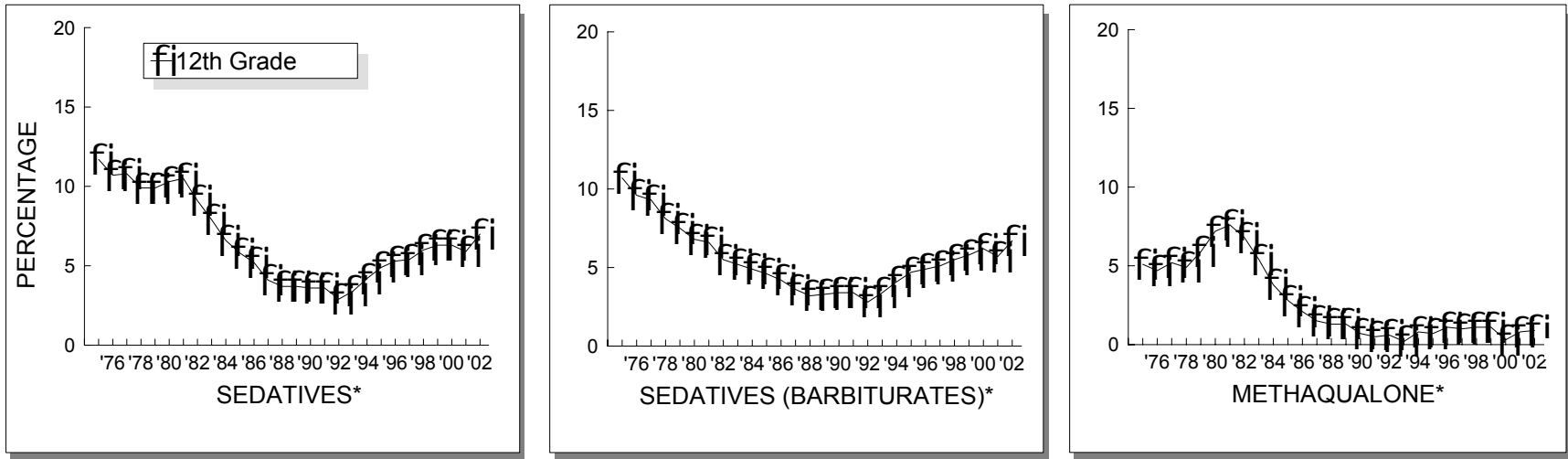
\*8th and 10th graders are not asked about nitrite use.

\*\*Adjusted for underreporting of amyl and butyl nitrites.

\*\*\*Beginning in 2001, a revised set of questions on tranquilizer use was introduced. From 2001 on, data points are based on the revised question.

FIGURE 5-4c

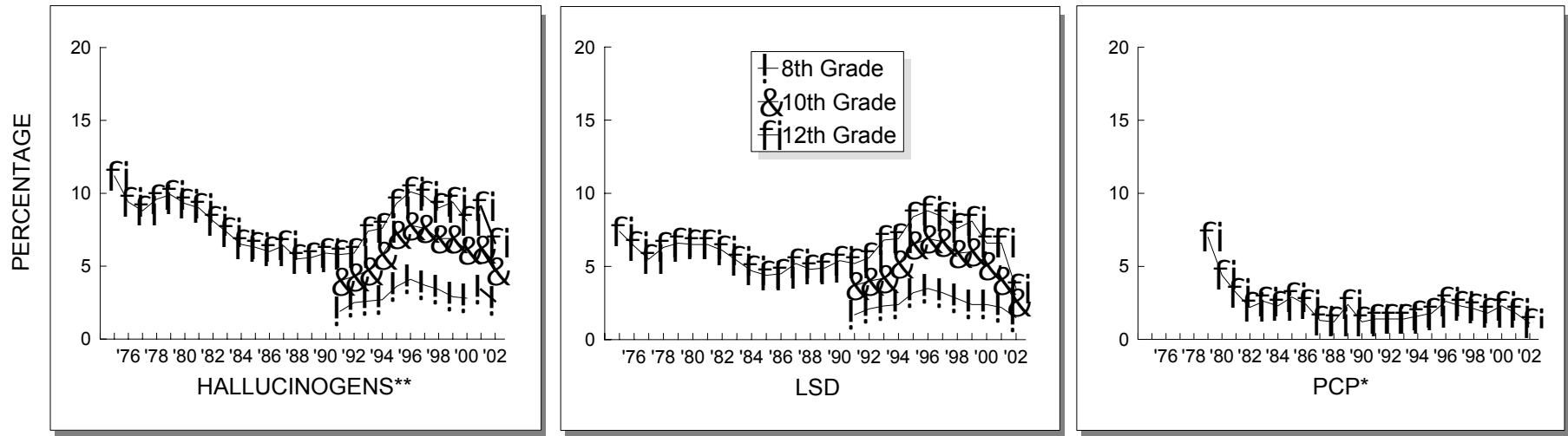
**Trends in Annual Prevalence of Various Drugs  
for Eighth, Tenth, and Twelfth Graders**



\*Eighth and tenth graders are not asked about sedative, barbiturate, and methaqualone use.

FIGURE 5-4d

**Trends in Annual Prevalence of Various Drugs  
for Eighth, Tenth, and Twelfth Graders**



\*Eighth and tenth graders are not asked about PCP use.

\*\*In 2001, a revised set of questions on other hallucinogen use was introduced. Data for hallucinogens were affected by these changes. From 2001 on, data points are based on the revised questions.

FIGURE 5-4e

**Trends in Annual Prevalence of Various Drugs  
for Eighth, Tenth, and Twelfth Graders**

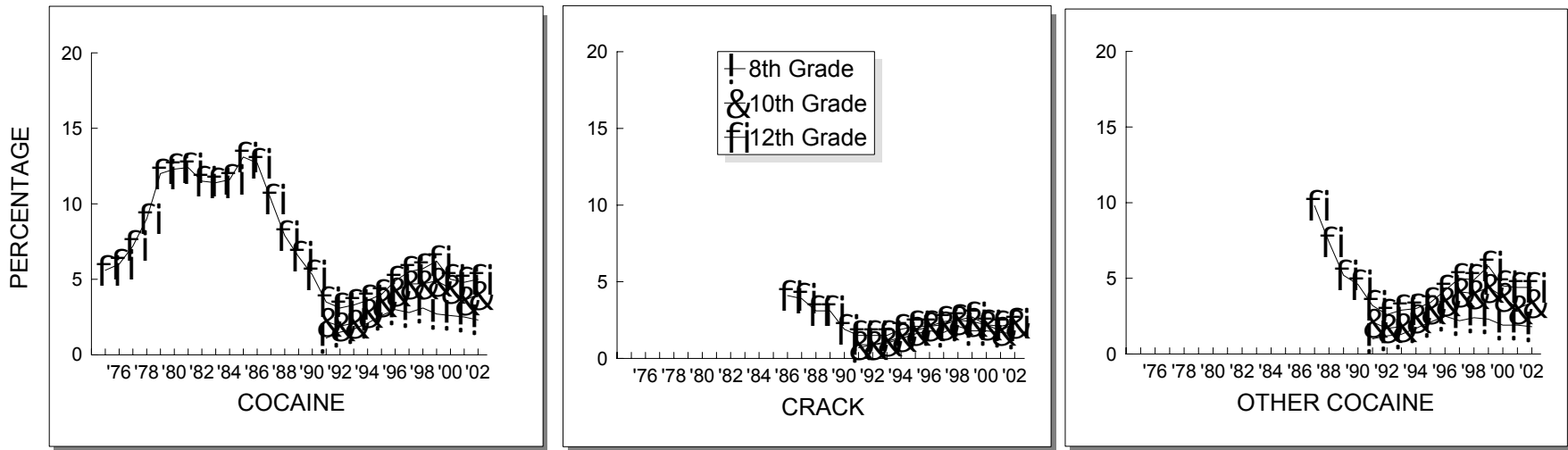


FIGURE 5-4f

**Trends in Annual Prevalence of Various Drugs  
for Eighth, Tenth, and Twelfth Graders**

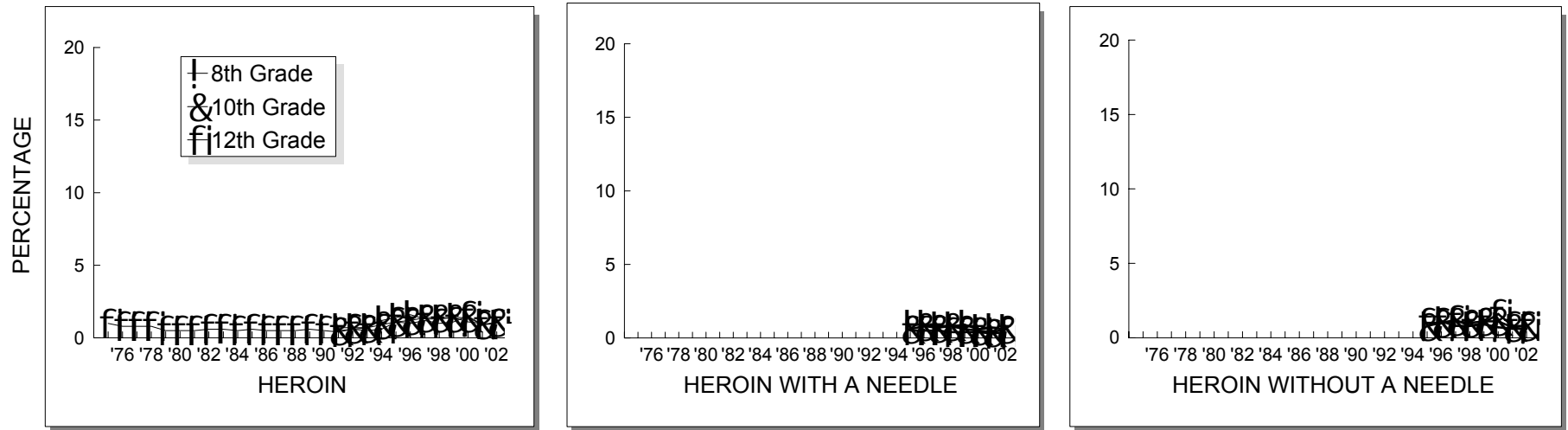
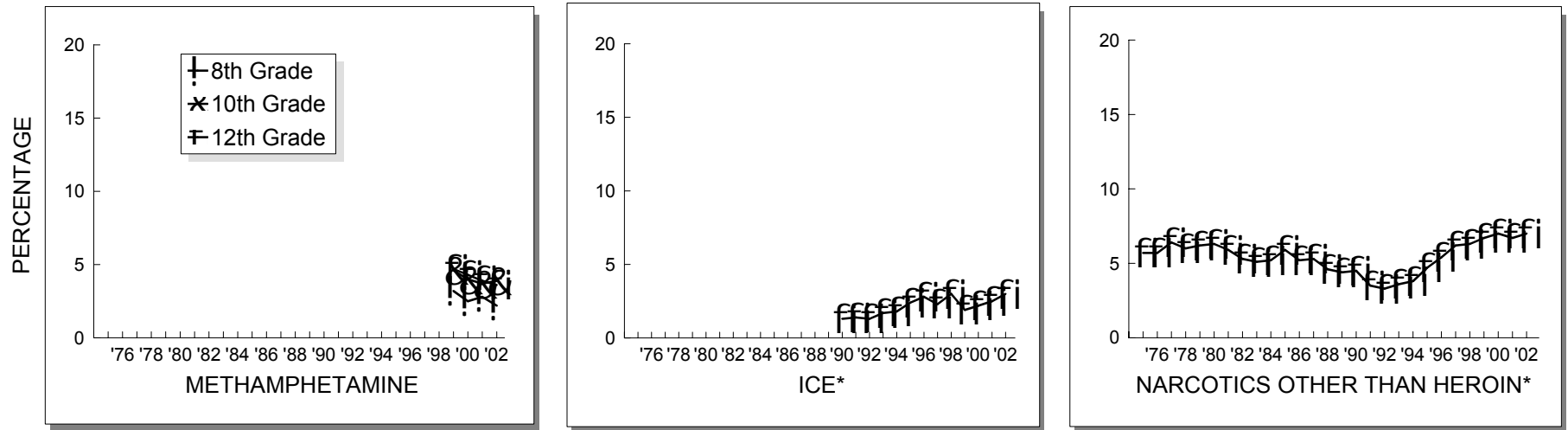


FIGURE 5-4g

**Trends in Annual Prevalence of Various Drugs  
for Eighth, Tenth, and Twelfth Graders**



\*Eighth and tenth graders are not asked about narcotics other than heroin or ice use.



FIGURE 5-4h

**Trends in Annual Prevalence of Various Drugs  
for Eighth, Tenth, and Twelfth Graders**

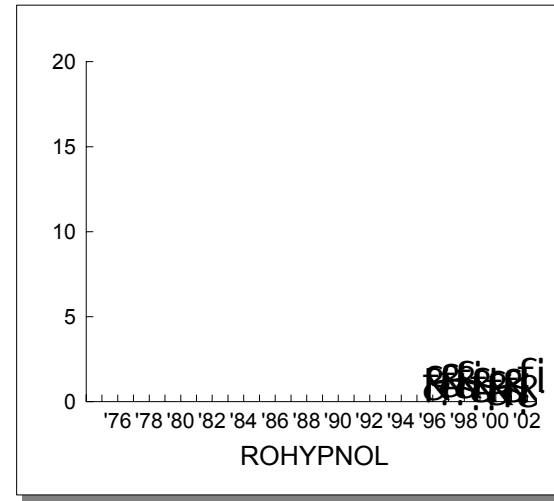
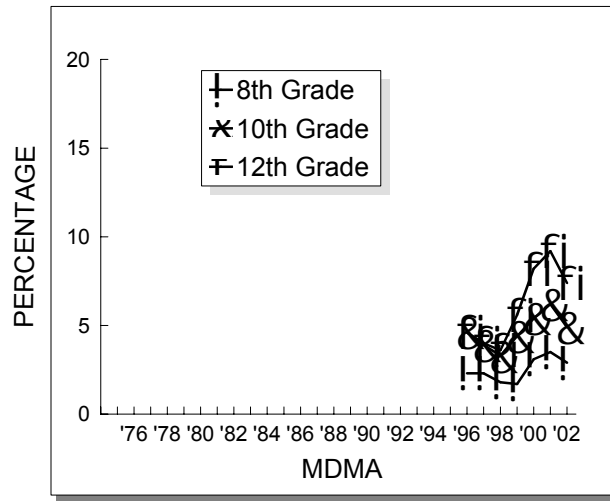
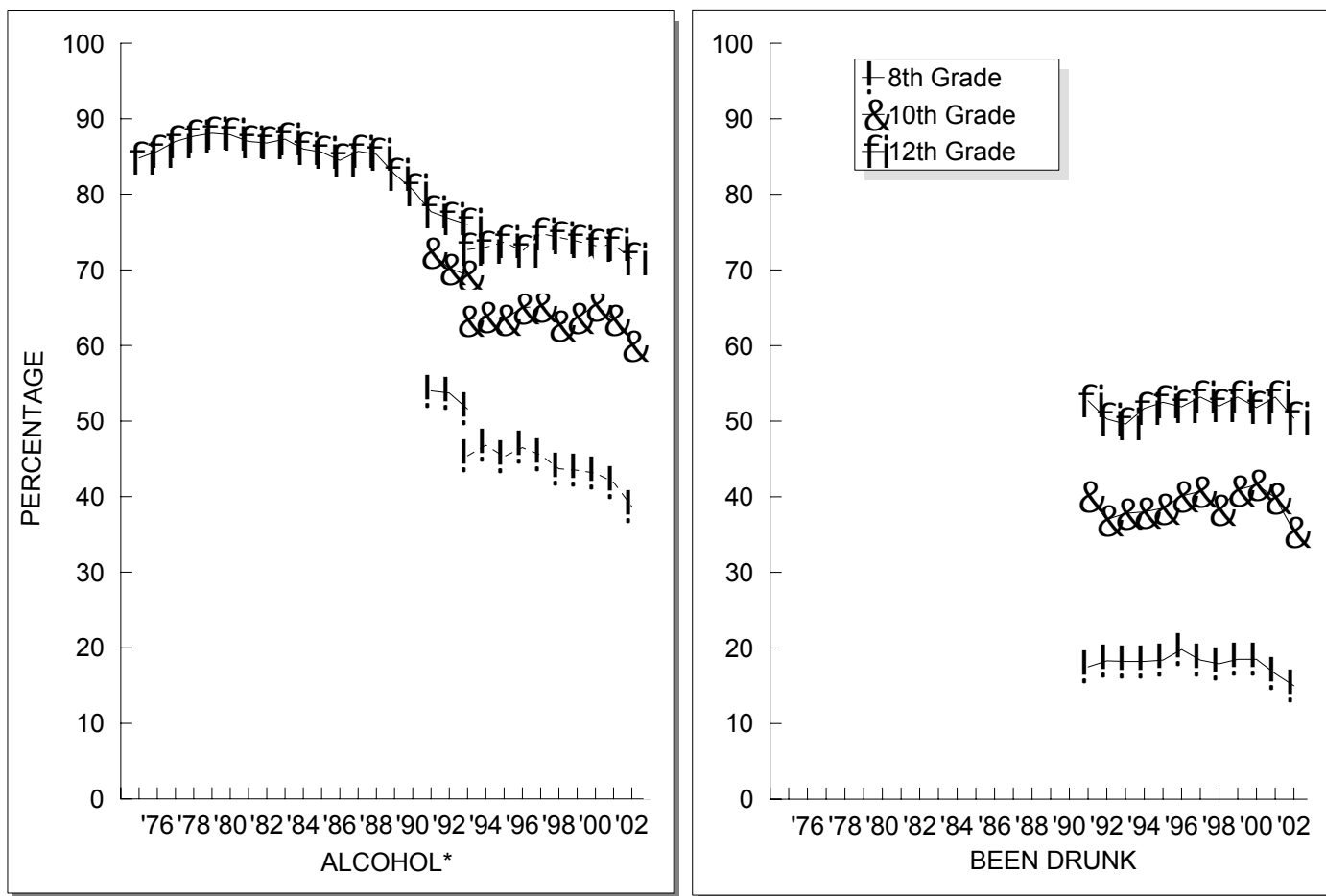


FIGURE 5-4i

**Trends in Annual Prevalence of Various Drugs  
for Eighth, Tenth, and Twelfth Graders**



\*Beginning in 1993 a revised set of questions on alcohol use was introduced, in which respondents were told that an occasion of use meant "more than just a few sips." The dotted lines connect percentages which are based on data from the revised questions. See text for details.

FIGURE 5-4j

**Trends in Two-Week Prevalence of Heavy Drinking  
for Eighth, Tenth, and Twelfth Graders**

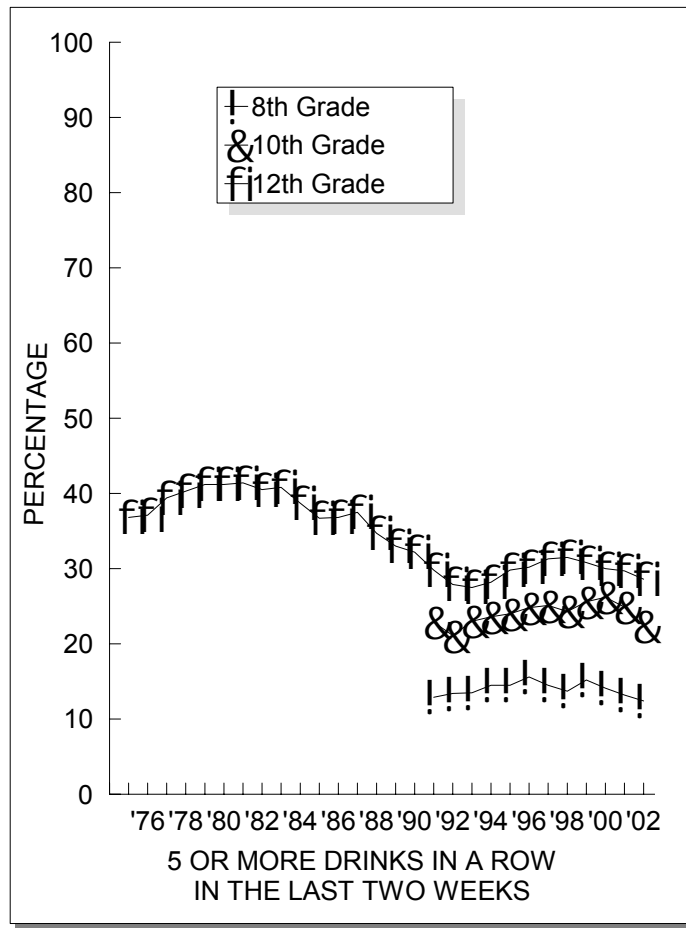


FIGURE 5-4k

**Trends in 30-Day Prevalence and 30-Day Prevalence of Daily Use of Cigarettes for Eighth, Tenth, and Twelfth Graders**

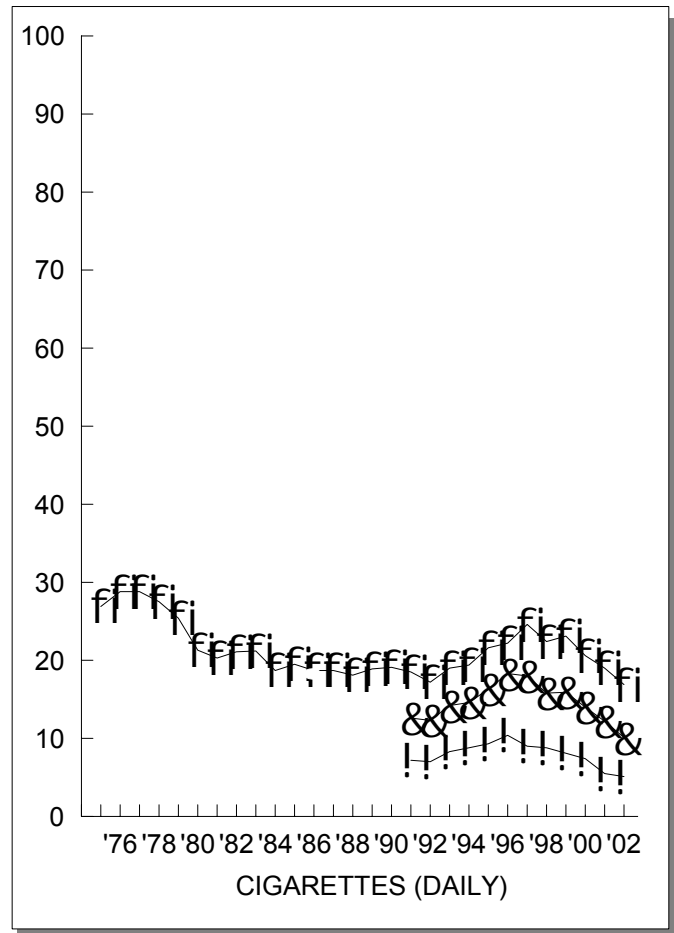
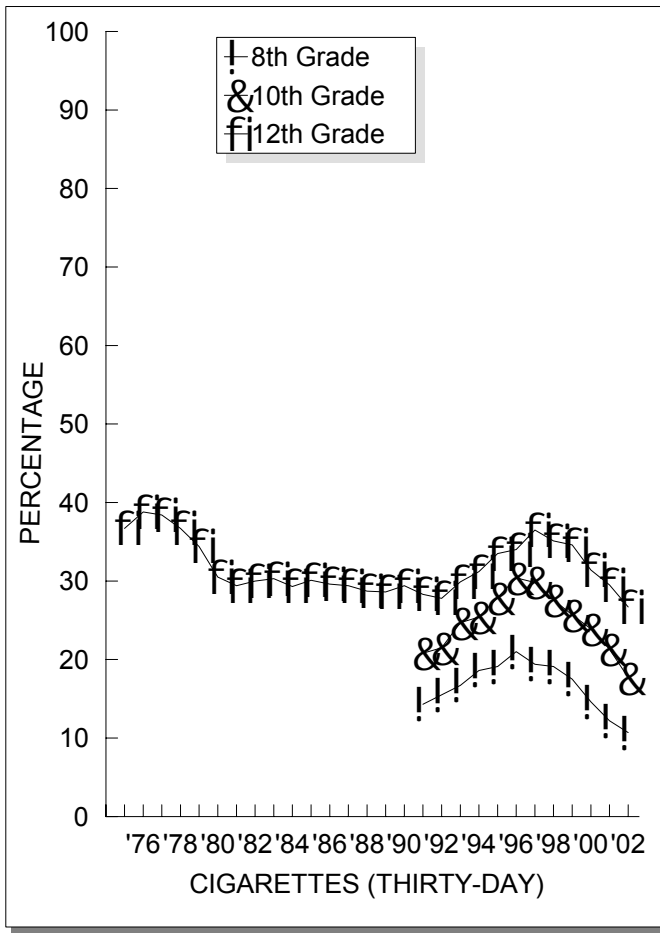
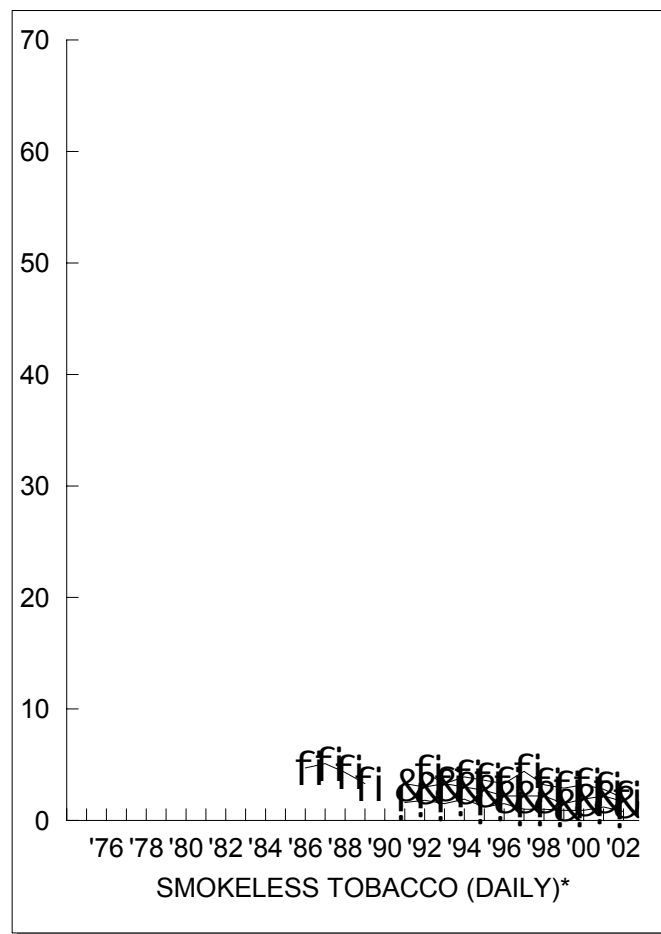
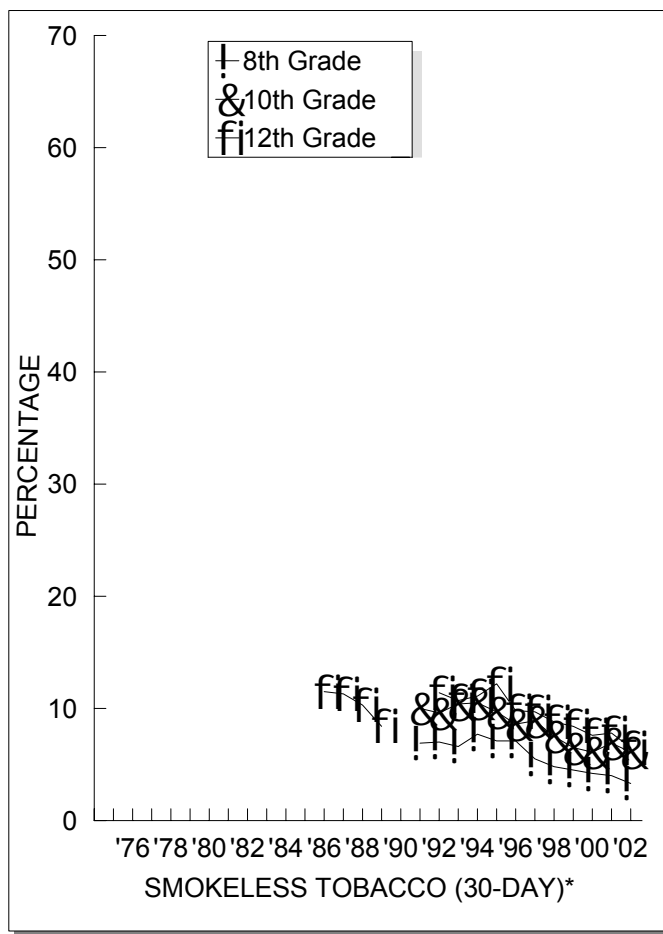


FIGURE 5-41

**Trends in 30-Day Prevalence and 30-Day Prevalence of Daily Use of Smokeless Tobacco for Eighth, Tenth, and Twelfth Graders**



\*Twelfth graders: Smokeless tobacco data not available in 1990 or 1991.

FIGURE 5-4m

**Trends in 30-Day Prevalence of Daily Use of Marijuana for Eighth, Tenth, and Twelfth Graders**

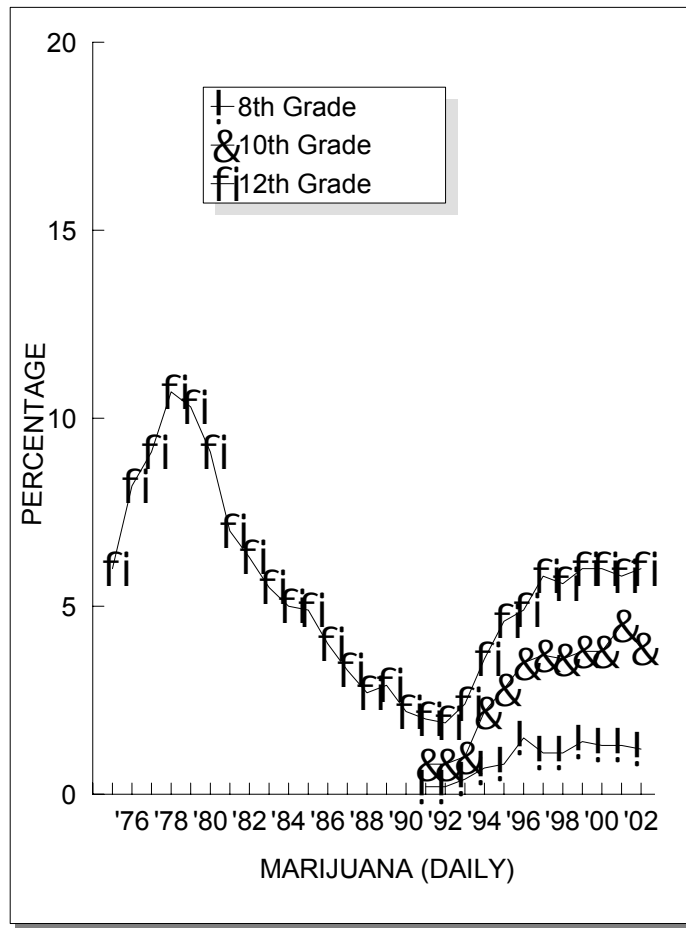


FIGURE 5-4n

**Trends in Annual Prevalence of Steroids  
for Eighth, Tenth, and Twelfth Graders**

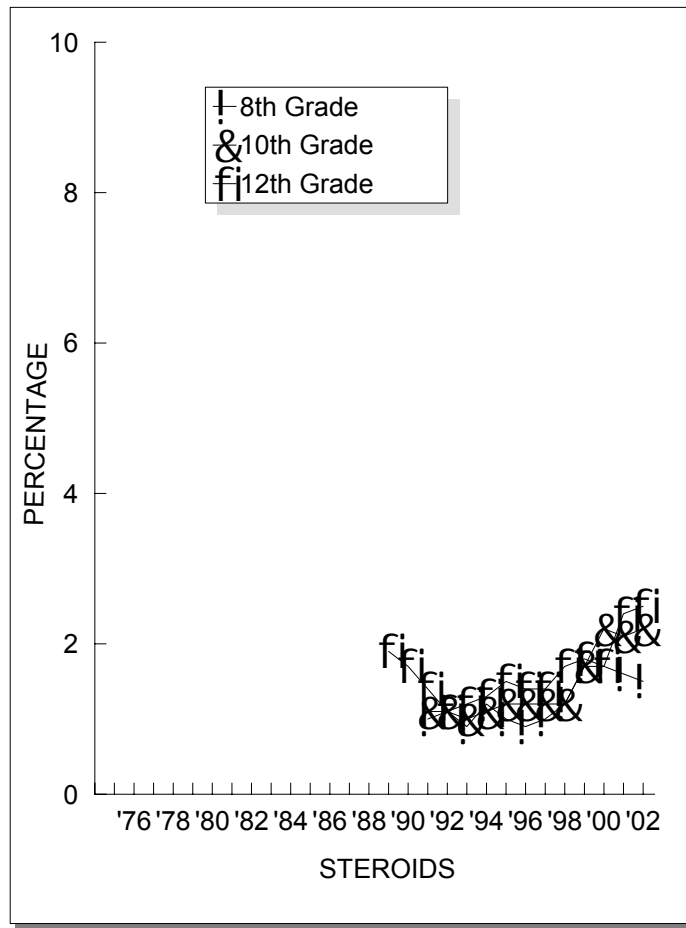
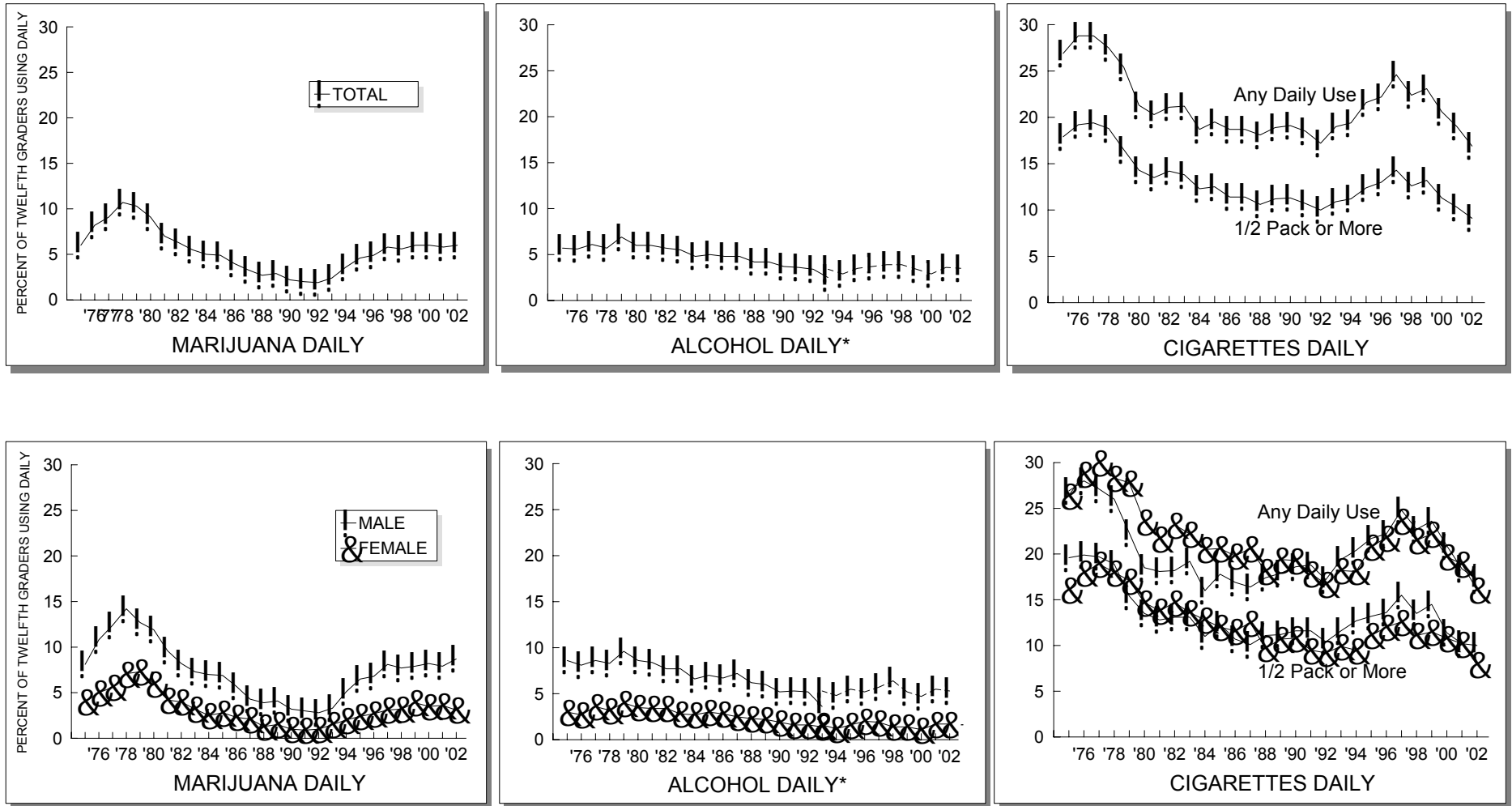


FIGURE 5-5  
**Trends in 30-Day Prevalence of Daily Use of  
 Marijuana, Alcohol, and Cigarettes for Twelfth Graders  
 by Total and by Gender**



NOTE: Daily use for alcohol and marijuana is defined as use on 20 or more occasions in the past 30 days. Daily use of cigarettes is defined as smoking one or more cigarettes per day in the past 30 days.

\*The dotted lines connect percentages which have been adjusted. See text for details.



FIGURE 5-6a

**Trends in Two-Week Prevalence of Heavy Drinking Among Twelfth Graders  
by Gender**

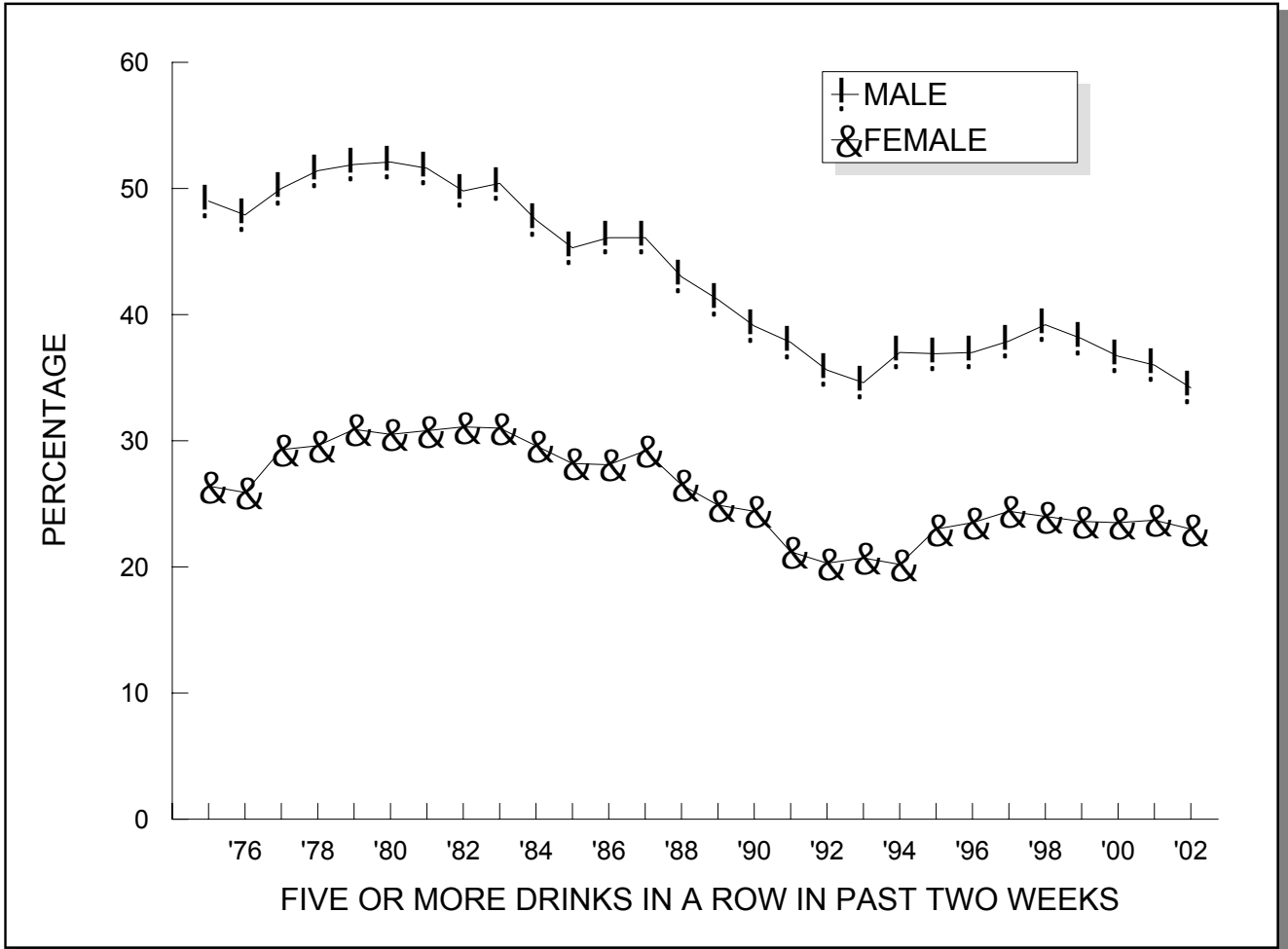
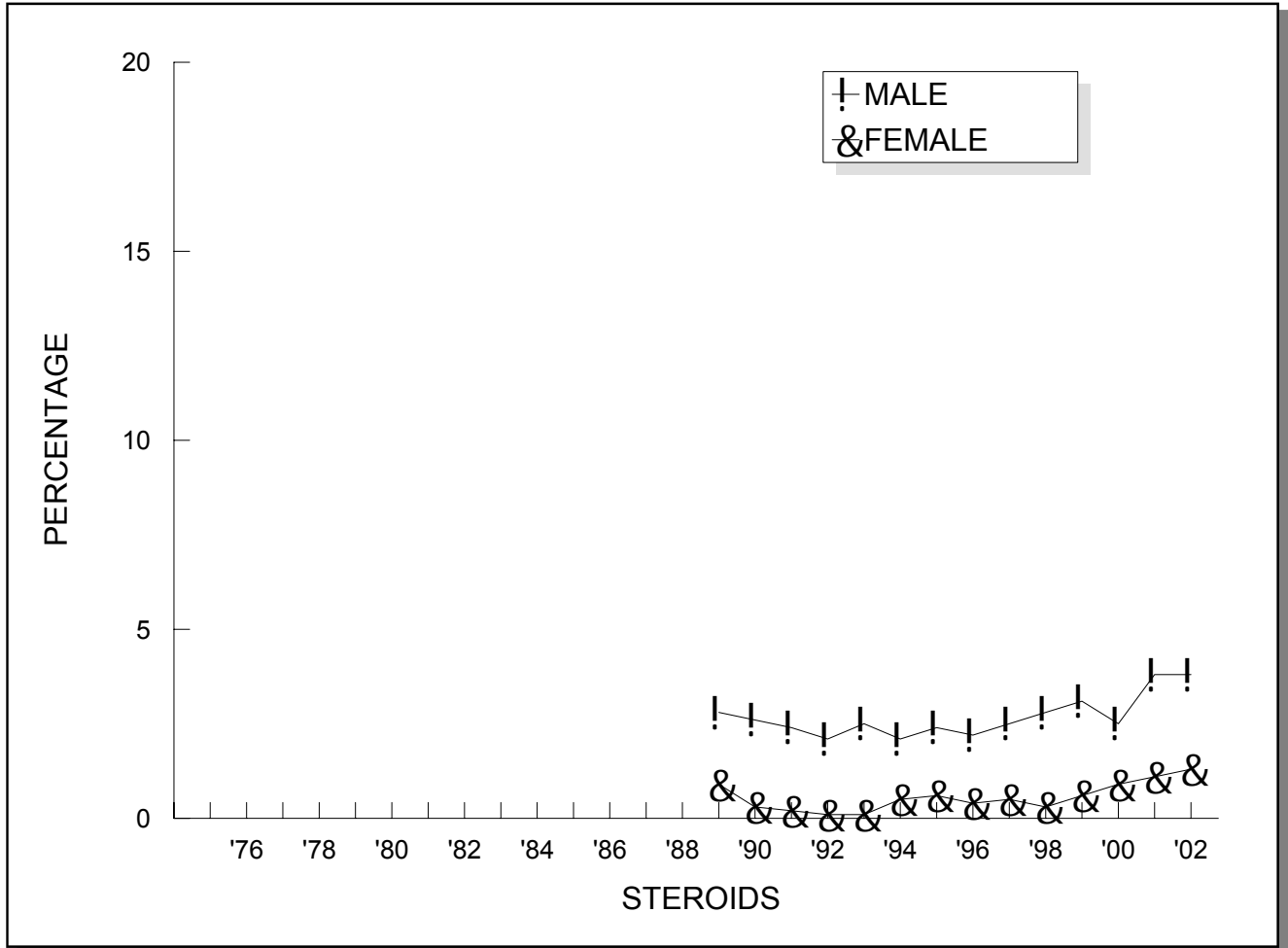
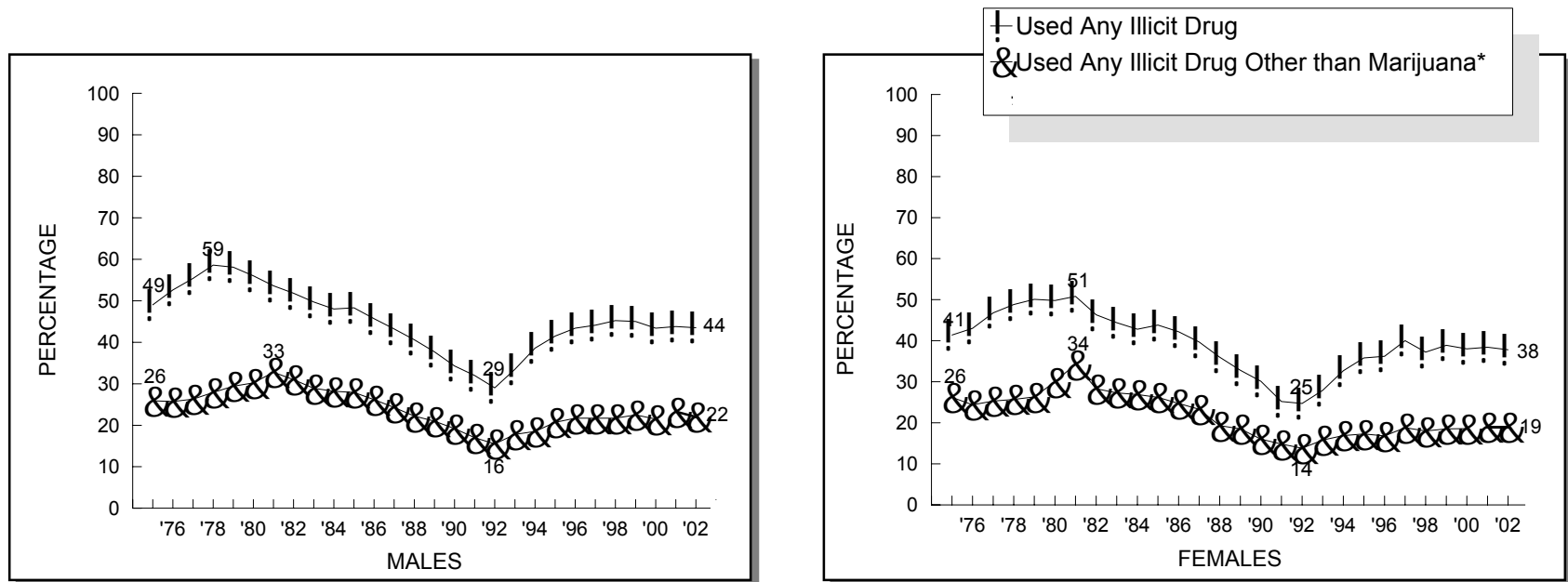


FIGURE 5-6b

**Trends in Annual Prevalence of Steroid Use Among Twelfth Graders  
by Gender**

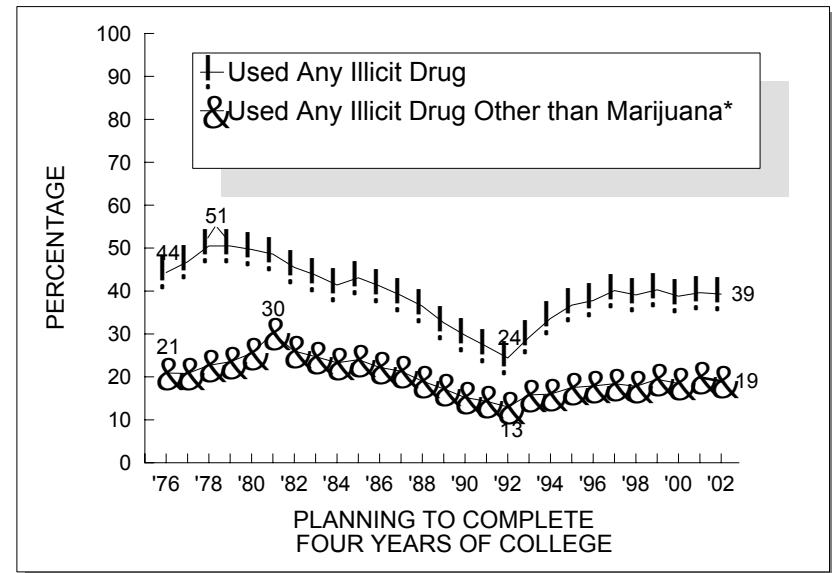
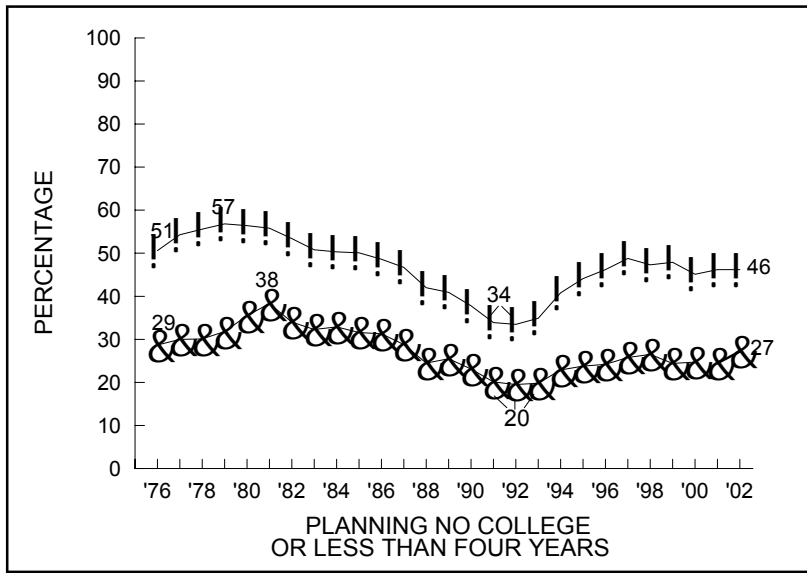


**FIGURE 5-7**  
**Trends in Annual Prevalence of an Illicit Drug Use Index for Twelfth Graders**  
**by Gender**



\*Beginning in 2001, revised sets of questions on other hallucinogen and tranquilizer use were introduced. Data for "any illicit other than marijuana" are affected by these changes. From 2001 on, data points are based on the revised questions.

**FIGURE 5-8**  
**Trends in Annual Prevalence of an Illicit Drug Use Index for Twelfth Graders**  
**by College Plans**



\*Beginning in 2001, revised sets of questions on other hallucinogen and tranquilizer use were introduced. Data for "any illicit other than marijuana" are affected by these changes. From 2001 on, data points are based on the revised questions.

**FIGURE 5-9**  
**Trends in 30-Day Prevalence of Cigarette Use for Eighth, Tenth, and Twelfth Graders**  
**by College Plans**

● Less Than 4 Years of College  
 ◆ Complete 4 Years of College

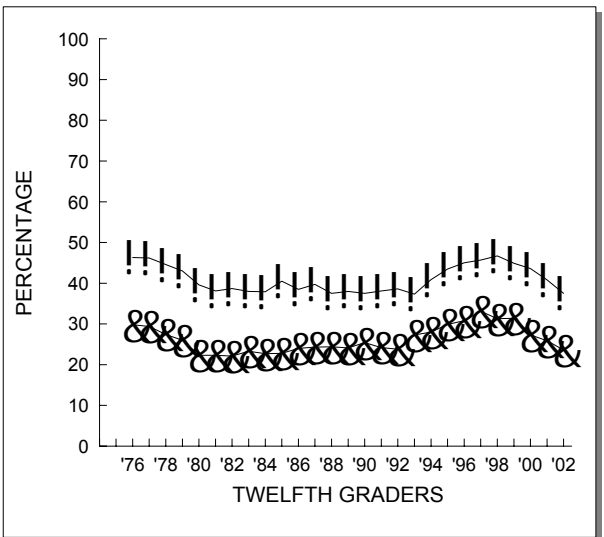
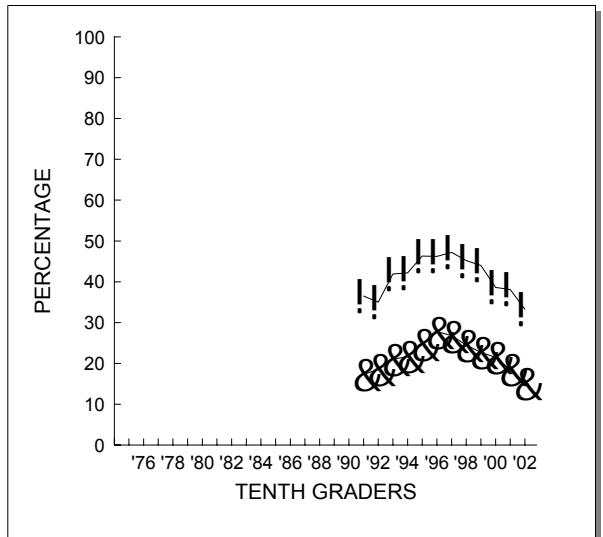
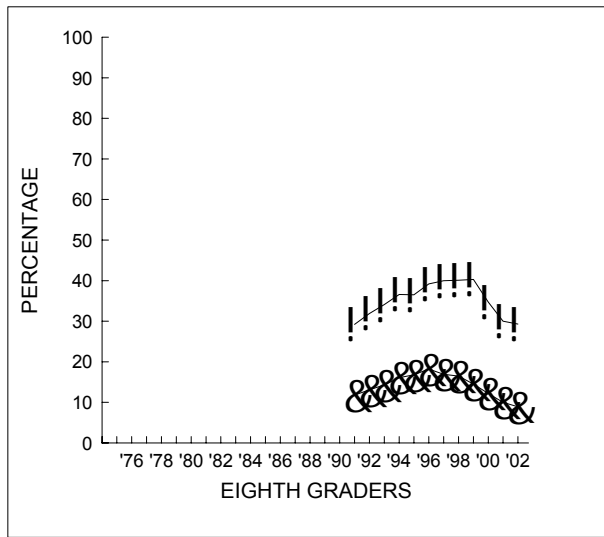
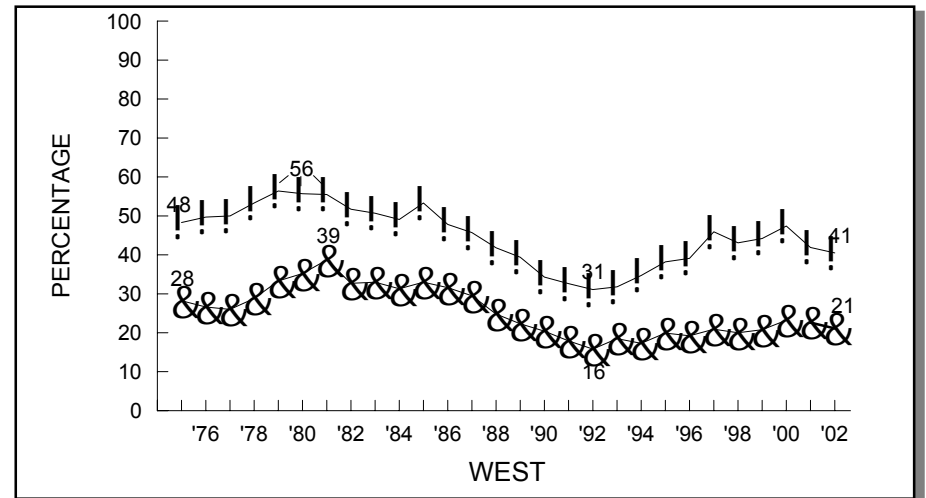
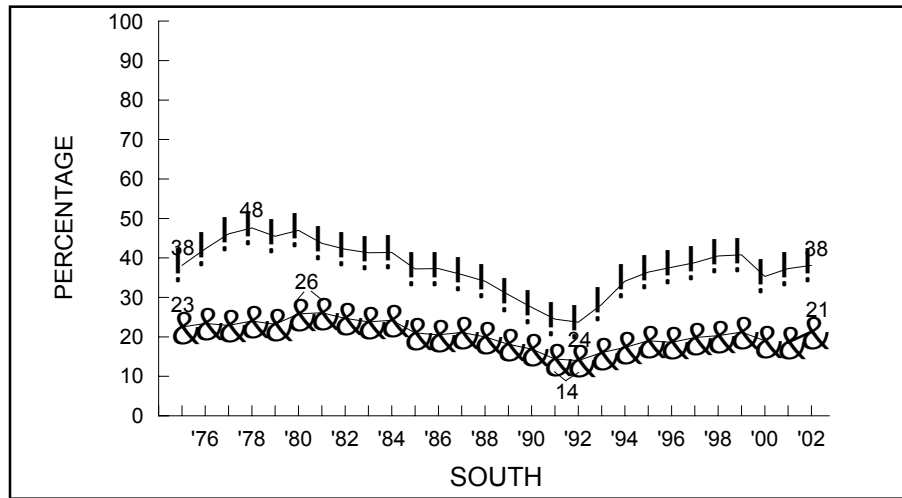
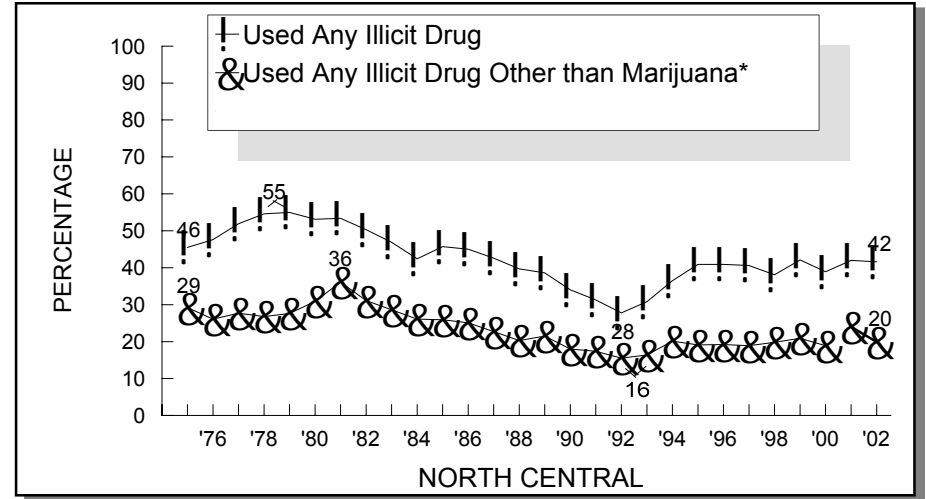
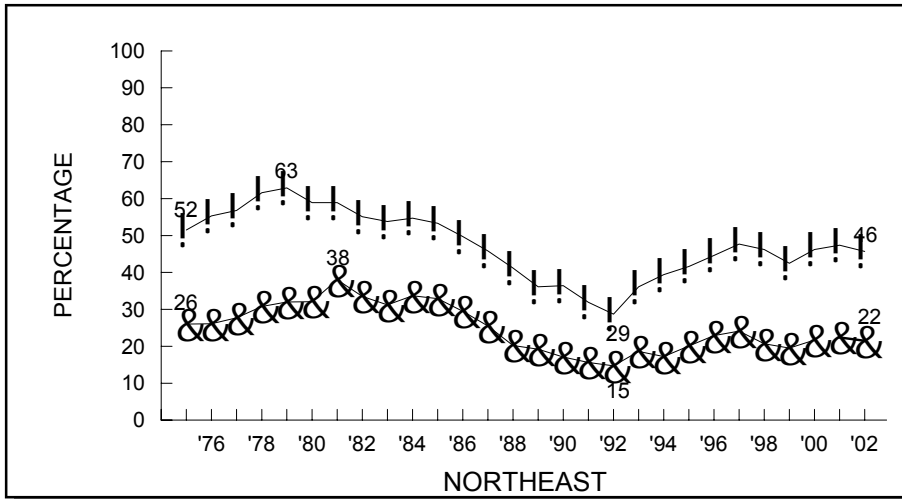


FIGURE 5-10a

**Trends in Annual Prevalence of an Illicit Drug Use Index for Twelfth Graders  
by Region of the Country**



\*Beginning in 2001, revised sets of questions on other hallucinogen and tranquilizer use were introduced. Data for "any illicit other than marijuana" are affected by these changes. From 2001 on, data points are based on the revised questions.

FIGURE 5-10b

**Trends in Lifetime Prevalence of Cocaine Use for Twelfth Graders  
by Region of the Country**

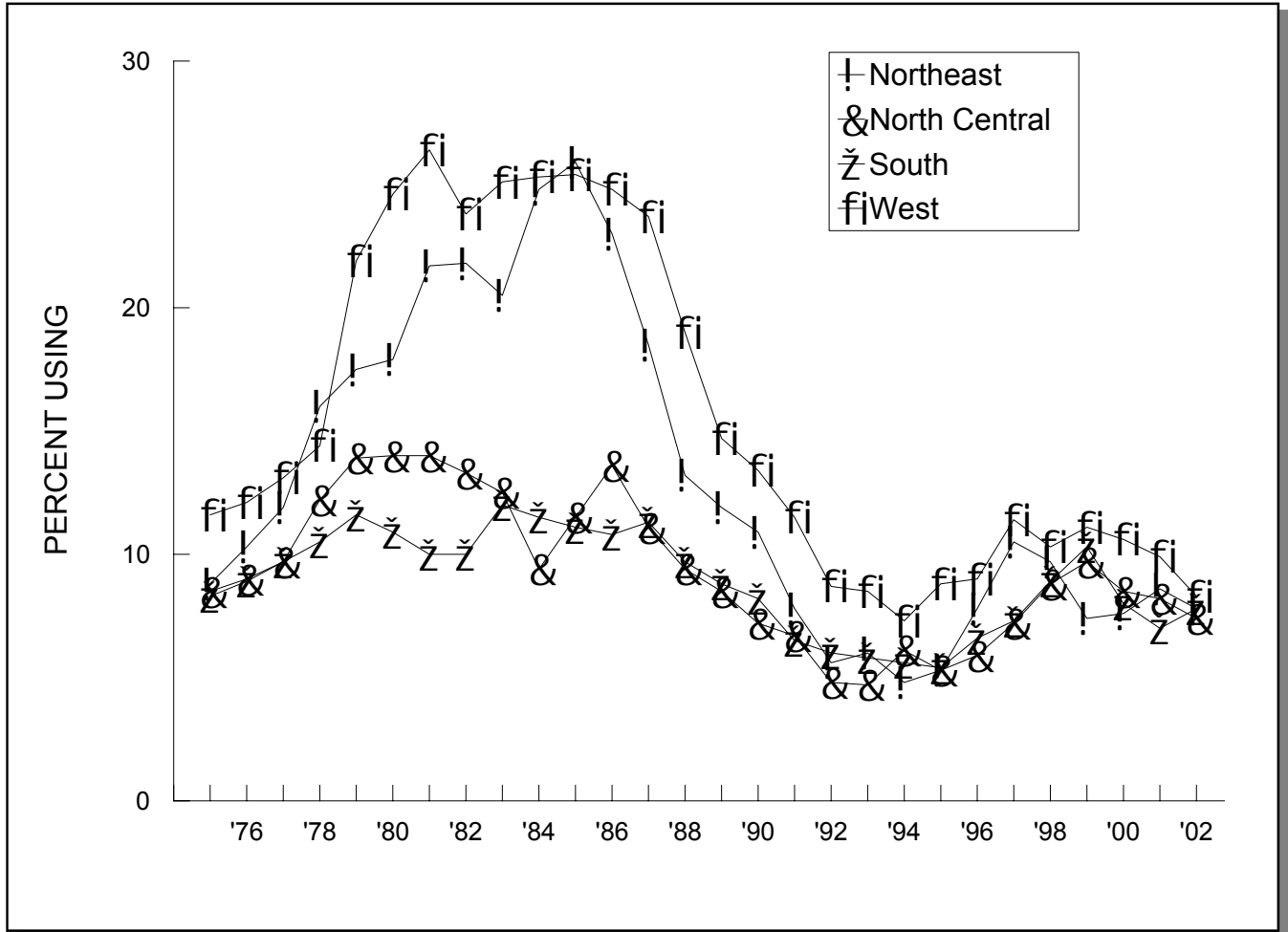


FIGURE 5-10c

**Trends in 30-Day Prevalence of Cigarette Use for Twelfth Graders  
by Region of the Country**

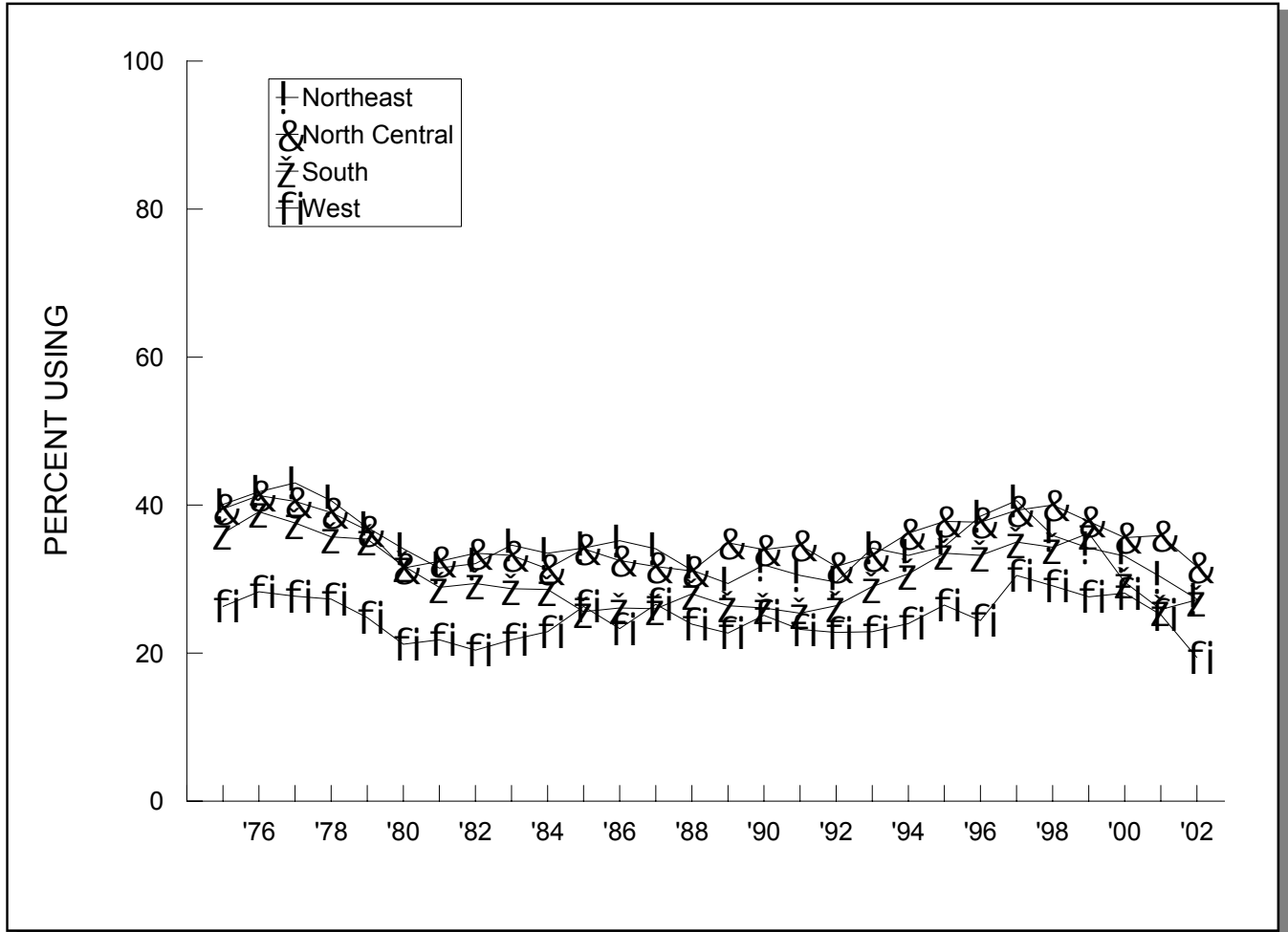
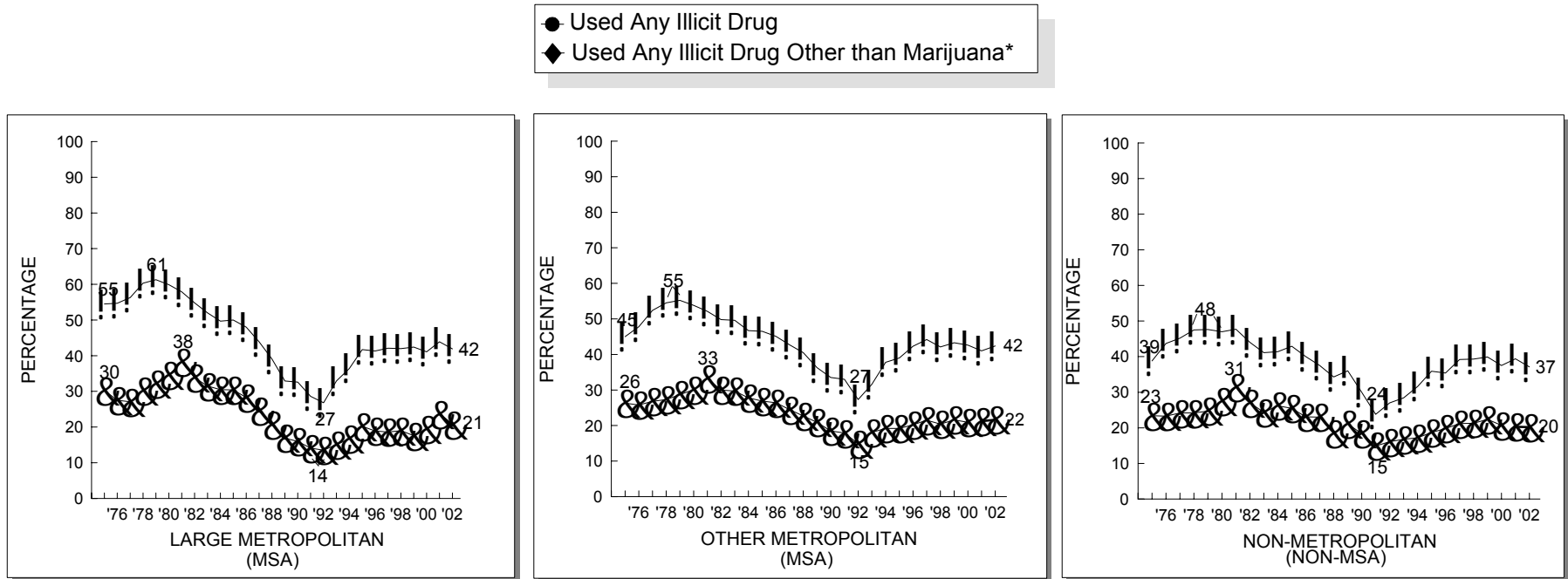




FIGURE 5-11a

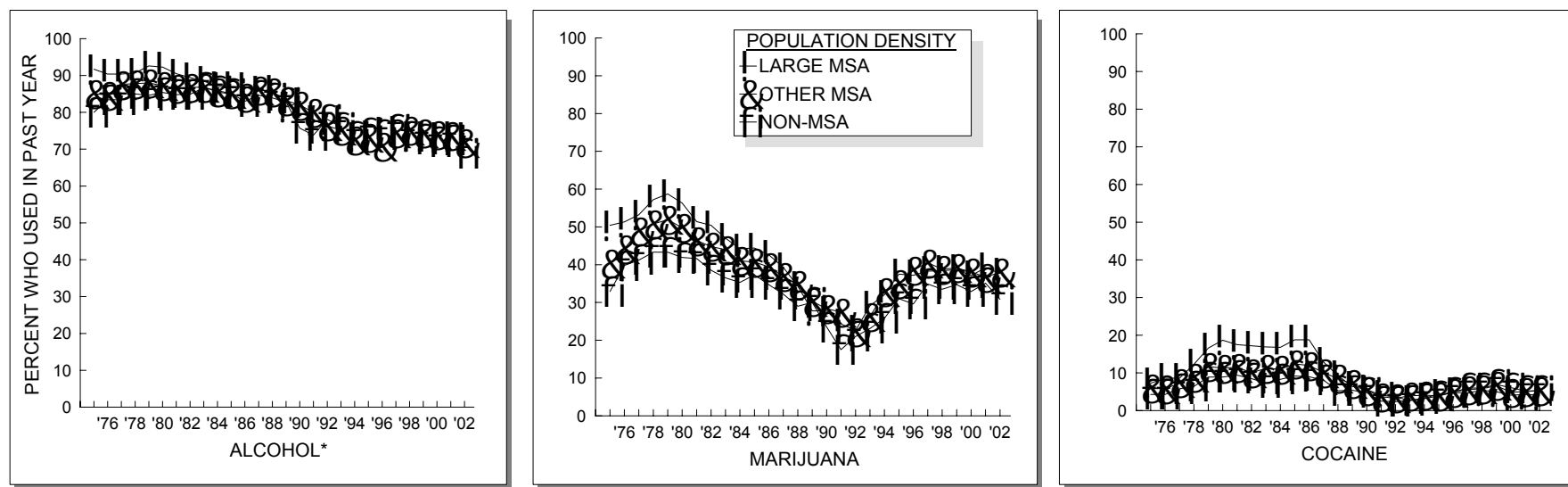
Trends in Annual Prevalence of an Illicit Drug Use Index for Twelfth Graders  
by Population Density



\*Beginning in 2001, revised sets of questions on other hallucinogen and tranquilizer use were introduced. Data for "any illicit other than marijuana" are affected by these changes. From 2001 on, data points are based on the revised questions.

FIGURE 5-11b

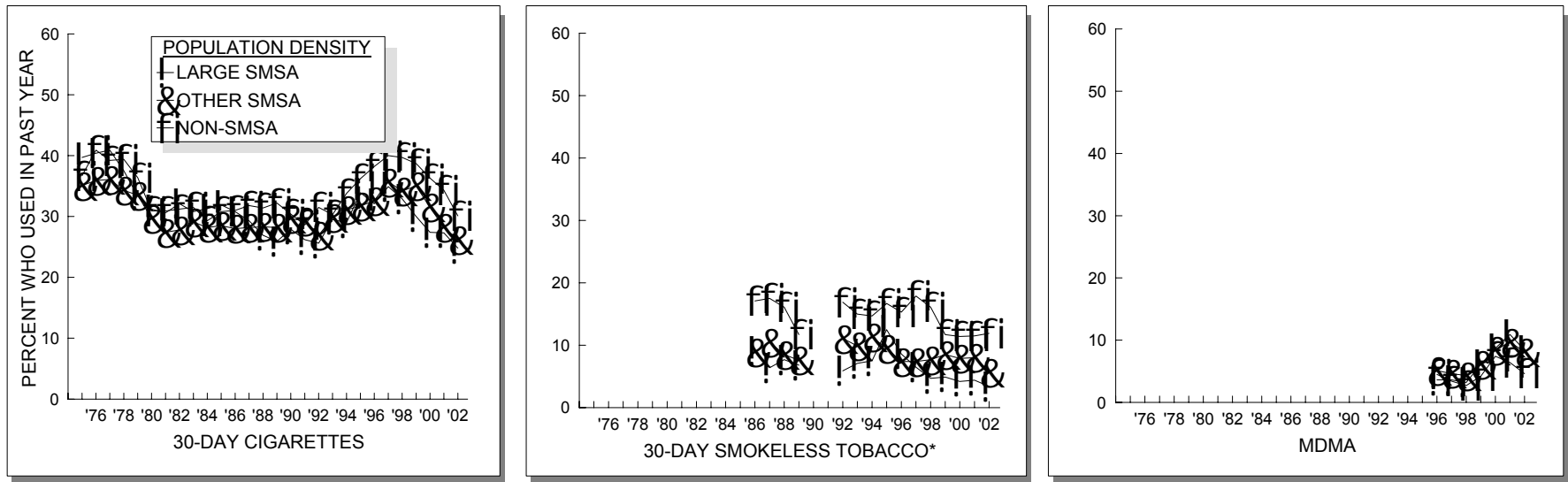
**Trends in Annual Prevalence of Alcohol, Marijuana, and Cocaine Use for Twelfth Graders  
by Population Density**



\*1993 data points are based on the data from the questionnaire forms containing the original wording of the alcohol questions; from 1994 on, data points are based on the revised alcohol questions. See text for details.

FIGURE 5-11c

**Trends in 30-Day Prevalence of Cigarettes and Smokeless Tobacco, and Annual Prevalence of MDMA Use for Twelfth Graders by Population Density**



\*Question was not asked in 1990 or 1991.

FIGURE 5-12a

**Marijuana: Trends in Annual Prevalence by Average Education of Parents for Twelfth Graders**

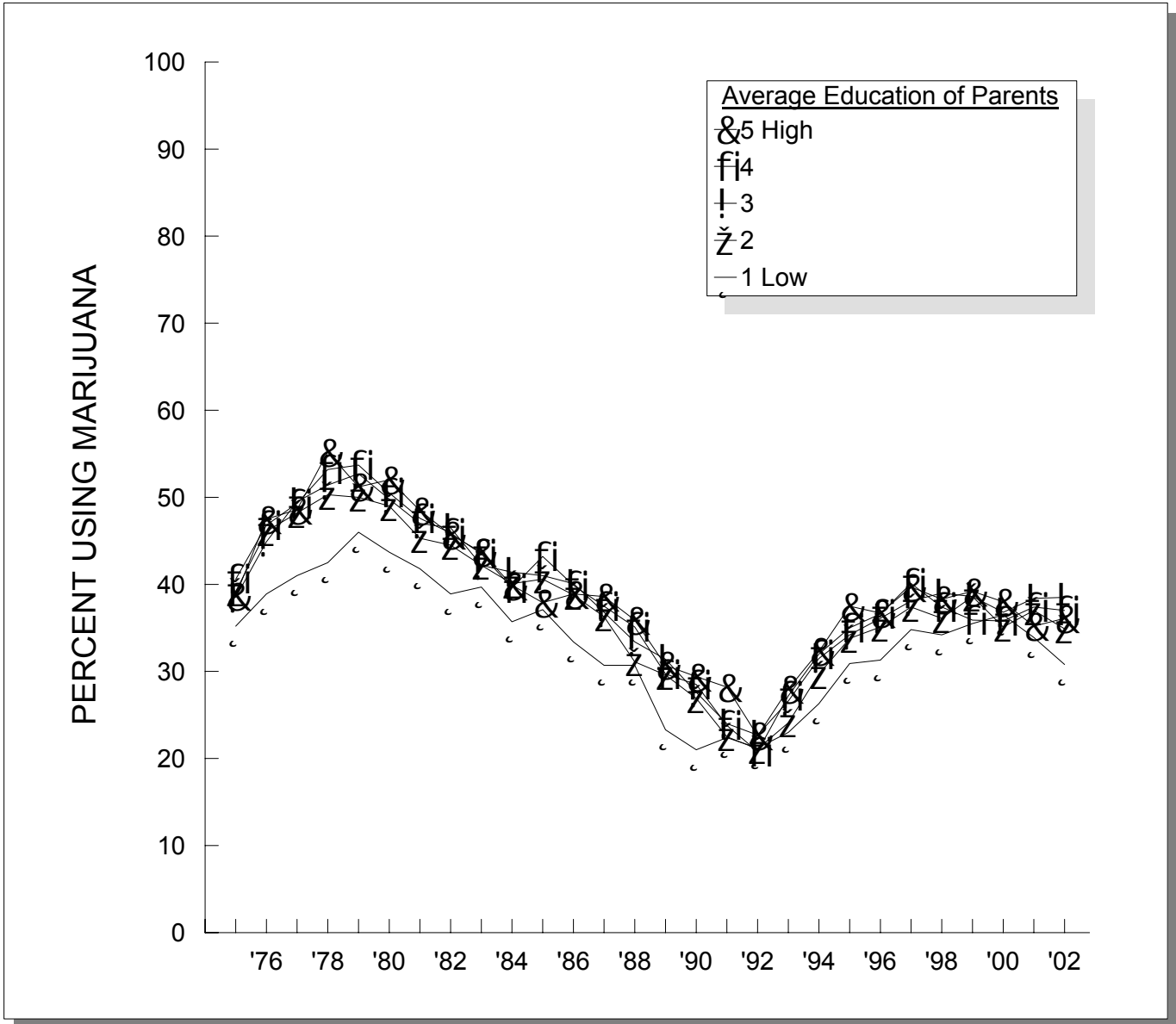


FIGURE 5-12b

**Cocaine: Trends in Annual Prevalence by Average Education of Parents for Twelfth Graders**

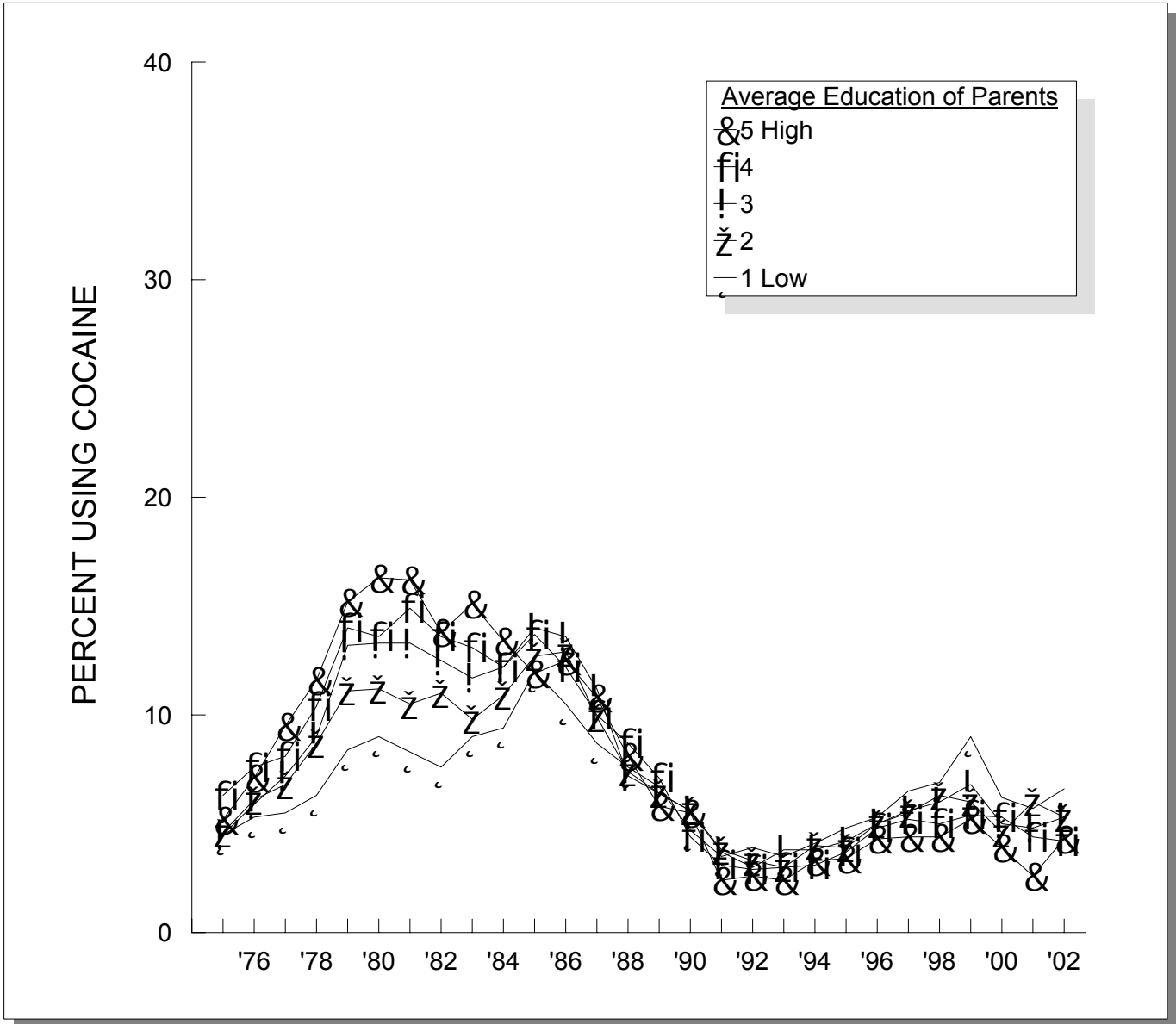


FIGURE 5-12c

**LSD: Trends in Annual Prevalence by Average Education of Parents for Twelfth Graders**

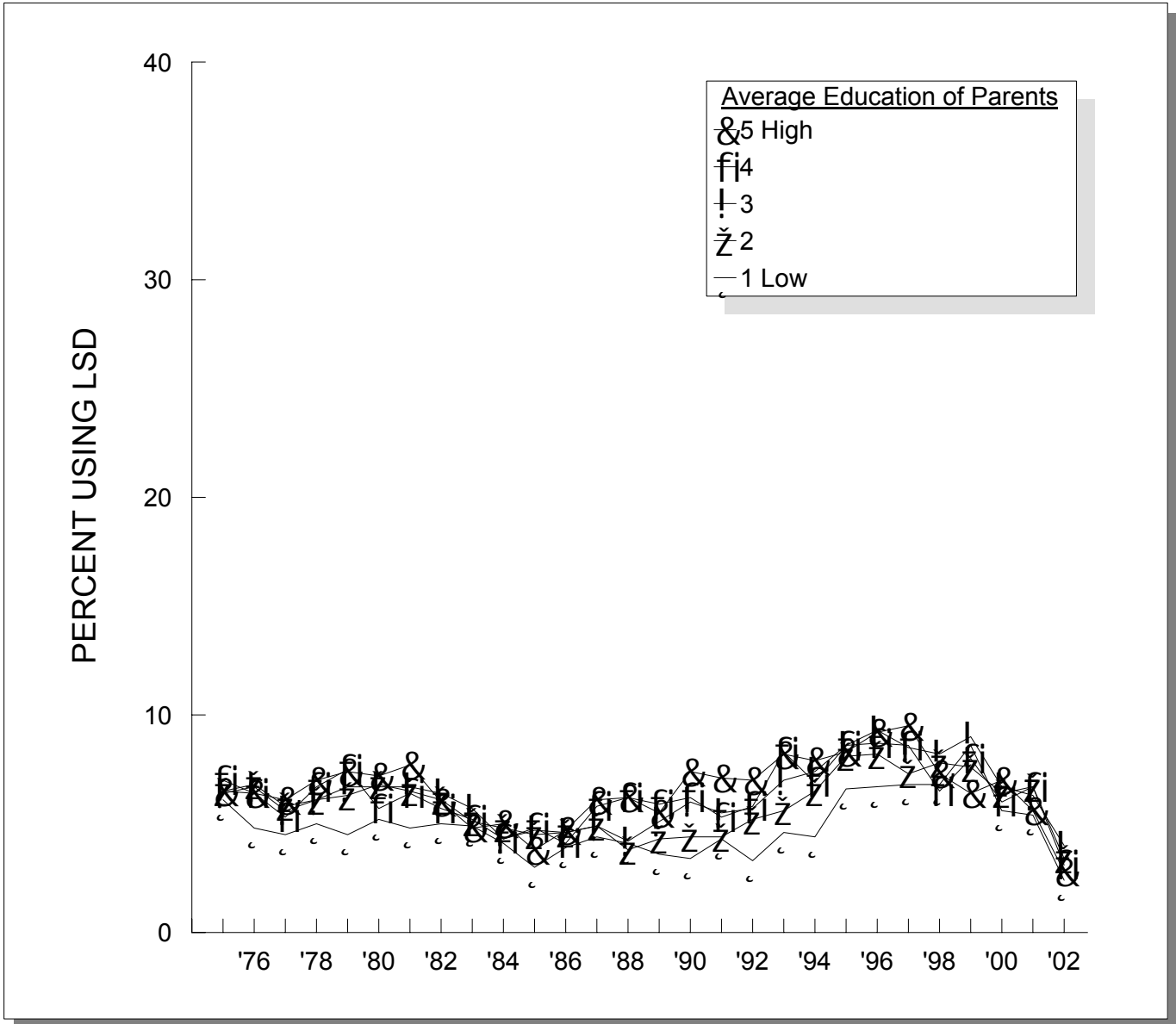
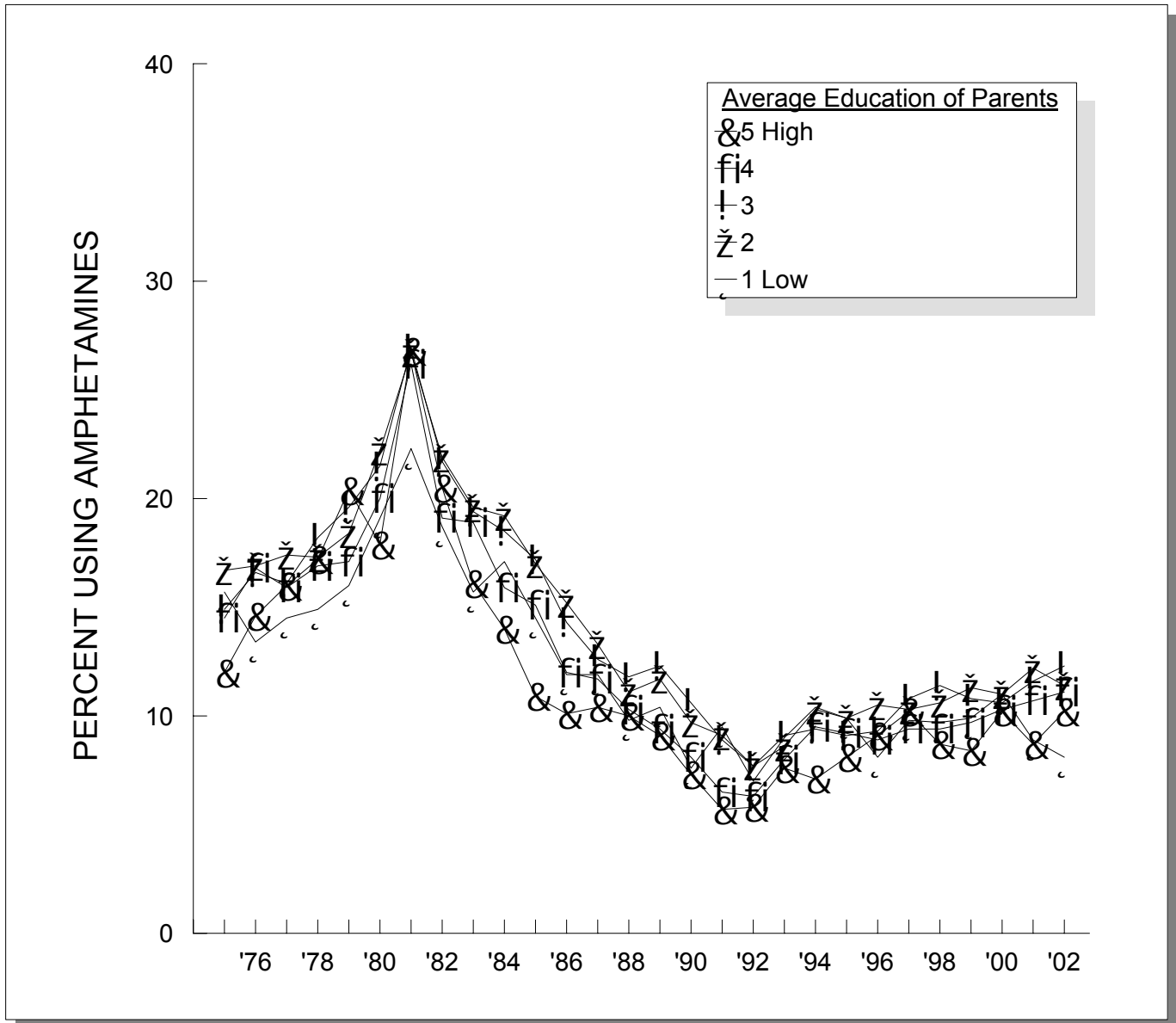


FIGURE 5-12d

**Amphetamines: Trends in Annual Prevalence by Average Education of Parents for Twelfth Graders**



NOTE: Beginning in 1982 the question about stimulant use (i.e., amphetamines) was revised to get respondents to exclude the inappropriate reporting of nonprescription stimulants. The prevalence rate dropped slightly as a result of this methodological change.

FIGURE 5-12e

**Heavy Drinking: Trends in Two-Week Prevalence of 5 or More Drinks in a Row by Average Education of Parents for Twelfth Graders**

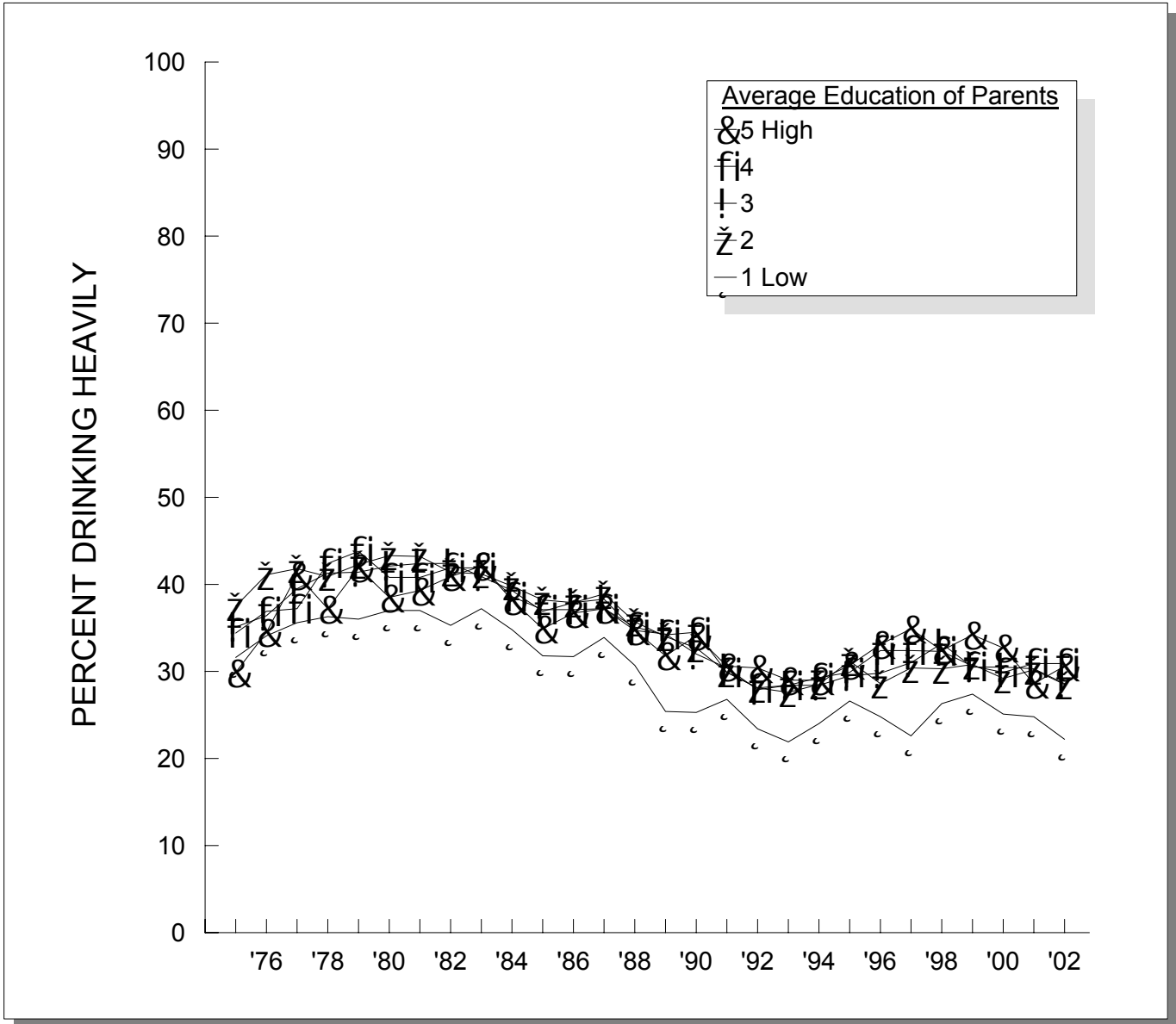




FIGURE 5-12f

**Cigarettes: Trends in Daily Prevalence by Average Education of Parents for Twelfth Graders**

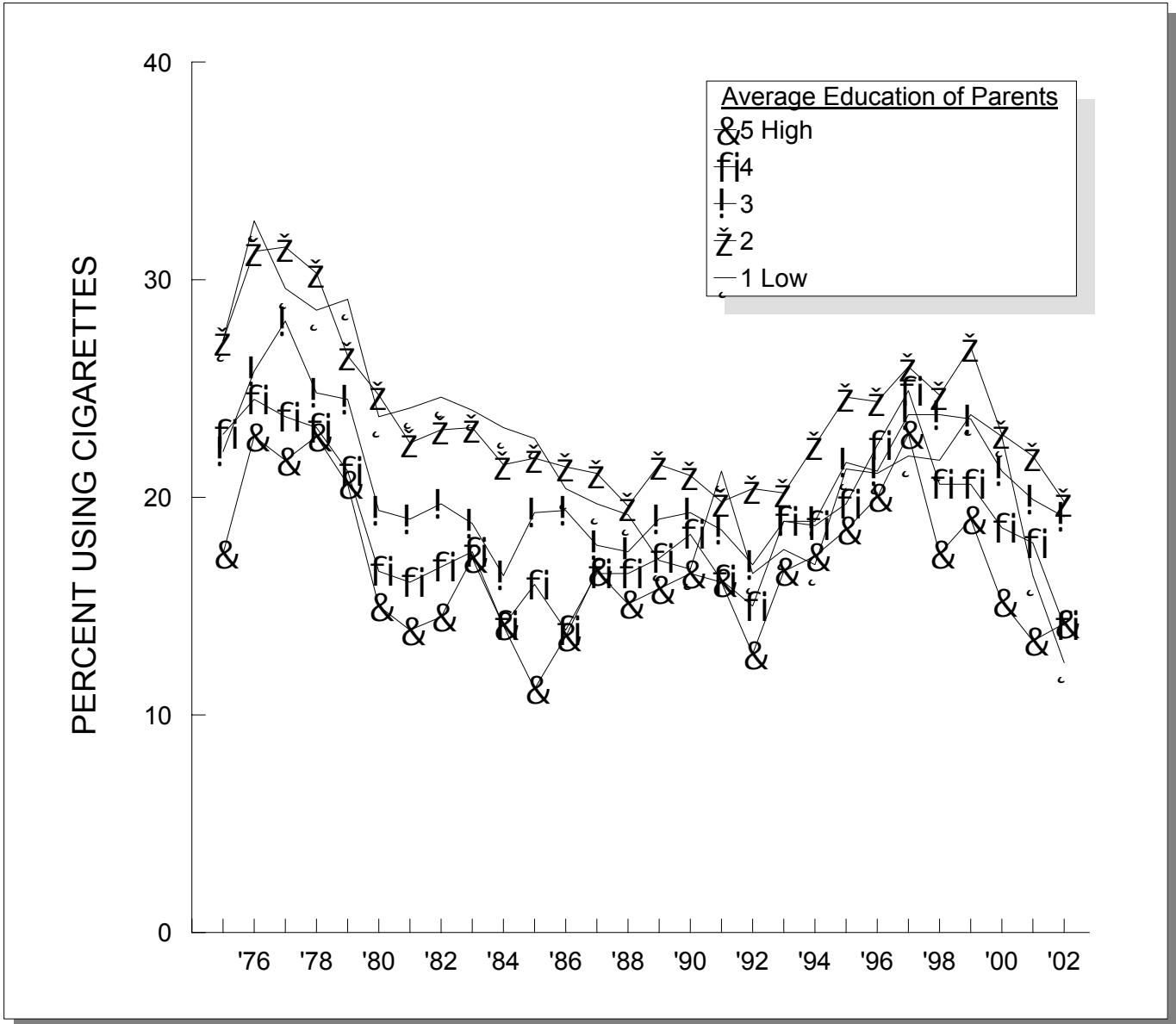
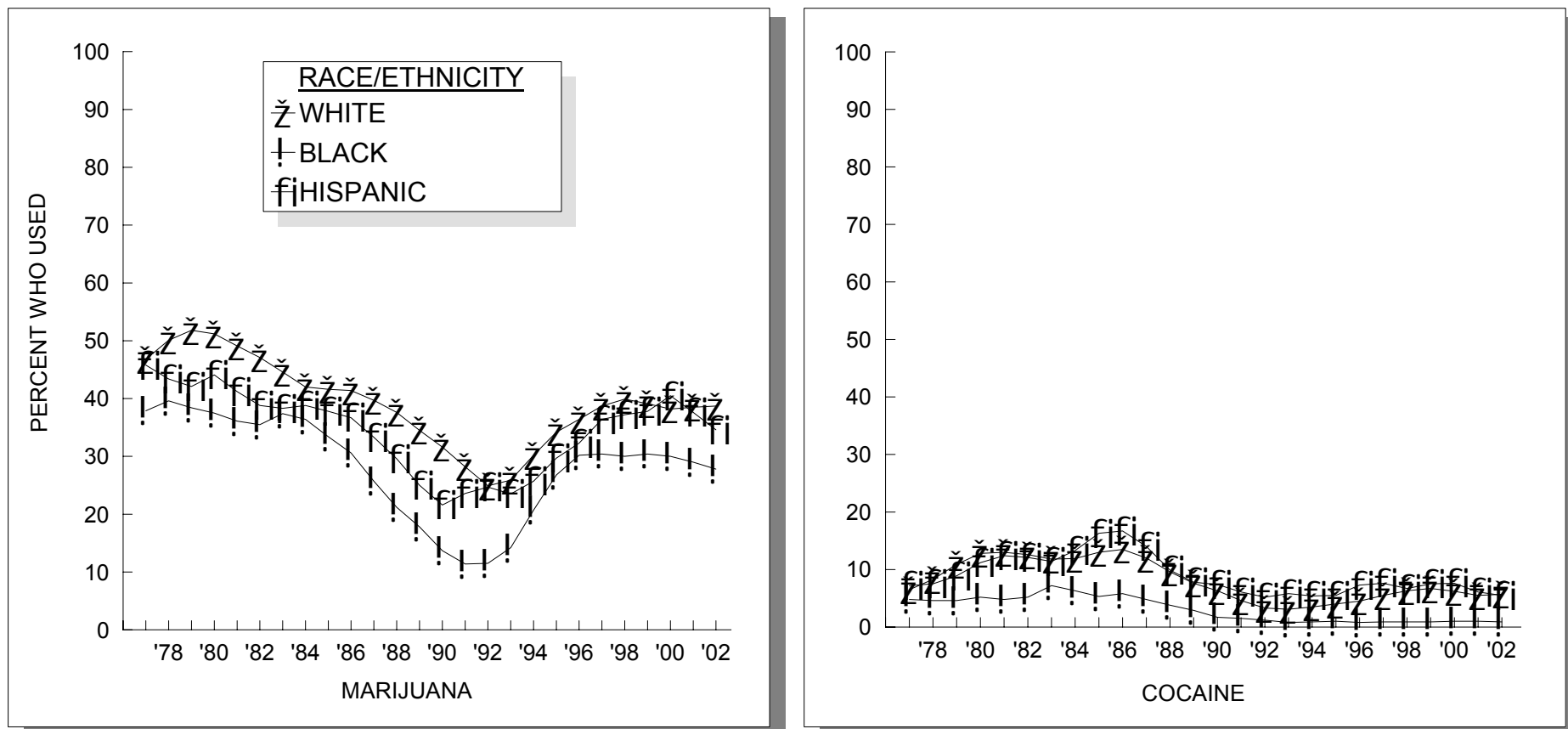


FIGURE 5-13a

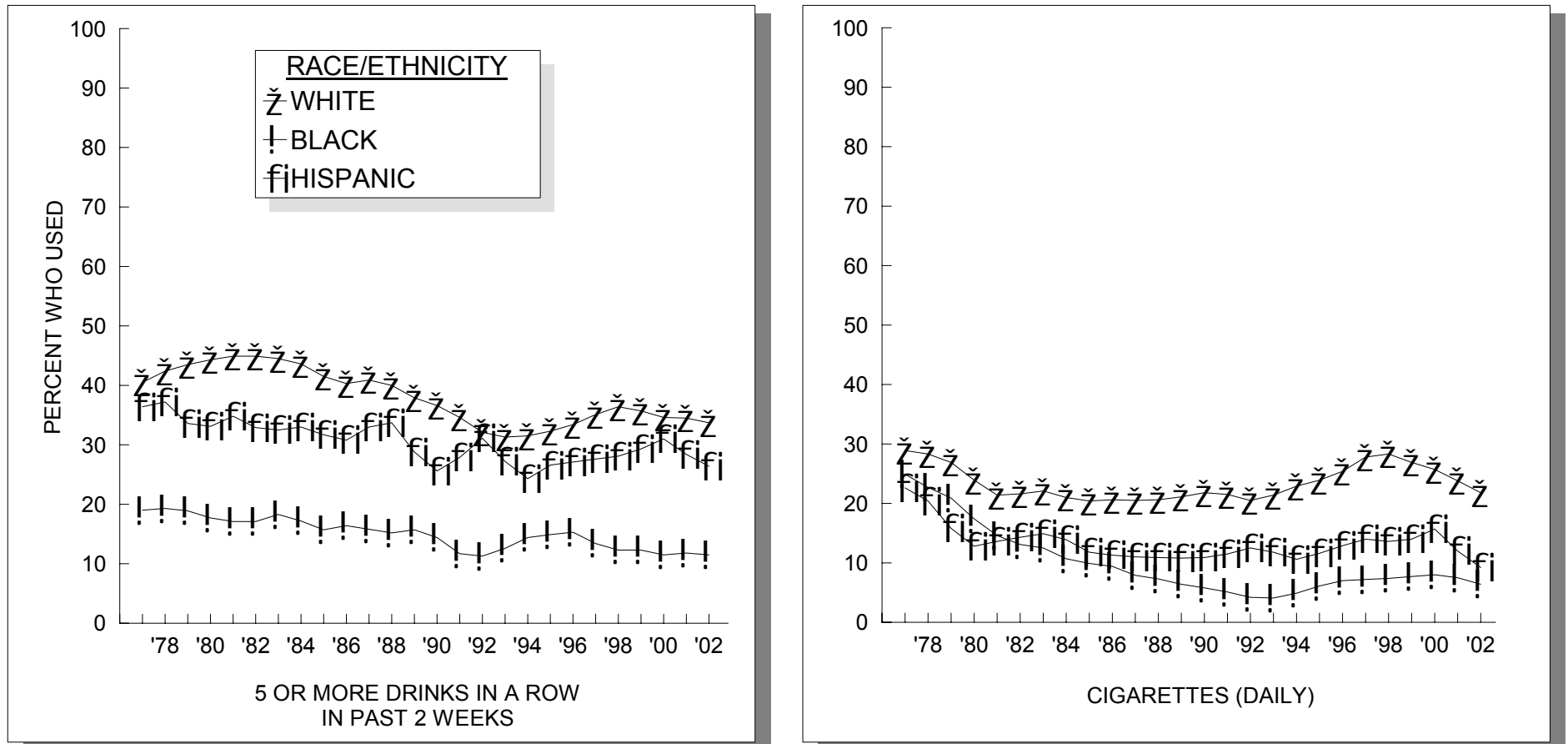
**Trends in Annual Prevalence of Marijuana and Cocaine Use  
for Twelfth Graders  
by Race/Ethnicity  
(Two-year moving average\*)**



\*Each point plotted here is the mean of the specified year and the previous year.

FIGURE 5-13b

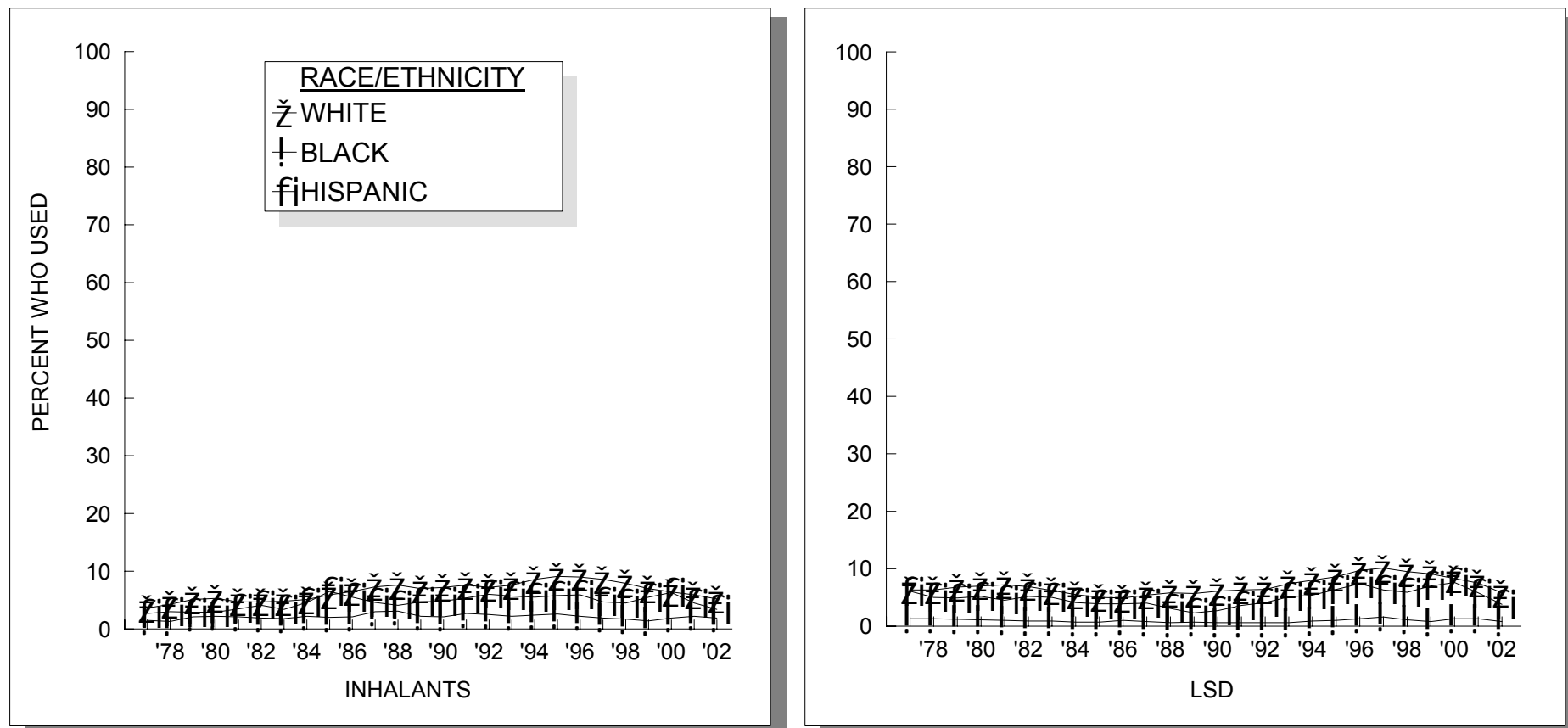
**Trends in Prevalence of 5 or More Drinks in a Row in the Past 2 Weeks and Daily Use of Cigarettes for Twelfth Graders by Race/Ethnicity**  
(Two-year moving average\*)



\*Each point plotted here is the mean of the specified year and the previous year.

FIGURE 5-13c

**Trends in Annual Prevalence of Inhalant and LSD Use  
for Twelfth Graders  
by Race/Ethnicity  
(Two-year moving average\*)**



\*Each point plotted here is the mean of the specified year and the previous year.

## **Chapter 6**

### **INITIATION RATES AND TRENDS IN INITIATION RATES AT LOWER GRADE LEVELS**

For many years Monitoring the Future has been tracking the age (or more precisely, the grade level) at which American young people say that they started using the various licit and illicit drugs. It is important to know the age at which they begin to use various drugs, in part because that information provides a guide to the timing and nature of various interventions in the school, the home, and the larger society—for example, media campaigns or in-school curricula. Any such interventions are likely to be considerably less effective in preventing drug use if administered after the ages of peak initiation. They also may be less effective if they substantially precede this decision-making period. We know that users' ages of peak initiation vary according to drug and tend to progress from drugs perceived as the least risky, deviant, or illegal toward those that are more so.

Age of initiation data exist for high school seniors since 1975. The results reported in this series of monographs provide a retrospective view of trends in lifetime prevalence of use at earlier grade levels. Because these trends span a much longer time period than the study itself, we continue to include here the series of figures based on seniors' responses, even though we now measure drug usage rates directly from eighth and tenth graders. We also have included retrospective figures for eighth graders' reported grade of first use.

One would not necessarily expect a particular year's eighth, tenth, and twelfth graders to give the same retrospective prevalence rate for a drug, even for a given grade level (e.g., sixth grade), because the three groups differ in a number of ways. These differences can be summarized as follows:

- The lower grades contain the eventual school dropouts, while twelfth grade does not. The lower grades also have lower absentee rates. For any given year, both factors should cause the prevalence of use rates derived directly from eighth graders to be higher for a given calendar year than the retrospective prevalence rates for eighth grade derived from the same cohort of young people who are still students in tenth grade or twelfth grade.
- Since each class cohort was in eighth grade in a different year, any broad secular (historical) trend in the use of a drug could contribute to differences in respondents' reports of their experiences when they were in eighth grade.
- Since the eighth, tenth, and twelfth graders are in three different class cohorts, any lasting differences among cohorts ("cohort effects") could contribute to a difference at any grade level, including eighth grade.

Two types of method artifacts could also explain observed differences in the retrospective reports of use by eighth, tenth, and twelfth graders:

- Memory errors are more likely for the older respondents. They may forget *that* an event ever occurred (although this is unlikely for use of drugs) or they may not accurately remember *when* an event occurred. For example, an event may be remembered as having occurred more recently than it actually did—a kind of “forward telescoping” of the recalled timing of events.<sup>60</sup>
- The definition of the eligible “event” may change as a respondent gets older. Thus, an older student may be less likely to include an occasion of taking a sip from someone’s beer as an alcohol use event, or an older student may be more likely to exclude appropriately an over-the-counter stimulant when asked about amphetamine use events. While we attempt to ask the questions as clearly as possible, some of these drug definitions are fairly subtle and are likely to be more difficult for the younger respondents. Indeed, we have omitted from this report eighth and tenth graders’ data on their use of barbiturates and narcotics other than heroin precisely because we judged them to contain erroneous information.<sup>61</sup>

## INCIDENCE OF USE BY GRADE LEVEL

Tables 6-1 through 6-3 provide the retrospective initiation as reported by students surveyed in eighth, tenth, and twelfth grades, respectively. Obviously, the older students have a larger age span over which they can report initiation. Table 6-4 combines the retrospective initiation rates from all three sets of respondents in order to facilitate a comparison of reported initiation rates by particular grade levels.

The set of questions from which the data are derived have a common stem: “When (if ever) did you FIRST do each of the following things? Don’t count anything you took because a doctor told you to.” The first event is “smoke your first cigarette,” followed by “smoke cigarettes on a daily basis,” followed by “try an alcoholic beverage—more than a just a few sips,” etc. The answer alternatives are stated in terms of grade level.

- Eighth-, tenth-, and twelfth-grade respondents all retrospectively reported very low usage rates by the end of sixth grade for **LSD**, **crack cocaine**, **cocaine powder**, **heroin**, and **steroids** (all lower than 1%) and for **hallucinogens**, **cocaine**, and **tranquilizers** (all less than 1.5%). Any use of **amphetamines** by sixth grade was reported by less than 2.5%.

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<sup>60</sup>See Bachman, J. G. & O’Malley, P. M. (1981). When four months equal a year: Inconsistencies in students’ reports of drug use. *Public Opinion Quarterly*, 45, 536-548; Thomas B. Jabine, Miron L. Straf, Judith M. Tanur, & Roger Tourangeau (Eds.) (1984). *Cognitive aspects of survey methodology: Building a bridge between disciplines*. Washington DC: National Academy Press.

<sup>61</sup>We have found that follow-ups of high school seniors into young adulthood lead to a higher recanting rate for the psychotherapeutic drugs, in contrast to the illegal drugs. We interpret this discrepancy as reflecting, in part, a better understanding of the distinctions between prescription and non-prescription drugs in young adulthood. See Johnston, L. D. & O’Malley, P. M. (1997). The recanting of earlier reported drug use by young adults. In L. Harrison & A. Hughes (Eds.), *The validity of self-reported drug use: Improving the accuracy of survey estimates* (pp. 59-80). (NIDA Research Monograph 167). Rockville, MD: National Institute on Drug Abuse.

- Among the eighth-grade respondents in 2002, 6.4% of them—or about 1 in every 16—said they had tried *marijuana* by the end of sixth grade. The older respondents give lower retrospective estimates of their marijuana use by sixth grade: 5.2% among tenth-grade respondents and 2.9% among twelfth-grade respondents.
- In general, the legal drugs (*alcohol* and *tobacco*) are the most likely to have been initiated at an early age, with *inhalants* and *marijuana* likely to come next.
- Cigarette smoking tends to be initiated particularly early. Based on the data from current eighth graders (Table 6-1), their peak years for initiation of *cigarette* smoking appear to have been in the sixth and seventh grades (15%)—or between ages 11 and 13—but a considerable number initiated smoking even earlier. In fact, 13% of the 2002 eighth-grade respondents reported having had their first cigarette by fifth grade. Based on the data from twelfth graders, their *daily smoking* was initiated primarily in grades 7 through 11, and then the rate of initiation dropped off in grade 12 (see Table 6-3).

Because educational attainment is very highly correlated with smoking, the differential inclusion of eventual dropouts could account for much of the difference between sixth-grade smoking rates derived in 2002 from eighth graders (20%) and those derived from twelfth graders (15%). In addition, teen smoking rates were changing in the interval between 1995, when today's twelfth graders were in fifth grade, and 1999, when today's eighth graders were in fifth grade.

- *Smokeless tobacco* use also tends to be initiated quite early, as Tables 6-1 through 6-3 illustrate, with grades 7 through 10 tending to show the highest rates of initiation. Of the eighth grade respondents in 2002, some 6.0% reported that they had tried smokeless tobacco by sixth grade, and 11.2% by eighth grade. Among boys, of course, these rates are substantially higher.
- *Inhalant* use tends to occur early, with peak initiation rates in grades 6 through 9. In fact, among eighth-grade respondents in 2002, 5.8% had already tried inhalants by the end of the fifth grade.

Of the illicit drugs, only inhalants show very large differences in the incidence rates reported by the three grade levels responding. While only 1.2% of the twelfth graders in 2002 reported using inhalants by the end of sixth grade, a much higher 9.2% of the 2002 eighth graders reported such use by sixth grade. Although any of the explanations offered earlier might explain these differences, we believe that early inhalant use may be particularly associated with dropping out. In addition, use of non-nitrite inhalants such as glues, aerosols, and butane had been increasing for some time (up to 1995), and these inhalants tend to be used at younger ages.

- For *alcohol*, we are inclined to rely on the data from seniors, which suggest that the peak years of initiation are seventh through eleventh grades. While the first occasion of *drunkenness* is most likely to occur in grades 7 through 11, some 5.9% of the 2002

eighth graders reported first having been drunk by the end of sixth grade, and 21.3% report having been drunk by the end of eighth grade.

**Alcohol** use by the end of sixth grade is reported by 23.0% of the 2002 eighth graders but by only 6.7% of the 2002 twelfth graders. Several factors may contribute to this difference. One is that eventual dropouts undoubtedly are more likely than average to drink at an early age. Another is related to the issue of what is meant by “first use.” The questions for all grades refer specifically to the first use of “an alcoholic beverage—more than just a few sips,” but it is likely that the older students (twelfth graders) are more inclined to report only use that is *not* adult-approved and not to count having less than a glass with parents or for religious purposes. Younger students (eighth graders) are less likely to have had a full drink or more and may be more likely to report first use of a limited amount. Thus, the eighth-grade data probably exaggerate the phenomenon of having more than a few sips, whereas the twelfth-grade data may understate it. Note that the data from the three groups of respondents tend to converge as we ask about lifetime alcohol use by the time they reach higher grade levels.

- For **marijuana**, the highest initiation rates are seen in grades 7 through 11, although 6.4% of the 2002 eighth graders reported that they had tried marijuana by the end of sixth grade.
- The illicit drugs other than marijuana and inhalants generally do not reach peak initiation rates until the high school years (grades 10 through 12), consistent with the progression model noted earlier. **Amphetamines**, specifically, showed a high initiation rate in grades 9 through 12.

Of all the twelfth-grade respondents who said they had tried a drug by the end of twelfth grade, the proportion of users saying that they had initiated that use *prior to grade 10* is presented here. This listing gives a good measure of the order of age initiation:<sup>62</sup>

**cigarettes** (79%)  
**inhalants** (62%)  
**alcohol** (60%)  
**nitrite inhalants** (60%)  
**smokeless tobacco** (57%)  
**daily cigarette smoking** (56%)  
**marijuana** (54%)  
**methaqualone** (53%)  
**LSD** (50%)  
**been drunk** (50%)  
**barbiturates** (46%)  
**PCP** (45%)  
**hallucinogens** (44%)  
**amphetamines** (40%)

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<sup>62</sup>Note that such an ordering can be influenced by secular trends in use.



*tranquilizers* (38%)  
*other hallucinogens* (37%)  
*heroin* (35%)  
*crack* (32%)  
*narcotics other than heroin* (31%)  
*cocaine* (28%)  
*other forms of cocaine* (26%)  
*steroids* (20%)

## TRENDS IN LIFETIME PREVALENCE AT EARLIER GRADE LEVELS

Using the retrospective data provided by members of each senior class concerning their grade of first use, it has been possible to reconstruct lifetime-prevalence-of-use trend curves for lower grade levels over many earlier years. Obviously, data from school dropouts are not included in any of the curves based on twelfth graders. Figures 6-1 through 6-25 present the reconstructed lifetime prevalence curves for earlier grade levels for most drugs. When comparable data are available, starting with Figure 6-4, there is also a panel showing retrospective prevalence curves based on data gathered from eighth graders, who have been included in the study since 1991. These curves *should* include data from nearly all the eventual dropouts.

When comparing the upper figures, based on retrospective data provided by twelfth grade respondents, with the lower figures, based on retrospective data provided by eighth grade respondents, the reader should keep in mind that they are often plotted on different scales. We used different scales to improve the clarity of each figure, although they somewhat complicate the task of comparing across them.

We have chosen to speak here about changes in lifetime prevalence attained at the various grade levels, rather than in terms of “average age of initiation.” Average age of initiation (first use) is another way to talk about the type of data presented in this chapter, but we think that it can be misleading at times. For example, the average age of initiation could be lower in more recent classes because fewer people are initiating use at *later* ages than were doing so previously (perhaps due to a downward secular trend at that time); and yet there may be no increase in the proportion of them starting at younger ages at all. Or the average age of initiation could be rising because more people are initiating at older ages (perhaps because of a recent upward secular trend), again with no necessary change in the proportion starting at young ages. We suspect that most readers, when they hear that the average age of initiation has gone down, conceptualize this fact as reflecting some shift in the propensity to use at younger ages, independent of any secular trends, and therein lies the potential confusion. For this reason, we have chosen to talk in terms of trends in lifetime prevalence attained by each class of students as they reach different grade levels.

- Based on the retrospective data provided by successive twelfth-grade classes, Figure 6-1 shows the trends at each grade level for lifetime use of *any illicit drug*. It shows that all grade levels had a continuous increase in illicit drug involvement through the 1970s. Fortunately, the increase in use below seventh grade was quite small; the retrospective

rate in 1969 (based on the class of 1975) for sixth grade or below was 1.1%. That figure increased modestly through 1978, leveled for a time, and then declined in the late 1980s, from 3.5% in 1986 to 2.1% in 1989. The lines for the other grade levels all show much steeper upward slopes, followed by earlier and longer declines. For example, about 37% of tenth graders in 1973 had used some illicit drug compared with 52% by 1980. This statistic fell to 28% by 1991 and then leveled. It increased from 1993 to 1995, before leveling by 1996.

- Most of the early increase in *any illicit drug use* was due to increasing proportions using marijuana. We know this from the results in Figure 6-2, showing trends for each grade level in the proportion having used *any illicit drug other than marijuana* in their lifetime. Compared with Figure 6-4 for marijuana use, these trend lines are relatively flat throughout the 1970s and, if anything, begin to taper off among ninth and tenth graders between 1975 and 1977. The biggest cause of increases in these curves from 1978 to 1981 was the rise in reports of *amphetamine* use. As noted earlier, we suspect that at least some of this rise was artifactual. If amphetamine use is removed from the calculations, even greater stability is shown in the proportion using illicit drugs other than marijuana or amphetamines (see Figure 6-3).
- Similarly, much of the increase in illicit drug use in the early 1990s was due to increases in marijuana use. The inclines in the lines are far sharper in Figure 6-1 than in Figure 6-2.
- As the top panel of Figure 6-4 shows, throughout the 1970s lifetime prevalence of *marijuana* use rose steadily at all grade levels down through the seventh and eighth grades. Beginning in 1980, lifetime prevalence of marijuana use began to decline in grades 9 through 12. Declines in grades 7 and 8 began a year later, in 1981.

There was also some small increase in marijuana use during the 1970s at the elementary school level, below seventh grade. Use by sixth grade or lower rose gradually from 0.6% for the class of 1975 (who were sixth graders in 1968-1969) to a peak of 4.3% for the class of 1984 (who were sixth graders in 1977-1978). Use began dropping thereafter, and for the twelfth-grade class of 1999 (who were sixth graders in 1992-1993) it was down to 1.1%. (The most up-to-date data from the 2002 eighth graders, which are slightly incomparable due to the inclusion of eventual dropouts among eighth graders, yield a prevalence estimate of 6.4% for these students when they were sixth graders in 2000.) The data from eighth graders clearly indicate that marijuana use among sixth graders increased some after 1991 but then leveled by the mid-1990s.

Both the top and bottom panels of Figure 6-4 show the accelerating increase in marijuana lifetime prevalence of use that began after 1991 in grades 6 through 11 and after 1992 in grade 12. The recent upturn in the index of any illicit drug use (Figure 6-1) was due to the sharp increase in marijuana use (Figure 6-4), although the proportions using any illicit drug other than marijuana (Figure 6-2) rose modestly. The data from eighth graders suggest that the increase in marijuana use leveled off earlier in the lower grades (by 1995 in grade 6, by 1996 in grade 7) in what appears to be a cohort effect.

- Questions about grade of first use for *inhalants* (unadjusted for nitrites) were introduced in 1978. The retrospective trend curves (top panel of Figure 6-5) suggest that during the mid-1970s experience with inhalants decreased slightly for most grade levels and then began to rise. Initiation of use rose almost continually in the upper grade levels, peaking with the classes of 1989 and 1990. The twelfth-grade class of 1992 showed lower rates of initiation than its two predecessor classes at all grade levels. The classes of 1993 and 1994 had upward trends again, followed by a dip roughly in the classes of 1995 through 2002.

Among the eighth-grade respondents (lower panel of Figure 6-5), an upward trend began in 1992 for grades 7 and 8, before leveling around 1996, followed by a gradual decline. (As noted previously, the Partnership for a Drug-Free America initiated its anti-inhalant media campaign in 1995, quite likely influencing use.)

- Retrospective data are available for the *nitrite inhalants* since 1980 (see Figure 6-6). These do not show the long-term increase observed for the overall inhalant category. To the contrary, they show a substantial decline. Many nitrite users fail to include their nitrite use when responding to general questions about inhalant use. However, since nitrite use has dropped to a very low level, respondents' omission of nitrites has had much less effect on the adjusted inhalants statistics (not graphed here) in recent years than it did when nitrite use was much more common.
- Lifetime prevalence of *hallucinogen* use (unadjusted for under-reporting of PCP) began declining among students at most grade levels in the mid-1970s (see Figure 6-7), and this gradual decline continued through the mid-1980s. Recent years have shown some fluctuations, with an increase in lifetime prevalence between roughly 1992 and 1997. The classes of 1998-2002 showed some decline in their later years in high school. Eighth graders showed some decline after 1996 in their retrospective data. When the term "shrooms" was added to the list of examples for "other hallucinogens" in 2001, the absolute level of reported hallucinogen use increased somewhat, but the trend lines continued the decline that already was underway.
- Trend curves for the specific hallucinogen *LSD* (Figure 6-8) are similar in shape (though at lower rates, of course) to the ones just discussed. Unlike LSD, the lifetime prevalence rates for *hallucinogens other than LSD* (Figure 6-9) declined rather sharply from the mid-1970s through the late 1980s—particularly in the upper grades—before leveling. After 1991, use increased through 1997; the 1998 and 1999 classes of twelfth graders showed some decline, but a leveling occurred through the class of 2001. As mentioned above, the inclusion of "shrooms" in the example list beginning in 2001 seemed to increase reported use considerably, but the decline resumed in 2002 using the new measure. In the lower grades, the use of other hallucinogens seemed to peak even earlier—in 1996 for the eighth graders.
- There are fewer trend data for *PCP*, since retrospective questions about grade of first use for this drug were not added until 1980. However, some interesting results have

emerged. A sharp downturn began around 1979 (see Figure 6-10), and use declined substantially in all grade levels in which there had been appreciable use, until 1987. Through 1993 or 1994 there was little further change in the overall lifetime prevalence rates, which remained very low. A brief period of increase in use then occurred, followed by another leveling and then a bit of a decline.

- **Cocaine** use at earlier grade levels is displayed in Figure 6-11. For the twelfth-grade classes, one clear contrast to the marijuana pattern is that more than half of cocaine initiation takes place in grades 10 through 12 (rather than earlier, as has been the case for marijuana in most years). Further, most of the increase in cocaine experience between 1976 and 1980 occurred in grades 11 and 12, not below. After 1980, lifetime prevalence of cocaine generally remained fairly level through 1986, after which it showed a significant decline among eleventh and twelfth graders. (There seemed to be less of a decline in the lower grades.) Lifetime prevalence of use rates leveled briefly after 1992 in the upper grades. But rates began to rise in grades 6, 7, and 8 after 1990 (see lower panel, Figure 6-11). In the upper grades, lifetime prevalence of use began to rise after 1994 or 1995 but has been declining in recent years. As seems to be true for a number of drugs, the increase that occurred in the early and mid-1990s suggests a cohort effect for cocaine use, following a long period of what could best be described as secular trends.
- Questions on grade of first use for **crack** were first asked of the class of 1987. The retrospective data show the lifetime prevalence of crack falling after 1986 at all grade levels in which there was any appreciable use (see Figure 6-12). Rates then leveled but in the mid-1990s began inching up. Rates reported by eighth graders showed a sharper rise in the seventh and eighth grades in the 1990s, beginning after 1992, before leveling in the late 1990s (see lower panel, Figure 6-12). Again, the pattern of change seems to be a cohort effect, with changes first occurring at earlier ages and then echoing in subsequent years up the age spectrum.
- The use of **powdered cocaine** clearly fell more sharply than did that of crack in the early decline phase (see Figure 6-13), again mostly in grades 11 and 12. Cocaine powder showed a sharper increase during the 1990s among twelfth graders, before leveling after 1998 and then declining gradually after 1999. Eighth-grade use also rose sharply in the 1990s, stabilized, and then declined in the more recent classes.
- Though somewhat difficult to discern in Figure 6-14, the **heroin** lifetime prevalence figures for grades 9 through 12 began declining in the mid-1970s, leveled by 1979, and showed no evidence of reversal until the 1990s. After about 1991, lifetime prevalence of use increased at all grade levels above sixth grade. Beginning in 1996 or 1997, however, there was a leveling or decline in all grades for which data are available. Seventh and eighth graders were the first to show the most recent decline.
- The lifetime prevalence of use of **narcotics other than heroin** remained relatively flat at all grade levels from the mid-1970s through 1990, with the class of 1991 showing the first evidence of a decline when they reached the upper grades (see Figure 6-15). Rates then leveled briefly before showing some increase in the mid-1990s, particularly in the

upper grades. The class of 1998 (when they passed through the various grade levels) was the first to show a leveling for this class of drugs, as well as a number of the other drugs. There has been little change in the initiation of this class of drugs in recent years.

- The lifetime prevalence statistics for *amphetamines* peaked briefly for grades 9 through 12 during the mid-1970s (see Figure 6-16). However, they showed a sharp rise in the late 1970s at virtually all grade levels. As stated earlier, we believe that some, perhaps most, of this upturn was artifactual in the sense that the inappropriate inclusion of nonprescription amphetamines by the twelfth-grade respondents accounted for much of it. However, regardless of the cause, beginning in 1979 a clear upward secular trend was observed across all cohorts and grade levels. The unadjusted data from the class of 1983 gave the first indication of a reversal of this trend. The data from the classes of 1982 through 1992, based on an improved wording of the question, suggest that the use of amphetamines leveled around 1982 and thereafter fell appreciably in grades 9 through 12. The classes of 1993 and 1994 showed an upturn in use in the upper grade levels, and the recent surveys of eighth and tenth graders show that some upturn also occurred among them after 1992. The lower panel of Figure 6-16 shows an increase in grade 7, as well, which began after 1991 and lasted through 1996. Once again, the pattern of change in the 1990s is consistent with a cohort-related change. The twelfth grade classes of 2001 and 2002 show some evidence of another period of increasing initiation, which we will carefully follow. There is no such indication in the data from eighth or tenth graders.
- As shown in the graphs for the two subclasses of sedatives—barbiturates and methaqualone—the trend lines have been quite different at earlier grade levels as well as in twelfth grade (see Figures 6-17 and 6-18). Lifetime prevalence of *barbiturate* use fell sharply for the upper grade levels for all classes from 1974 or 1975 until the late 1970s; the lower grade levels showed some increase in the late 1970s (perhaps reflecting the advent of some look-alike, barbiturate-type drugs); and in the mid-1980s most grade levels resumed the decline. In the late 1980s there was a leveling of the rates, followed by signs of an upturn by the mid-1990s at all grade levels.
- During the mid-1970s, *methaqualone* use started to fall off at about the same time as did barbiturate use in nearly all grade levels, but it dropped rather little and then flattened (see Figure 6-18). Between 1978 and 1981, there was a moderate resurgence in use at all grade levels; but after 1982 there was a sharp decline at all grade levels to near zero by the early 1990s. A very slight increase in initiation occurred in the mid-1990s.
- Lifetime prevalence of *tranquilizer* use (Figure 6-19) also began to decline at all grade levels in the mid-1970s. It is noteworthy that, as with sedatives, the overall decline in tranquilizer use has been considerably greater in the upper grade levels than in the lower ones. Overall, it would appear that the tranquilizer trend lines have been following a course similar to those of barbiturates. So far, the curves are different only in that tranquilizer use continued a steady decline among eleventh and twelfth graders after 1977 (at least through the class of 1990), while the barbiturate use decline was interrupted for awhile in the early 1980s. Since 1992, there has been a slight increase in lifetime prevalence of use in grades 8 and above, but the classes of 2000 and 2001 reported

slightly decreased initiation rates. The retrospective data reported by eighth graders show mostly level lifetime prevalences for the different grades since 1996. In 2001 Xanax was added to the list of examples in the question, increasing reported use that year. The Class of 2002 showed some increase in use on the modified question, but the eighth grade class that year showed some decline.

- The curves for lifetime prevalence of *alcohol use* at grades 11 and 12 (Figure 6-20) are very flat between the early 1970s and late 1980s, reflecting little change in lifetime prevalence of use over more than a decade. More recent classes (1989-1993) showed slight declines, which ended with the class of 1993. By way of contrast, in the retrospective data reported by seniors the lifetime prevalence curves for seventh through tenth grade showed slight upward slopes in the early 1970s and an even sharper upward trend in the mid-1980s. The latter trend indicates that, compared to the earlier cohorts (prior to the class of 1978), those later classes initiated use at slightly earlier ages on average. Thus, while 27% of the class of 1975 had first used alcohol in eighth grade or earlier, 36% in the class of 1993 had done so. Females accounted for most of the change; 42% of females in the class of 1975 had first used alcohol prior to tenth grade, compared to 53% in the class of 1993. Because all of the results from the class of 1994 onward are based on the revised questions about alcohol use, these data are not strictly comparable to the earlier trend data. The revised data from the classes of 1993 through 2002, which qualify the alcohol use question with the phrase “more than just a few sips,” show rather little further change. The lower panel of Figure 6-20, based on data from respondents when they are in eighth grade, shows a gradual, steady decline in lifetime prevalence of use from the late 1980s through 2002 in grades 4 through 8.

Beginning in 1986, we added questions asking twelfth graders when did they first “drink enough to feel drunk or very high.” Figure 6-21, which gives trends in the lifetime prevalence of having *been drunk*, shows fairly similar curves to those for lifetime prevalence of alcohol use. The classes of 1990 through 1993 showed modest declines in this behavior at all grade levels above sixth grade for a few years, before leveling. Based on the answers from eighth graders, there has been some gradual decline in lifetime incidence of drunkenness in the lower grades throughout most of the 1990s and into the early 2000s, consistent with their gradually increasing rate of abstention mentioned previously. In fact, the decline accelerated in 2001 and 2002.

- Questions asking seniors “when did you smoke your first cigarette?” were added in 1986. (A question about daily smoking was included from the beginning of the study in 1975.) Figure 6-22 shows that for the class of 1986 the rate of *cigarette smoking* initiation was quite high by grade 6 (i.e., in 1980); over 20% had used cigarettes by sixth grade.<sup>63</sup> In subsequent classes, this measure fell gradually; 15% of the class of 2002 reported having initiated cigarette smoking by the end of sixth grade, that is, by 1996.

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<sup>63</sup>Because of the predominance of cohort effects in the trends in cigarette use, we discuss the findings here mostly in terms of graduating classes instead of calendar years.

Substantial additional initiation occurs in grades 7 and 8, as can be seen in the wide gap between the bottom two lines in the upper panel of Figure 6-22. Over 40% of the class of 1986 had smoked a cigarette by the end of eighth grade; and 36% of the class of 2002 had initiated use by then (i.e., by 1998). Initiation rates declined very gradually in the classes of 1986 through 1992 when students were at each grade level, from grade 6 onward. The classes of 1994 through 1999 showed some increase in initiation rates when these students were in grades 10 through 12, but only the classes of 1997 through 1999 reflected some increase in the lower grades. This altered pattern is suggestive of a change in the underlying phenomenon, from the traditional cohort effect for cigarettes to some secular trending, as well. The data gathered from eighth-grade respondents also show some increase in lifetime prevalence from when they were first surveyed in 1991, through 1996; again, this increase was not observable when they were at lower grade levels—in fact, the lower grades showed some falloff in initiation rates in the late 1980s and early 1990s.

The important decline in teen smoking that began in the mid-1990s and continues today can be seen in the lower panel, based on responses from eighth-grade students. This chart also shows evidence of a secular trend, in that the sharp decline since 1996 at eighth grade is not much reflected in the data from these students when they were in earlier grades until the eighth grade class of 2002.

- Figure 6-23 presents the other smoking measure contained in the study, one included since its inception in 1975: lifetime prevalence of cigarette smoking “on a daily basis.” It shows that lifetime initiation rates for *daily smoking* began to peak at the lower grade levels in the early to mid-1970s. This peaking did not become apparent among high school seniors until some years later. In essence, these changes largely reflect cohort effects—patterns of change that emerge consistently across different class cohorts as they progress in age. Differences between cohorts in smoking at early ages tend to endure in later life, most likely due to the highly addictive nature of nicotine.

The classes of 1982 and 1983 showed some leveling of the previous decline in daily smoking, but the classes of 1984 through 1986 resumed the decline while the students were in earlier grade levels. The data from the classes of 1987 and 1988 showed another pause in the decline. As we have said, from the class of 1975 through the class of 1992, the predominant pattern of change observed was that of a cohort effect.<sup>64</sup> Each “bulge” or “dip” in the prevalence of use rate at a lower grade was echoed at higher grades as those same class cohorts passed through the higher grades. After 1992, however, a somewhat different pattern emerged—one more akin to a secular trend—in which all age groups moved in parallel during the same historical period. Figure 6-23 shows that all grade levels above sixth grade displayed a sharp increase in initiation rates from 1991 or 1992 through 1995 or 1996. The lower grades seem to be exhibiting the resumption of a cohort-effect pattern starting with the eighth-grade class of 1997. It should be noted that

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<sup>64</sup>This interpretation has been documented through multivariate analyses designed to separate and quantify secular trends, age effects, and cohort effects. See O’Malley, P. M., Bachman, J. G., & Johnston, L. D. (1988). Period, age, and cohort effects on substance use among young Americans: A decade of change, 1976-1986. *American Journal of Public Health*, 78, 1315-1321.

the presence of a secular trend effect does not necessarily negate the presence of a cohort effect; the two can co-occur. The class of 1998 was the first to show a leveling, when they were in the lower grades, and then a decline by the time they reached the upper grades. In the past few years, there appears to be somewhat of a downward secular trend observed in all grades.

- **Smokeless tobacco** use (Figure 6-24) was first asked of seniors in the class of 1986. The questions about prevalence of smokeless tobacco use were dropped from the 1990 and 1991 surveys of twelfth graders but reinstated in 1992. The 1986-1989 survey questions were located near the end of one form; the questions in 1992 were located in a different form and placed early in the form. As a result of the changed placement of the questions, the estimates based on the earlier version and the later version are not strictly comparable; therefore, it may be misleading to connect the two trend lines. Both sets of trend lines, however, clearly demonstrate that smokeless tobacco use also shows strong evidence of enduring cohort differences—or “cohort effects.”

There appears to have been a rise in smokeless tobacco use in classes prior to the class of 1986, but the trend reversed in the twelfth-grade classes following 1986 (see Figure 6-24). Decline seemed to continue in the classes of 1992 through 2002 (and quite possibly it was also present in the two missing classes—1990 and 1991—although we cannot say for certain). The lower panel in Figure 6-24 generally shows a pattern of continuing decline at the lower grade levels in more recent years, although there was a pause in the decline (from 1993 to 1996) just as there was among cohorts of twelfth graders in those years. The data from eighth graders also show a pause in the longer-term decline from 1993 through 1996, suggesting that an upward secular trend may have been occurring during that period, parallel to the one for cigarettes. In the twelfth grade cohorts of 2001 and 2002, a sharp decline in the initiation of smokeless tobacco is observed in all grades as these students progressed through the grades.

- Information on grade of first use for **steroids** was not gathered prior to 1989; therefore more limited trend information is available (Figure 6-25). However, it does show some of the pattern characteristics of cohort change predominating over secular trends. There was some decline in initiation between the classes of 1989 and 1991, followed by a leveling off.<sup>65</sup> Only a small amount of variation in initiation occurred among the eighth and tenth grades. The data from both eighth- and twelfth-grade students, however, show some increase in use in the more recent classes—an increase that looks more like a secular trend than a cohort effect. For the 2001 and 2002 eighth-grade classes, initiation showed some decline.

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<sup>65</sup>Note that the scale in Figure 6-25 has been enlarged considerably because the rates are so low. This has the effect of making small variations look larger.



TABLE 6-1

Incidence of Use for Various Drugs, by Grade  
Eighth Graders, 2002

(Entries are percentages)

Grade in which drug was first used:	Marijuana	Inhalants	Hallucinogens	LSD	Hallucinogens Other Than LSD	Cocaine	Crack	Cocaine Powder	Heroin	Amphetamines	Tranquilizers	Alcohol	Been Drunk	Cigarettes	Cigarettes (Daily) <sup>a</sup>	Smokeless Tobacco	Steroids
4th (or below)	1.1	3.6	0.3	0.1	0.2	0.3	0.2	0.2	0.2	0.3	0.3	6.8	1.2	7.3	0.5	2.6	0.2
5th	1.6	2.2	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.6	0.2	6.4	1.3	5.5	0.6	1.4	0.2
6th	3.7	3.4	0.8	0.5	0.6	0.6	0.4	0.5	0.2	1.4	0.6	9.8	3.4	7.2	1.5	2.0	0.4
7th	6.6	3.7	1.5	1.0	1.1	1.1	0.8	0.9	0.4	3.0	1.6	15.1	7.5	8.0	2.4	3.0	0.9
8th	6.3	2.2	1.3	0.8	1.2	1.3	1.0	1.1	0.6	3.4	1.6	9.0	7.8	3.5	1.7	2.2	0.8
Never used	80.8	84.8	95.9	97.5	96.7	96.4	97.5	97.2	98.4	91.3	95.7	53.0	78.7	68.6	93.3	88.8	97.5

NOTES: All drugs were asked about in all four forms except for the following: hallucinogens, LSD, heroin, amphetamines, tranquilizers, and smokeless tobacco, which were asked about in two forms only. The approximate N for all forms was 15,100.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Data based on the percentage of regular smokers (ever).

TABLE 6-2

Incidence of Use for Various Drugs, by Grade  
Tenth Graders, 2002

(Entries are percentages)

Grade in which drug was first used:	Marijuana	Inhalants	Hallucinogens	LSD	Hallucinogens Other Than LSD	Cocaine	Crack	Cocaine Powder	Heroin	Amphetamines	Tranquilizers	Alcohol	Been Drunk	Cigarettes	Cigarettes (Daily) <sup>a</sup>	Smokeless Tobacco	Steroids
4th (or below)	0.9	1.7	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.2	0.1	5.2	0.8	5.9	0.4	2.0	0.1
5th	1.0	1.2	0.1	0.0	0.0	0.1	0.0	0.1	0.0	0.1	0.1	3.0	0.8	5.7	0.5	1.3	0.0
6th	3.4	1.9	0.5	0.4	0.2	0.2	0.2	0.1	0.1	0.6	0.4	6.7	2.4	7.9	1.3	1.8	0.1
7th	5.9	2.7	1.1	0.7	0.9	0.5	0.4	0.5	0.2	1.4	1.1	11.5	5.9	9.3	2.4	2.0	0.3
8th	9.3	2.3	1.8	1.3	1.2	1.0	0.6	0.8	0.3	3.5	2.1	16.4	10.9	8.5	3.0	3.2	0.7
9th	12.3	2.3	3.2	1.9	2.7	2.3	1.2	2.0	0.7	5.9	3.4	17.5	15.2	7.4	3.7	4.5	1.3
10th	6.0	1.3	1.1	0.6	1.1	1.8	1.0	1.6	0.3	3.2	1.7	6.6	8.0	2.8	2.2	2.1	0.8
Never used	61.3	86.5	92.2	95.0	93.7	93.9	96.4	94.8	98.2	85.1	91.2	33.1	56.0	52.6	86.5	83.1	96.5

NOTES: All drugs were asked about in all four forms except for the following: hallucinogens, LSD, heroin, amphetamines, tranquilizers, and smokeless tobacco, which were asked about in two forms only. The approximate N for all forms was 14,300.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Data based on the percentage of regular smokers (ever).

TABLE 6-3

Incidence of Use for Various Drugs, by Grade  
Twelfth Graders, 2002

(Entries are percentages)

Grade in which drug was first used:	Any Illicit Drug	Any Illicit Drug Other than Marijuana	Marijuana	Inhalants <sup>a</sup>	Amyl/Butyl Nitrites	Hallucinogens <sup>a</sup>	LSD	Hallucinogens Other Than LSD	PCP	Cocaine	Crack	Other Forms of Cocaine	Heroin	Other Narcotics	Amphetamines <sup>b</sup>	Barbiturates	Methaqualone	Tranquilizers	Alcohol	Been Drunk	Cigarettes	Cigarettes (Daily) <sup>c</sup>	Smokeless Tobacco	Steroids	
6th (or below)	3.6	1.2	2.9	1.2	0.4	0.2	0.1	0.1	0.4	0.3	0.3	0.4	0.1	0.4	0.1	0.1	0.2	6.7	2.0	14.7	1.5	2.9	0.2		
7-8th	13.2	5.5	11.6	3.8	0.1	2.5	2.0	1.3	0.4	0.9	0.6	0.5	0.2	1.2	1.9	1.7	0.4	1.6	20.9	13.4	21.3	5.4	3.9	0.4	
9th	12.3	6.5	11.3	2.3	0.5	2.7	2.1	2.1	0.5	1.0	0.4	0.9	0.2	1.5	4.3	2.6	0.3	2.5	19.3	15.7	9.2	4.6	3.6	0.3	
10th	10.3	7.4	9.6	1.5	0.2	2.8	2.1	2.3	0.8	1.8	0.9	1.5	0.2	3.3	4.2	2.2	0.2	2.7	13.5	13.5	5.5	4.0	3.0	0.9	
11th	8.4	4.8	7.7	1.2	0.3	2.4	1.4	1.9	0.4	1.8	0.8	1.9	0.4	1.7	4.3	1.7	0.3	2.5	11.6	10.7	4.1	3.1	2.8	1.2	
12th	5.2	4.2	4.7	1.6	0.1	1.5	0.7	1.6	0.5	2.0	0.8	1.8	0.5	2.0	1.6	1.2	0.1	2.0	6.3	6.3	2.3	1.9	1.9	1.0	
Never used	47.0	70.5	52.2	88.3	98.5	88.0	91.6	90.8	96.9	92.2	96.2	93.0	98.3	89.9	83.2	90.5	98.5	88.6	21.6	38.4	42.8	79.5	81.7	96.0	

NOTES: Percentages are based on two of the six forms (N=approximately 4,300) except for cocaine, crack, and cigarettes, for which percentages are based on three of the six forms (N=approximately 6,500), and inhalants, nitrites, PCP, other forms of cocaine, and steroids, for which percentages are based on one of the six forms (N=approximately 2,200).

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Unadjusted for known underreporting of certain drugs. See text for details.

<sup>b</sup>Based on the data from the revised question, which attempts to exclude the inappropriate reporting of nonprescription amphetamines.

<sup>c</sup>Data based on the percentage of regular smokers (ever).

TABLE 6-4

Incidence of Use for Various Drugs: A Comparison of Responses from Eighth, Tenth, and Twelfth Graders, 2002

(Entries are percentages)

Grade level of respondents:	Marijuana	Inhalants <sup>a</sup>	Hallucinogens <sup>a</sup>	LSD	Hallucinogens Other Than LSD	Cocaine	Crack	Other Cocaine	Heroin	Amphetamines <sup>b</sup>	Tranquilizers	Alcohol	Been Drunk	Cigarettes	Cigarettes (Daily) <sup>c</sup>	Smokeless Tobacco	Steroids
	Percentage who used by end of 6th grade																
8th	6.4	9.2	1.3	0.7	1.0	1.1	0.8	0.8	0.5	2.3	1.2	23.0	5.9	20.0	2.5	6.0	0.8
10th	5.2	4.9	0.7	0.5	0.3	0.5	0.4	0.3	0.2	0.9	0.6	14.9	4.1	19.4	2.2	5.1	0.3
12th	2.9	1.2	0.2	0.1	0.1	0.3	0.3	0.4	0.1	0.4	0.2	6.7	2.0	14.7	1.5	2.9	0.2
Percentage who used by end of 8th grade																	
8th	19.2	15.2	4.1	2.5	3.3	3.6	2.5	2.8	1.6	8.7	4.3	47.0	21.3	31.4	6.7	11.2	2.5
10th	20.4	10.0	3.6	2.5	2.5	2.0	1.4	1.6	0.8	5.8	3.8	42.8	20.8	37.2	7.6	10.3	1.3
12th	14.5	5.0	2.6	2.1	1.3	1.2	0.8	0.9	0.3	2.4	1.8	27.6	15.4	36.0	6.9	6.9	0.5
Percentage who used by end of 10th grade																	
10th	38.7	13.5	7.8	5.0	6.3	6.1	3.6	5.2	1.8	14.9	8.8	66.9	44.0	47.4	13.5	16.9	3.5
12th	35.4	8.8	8.1	6.3	5.7	4.0	2.1	3.3	0.8	10.9	7.0	60.5	44.6	50.8	15.5	13.5	1.8

NOTES: For 8th and 10th graders, all drugs were asked about in all four forms except for the following: hallucinogens, LSD, heroin, amphetamines, tranquilizers, and smokeless tobacco, which were asked about in two forms only. The approximate N for all forms for 8th graders was 15,100 and for 10th graders was 14,300. For 12th graders, percentages are based on two of the six forms (N=approximately 4,300) except for cocaine, crack, and cigarettes, for which percentages are based on three of the six forms (N=approximately 6,500), and inhalants, nitrites, PCP, other forms of cocaine, and steroids, for which percentages are based on one of the six forms (N=approx. 2,200).

SOURCE: The Monitoring the Future Study, the University of Michigan.

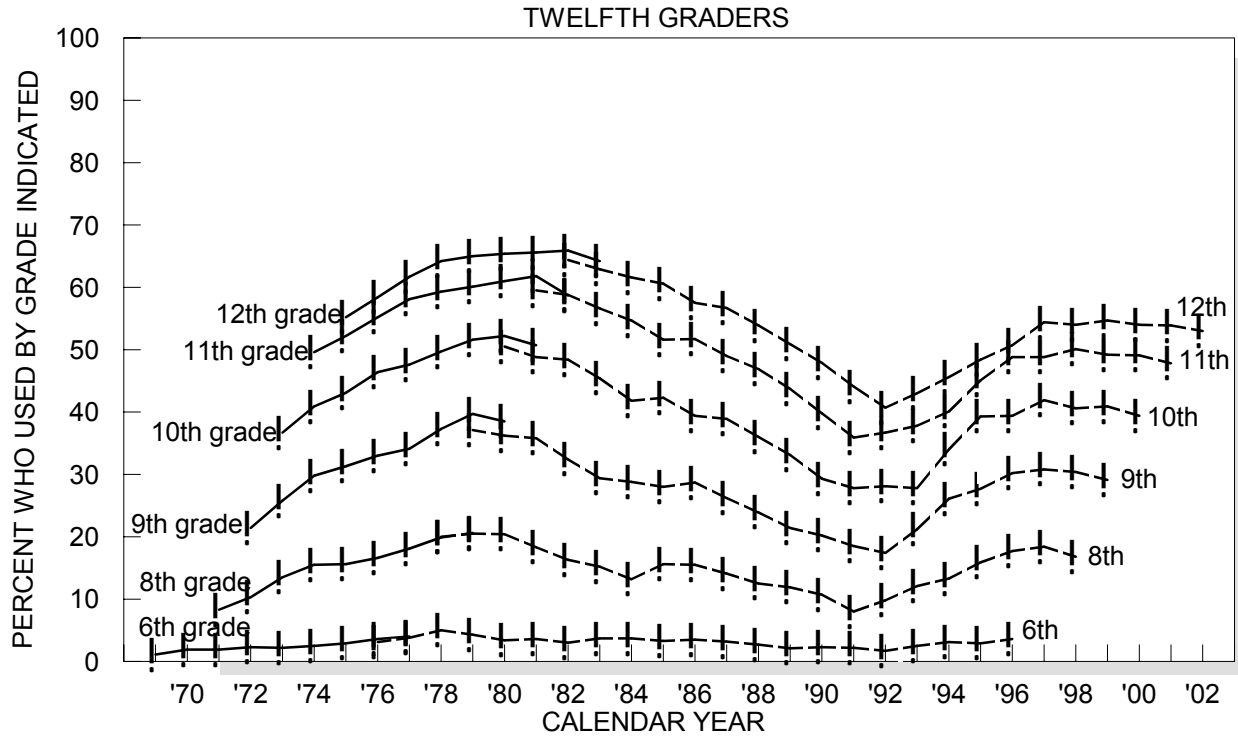
<sup>a</sup>Unadjusted for underreporting of certain drugs. See text for details.

<sup>b</sup>Based on data from the revised question, which attempts to exclude the inappropriate reporting of nonprescription amphetamines.

<sup>c</sup>Data based on the percentage of regular smokers (ever).

FIGURE 6-1

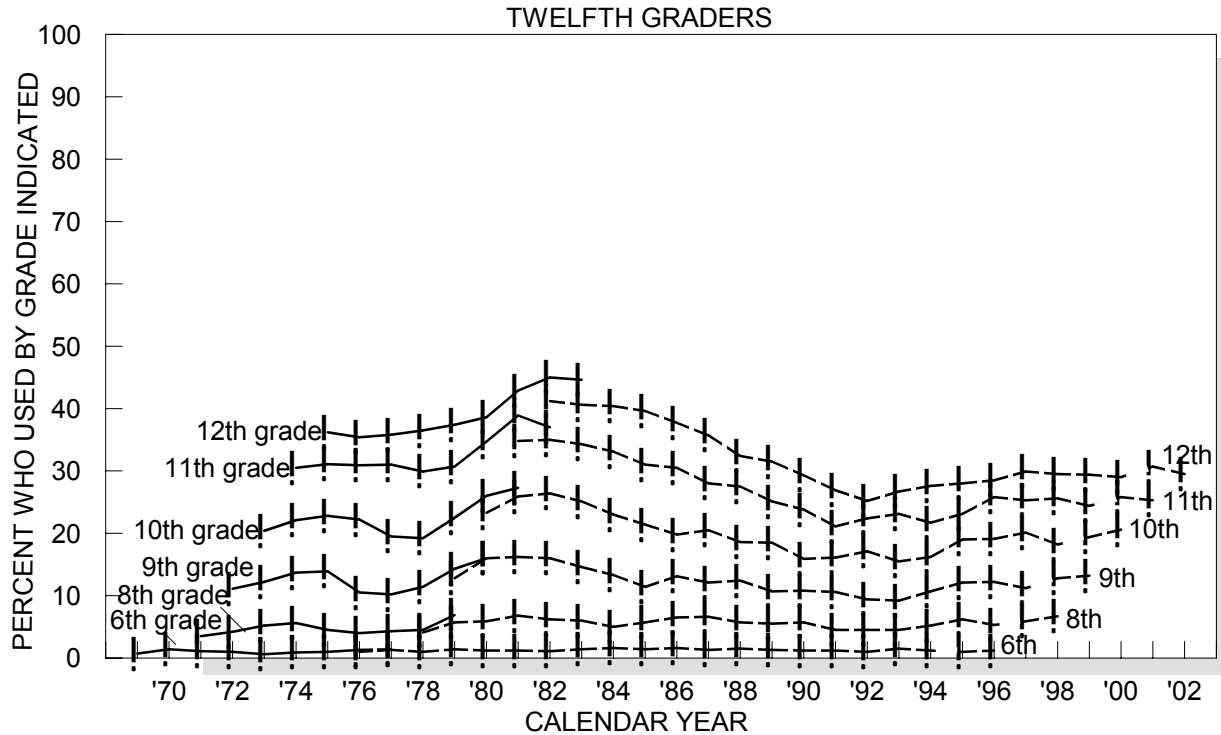
**Use of Any Illicit Drug: Trends in Lifetime  
Prevalence for Earlier Grade Levels**  
Based on Retrospective Reports from Twelfth Graders



NOTE: The dashed lines connect percentages which result if nonprescription stimulants are excluded.

FIGURE 6-2

**Use of Any Illicit Drug Other than Marijuana:  
Trends in Lifetime Prevalence for Earlier Grade Levels  
Based on Retrospective Reports from Twelfth Graders**



NOTES: The dashed lines connect percentages which result if nonprescription stimulants are excluded.

Beginning in 2001, revised sets of questions on other hallucinogen and tranquilizer use were introduced. Data for "any illicit other than marijuana" are affected by these changes. Beginning in 2001, the dashed lines also connect percentages that are based on data from the revised questions.

FIGURE 6-3

**Use of Any Illicit Drug Other than Marijuana or Amphetamines:  
Trends in Lifetime Prevalence for Earlier Grade Levels**  
Based on Retrospective Reports from Twelfth Graders

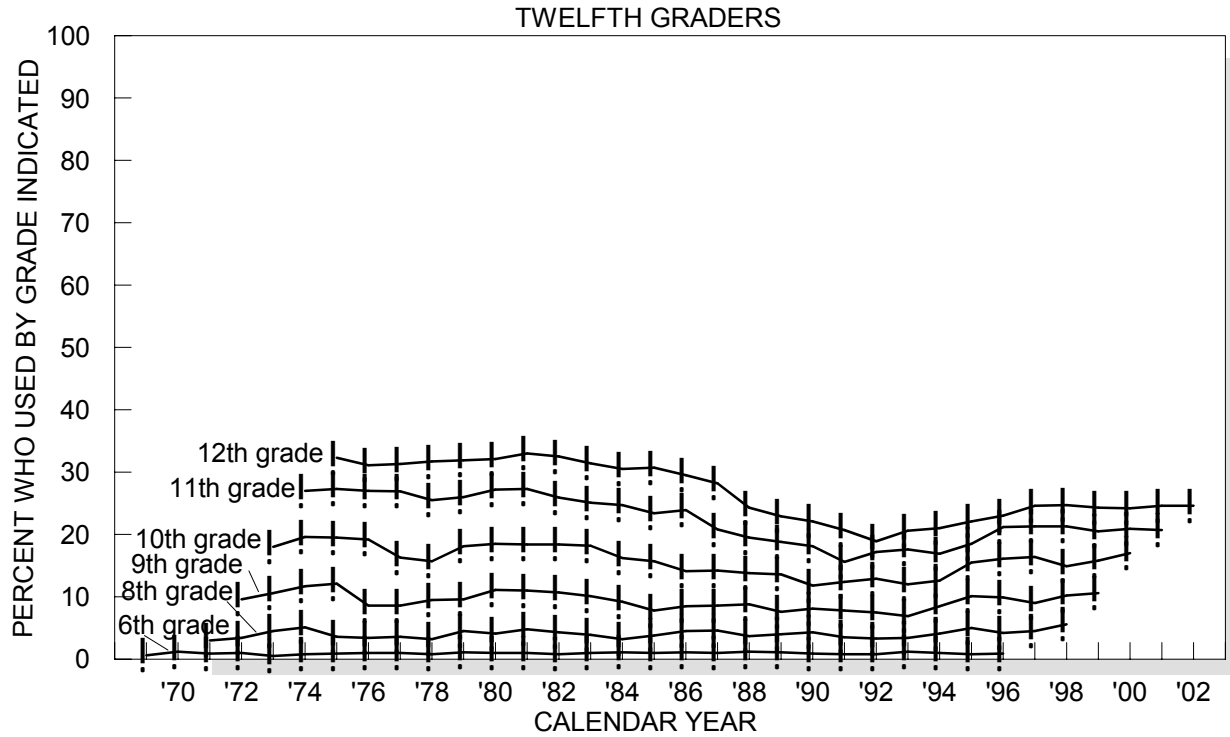


FIGURE 6-4

**Marijuana: Trends in Lifetime Prevalence for Earlier Grade Levels**  
Based on Retrospective Reports from Twelfth and Eighth Graders

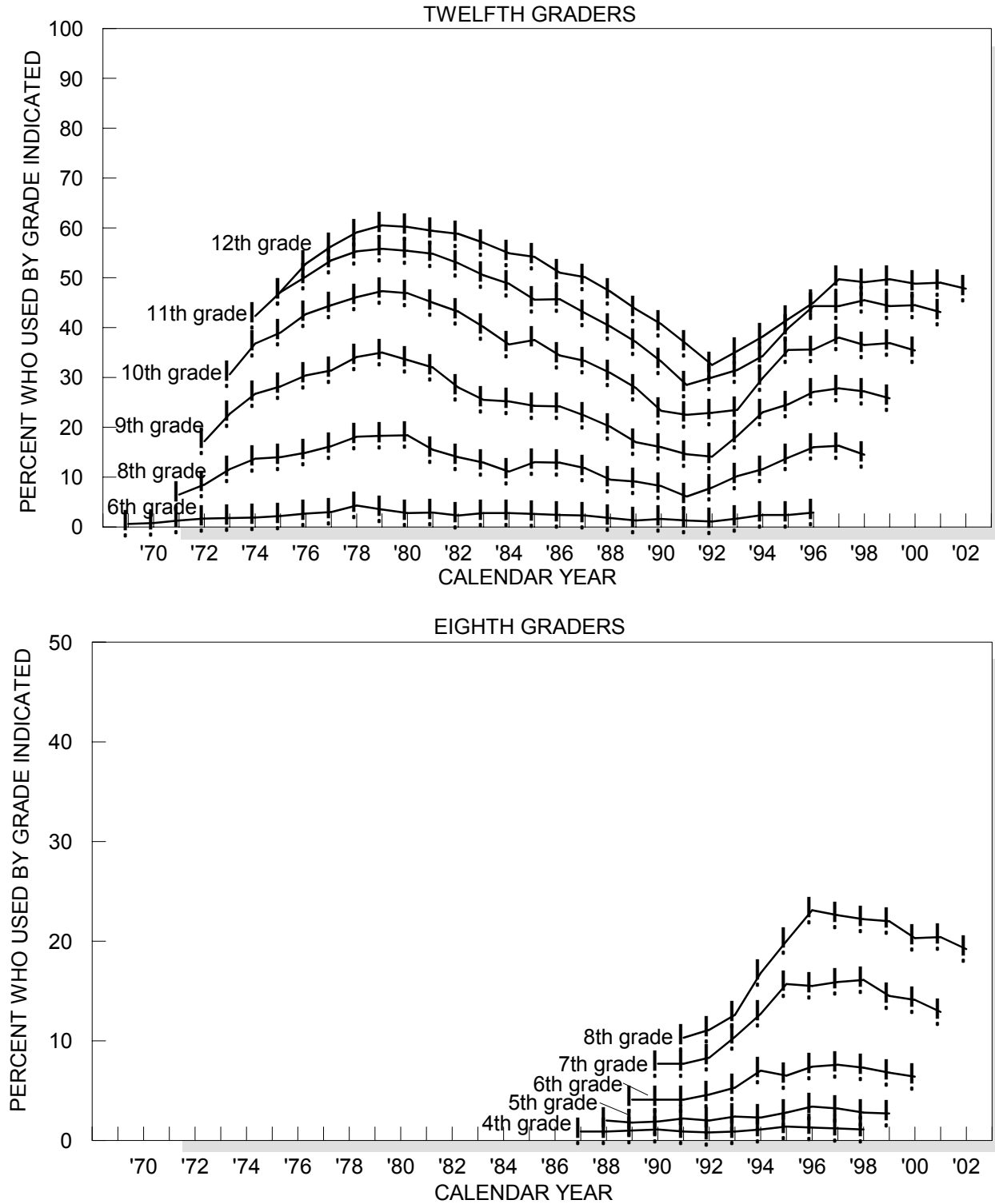




FIGURE 6-5

**Inhalants: Trends in Lifetime Prevalence for Earlier Grade Levels  
Based on Retrospective Reports from Twelfth and Eighth Graders**

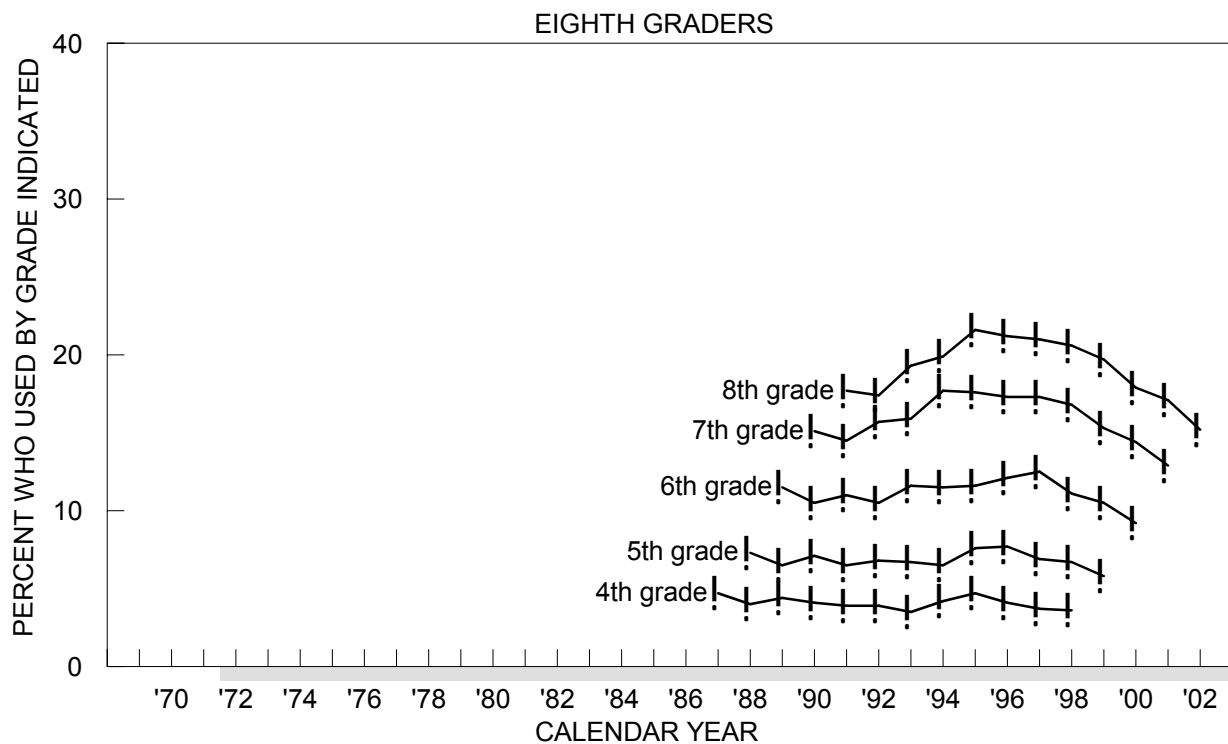
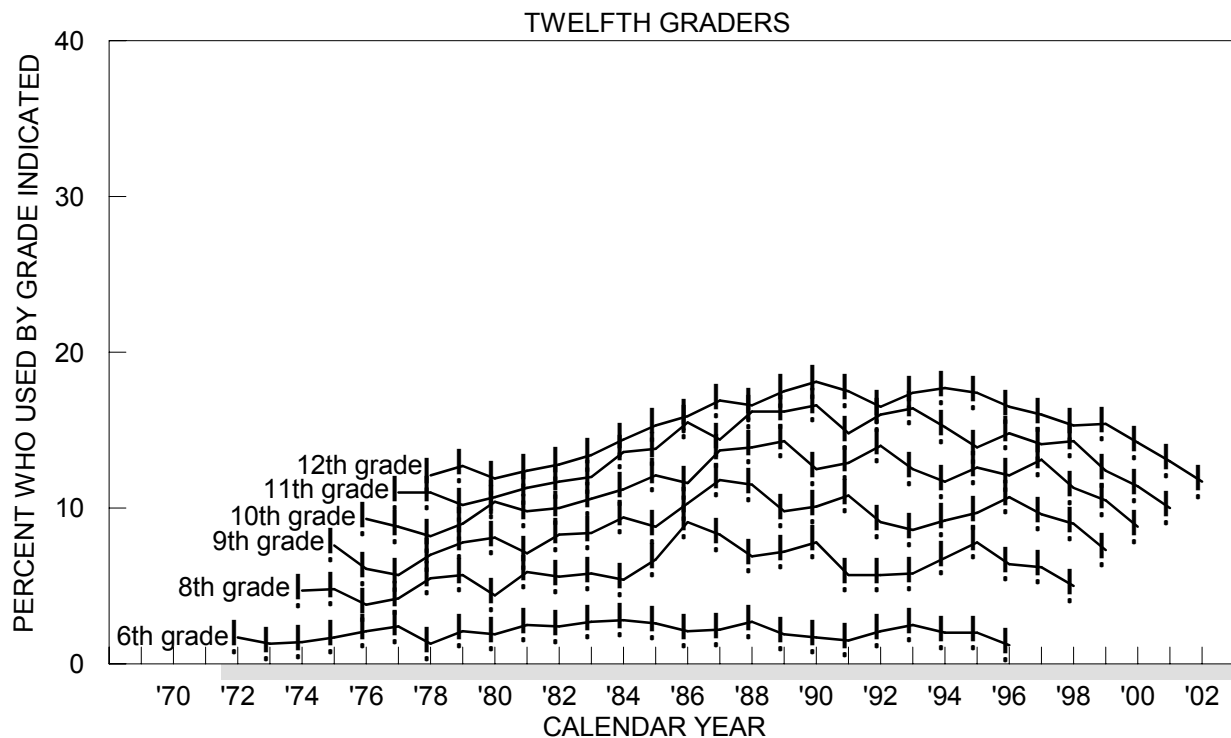


FIGURE 6-6

**Nitrites: Trends in Lifetime Prevalence for Earlier Grade Levels**  
Based on Retrospective Reports from Twelfth Graders

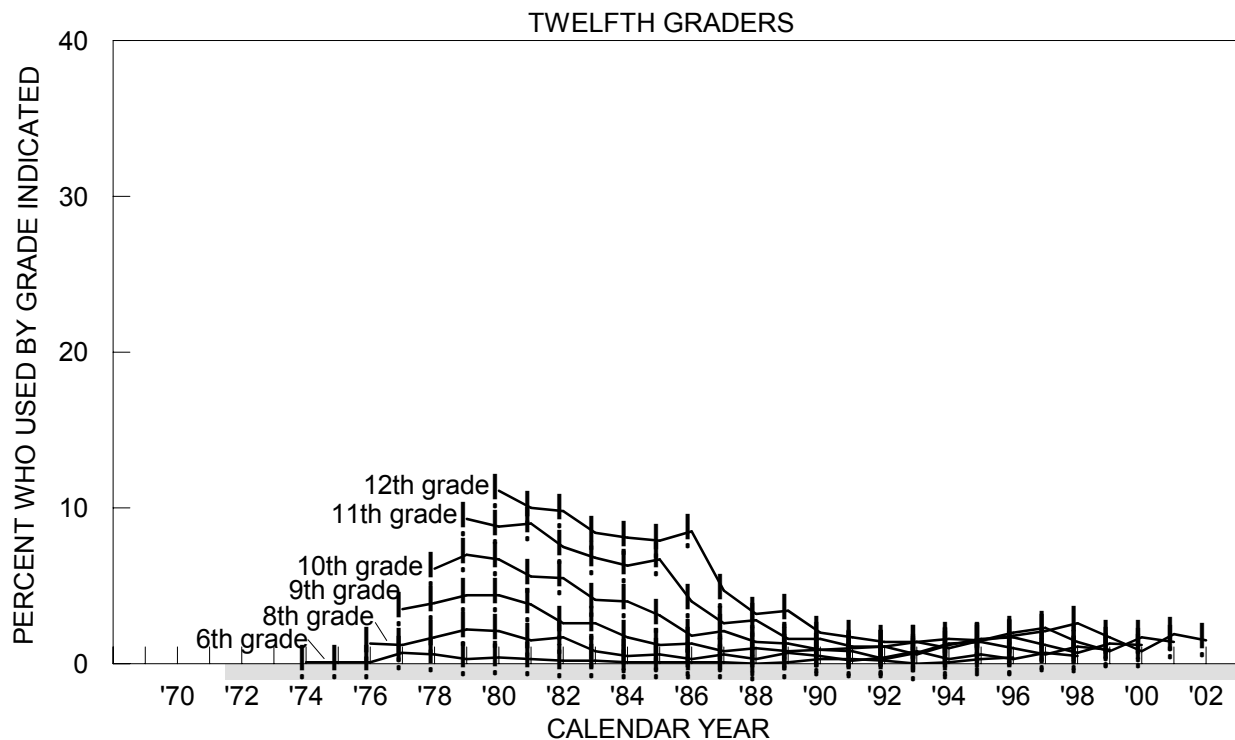
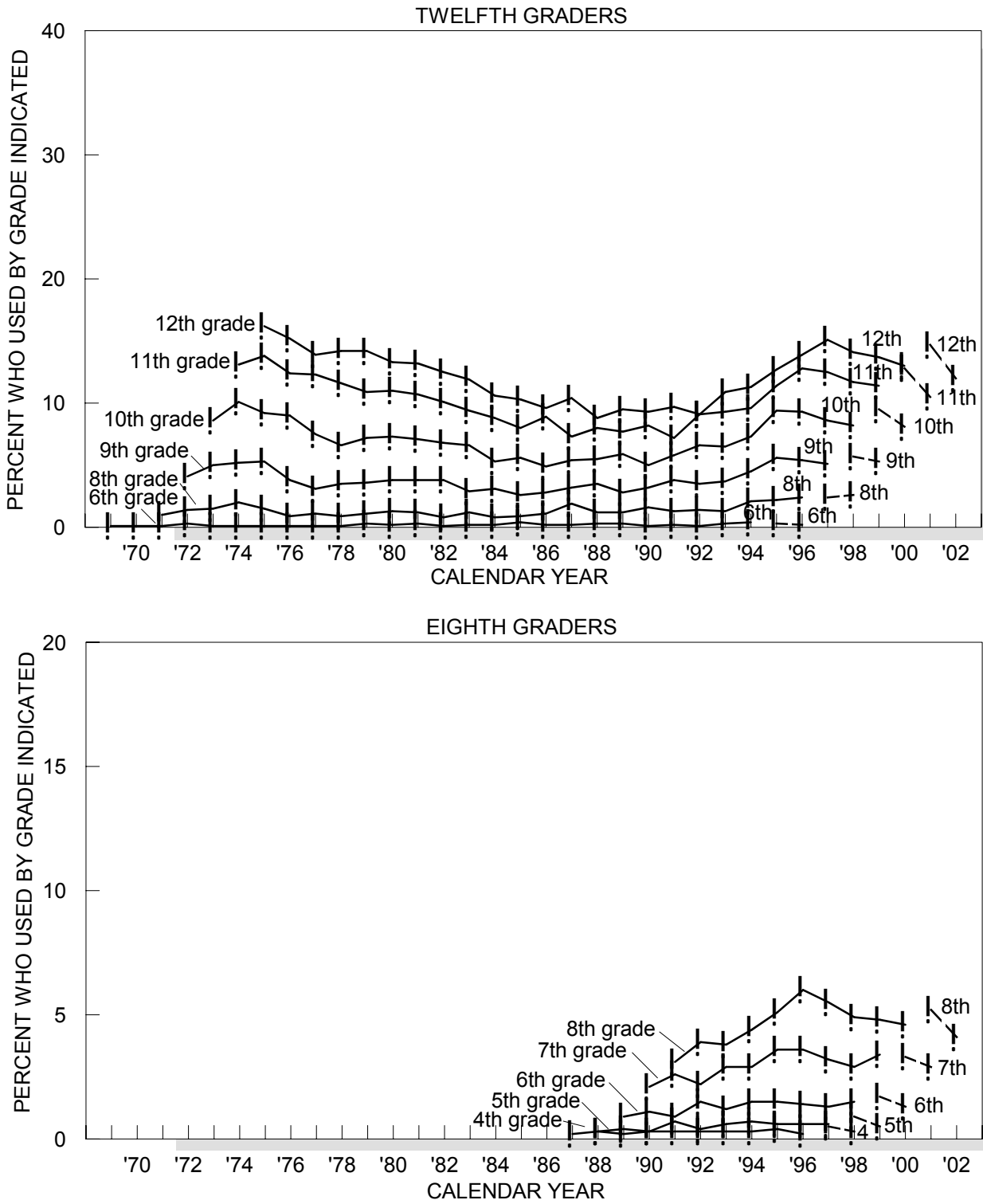


FIGURE 6-7

**Hallucinogens: Trends in Lifetime Prevalence for Earlier Grade Levels**  
Based on Retrospective Reports from Twelfth and Eighth Graders



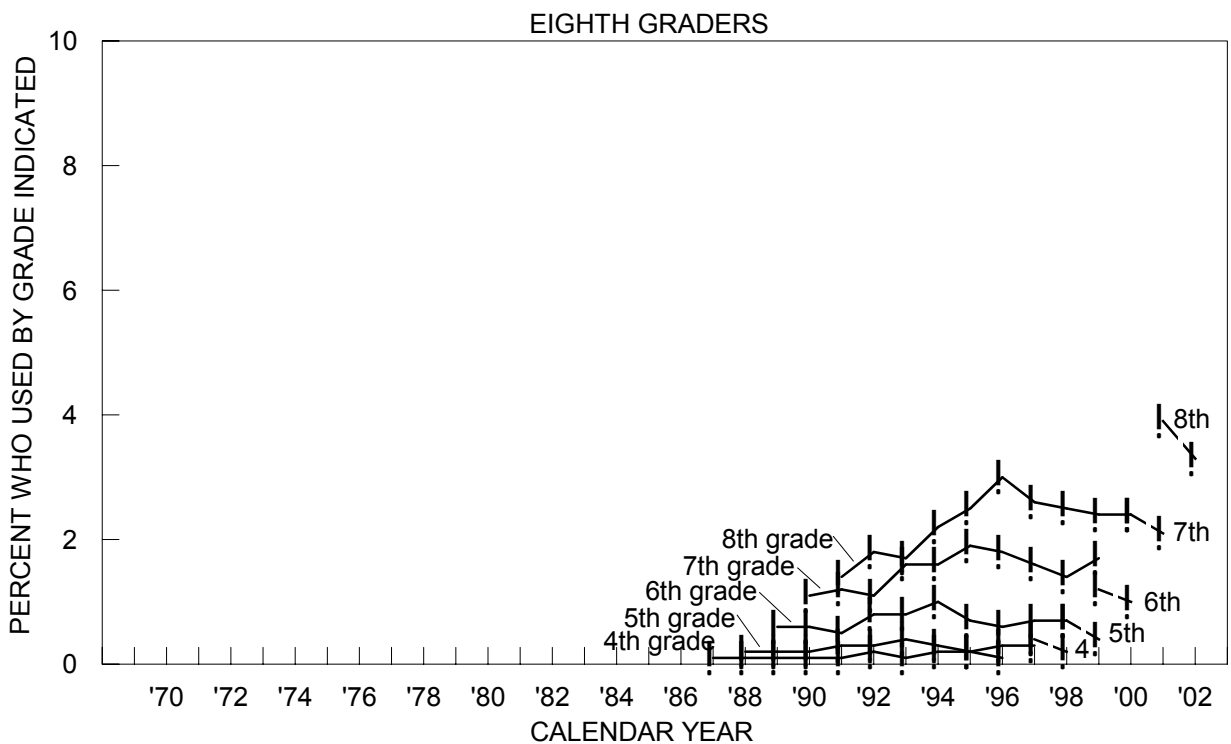
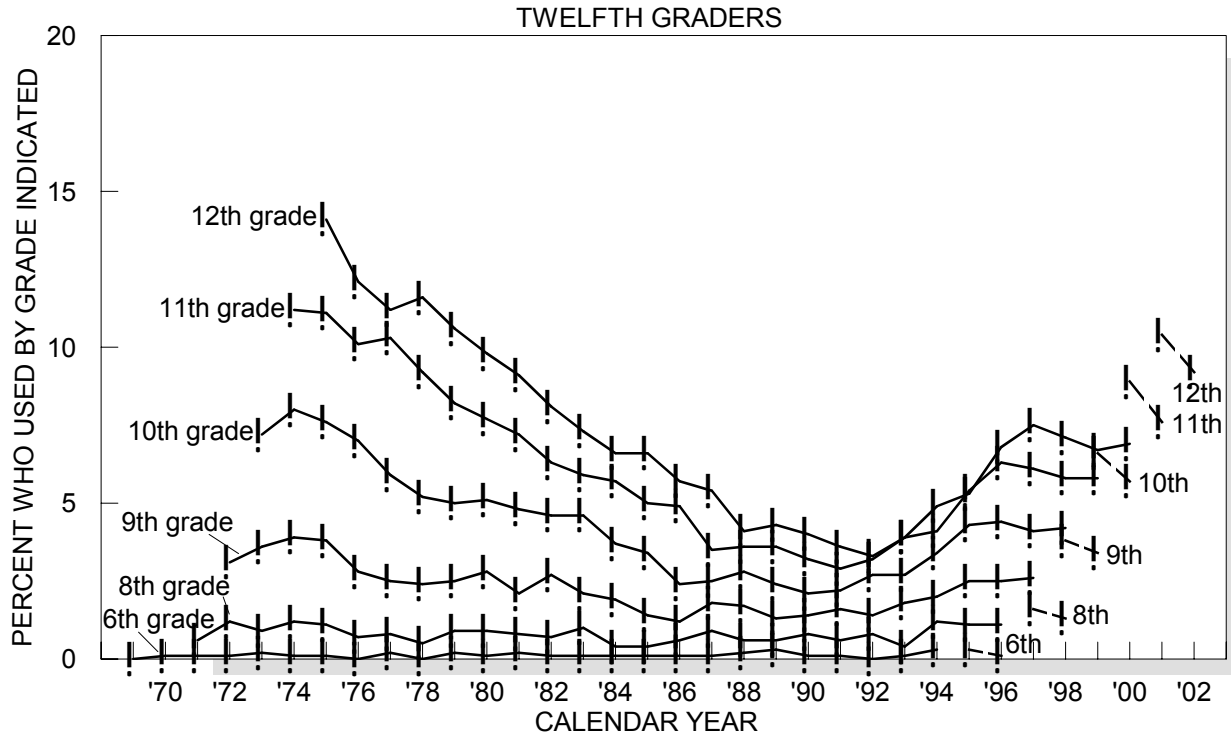
NOTES: Hallucinogens **unadjusted** for any underreporting of PCP are graphed here. Beginning in 2001, a revised set of questions on other hallucinogen use were introduced. Data for "hallucinogens" are affected by these changes. The dashed lines connect percentages that are based on data from the revised questions.



FIGURE 6-9

**Hallucinogens Other Than LSD: Trends in Lifetime Prevalence  
for Earlier Grade Levels**

Based on Retrospective Reports from Twelfth Graders



NOTE: Beginning in 2001, a revised set of questions on "hallucinogens other than LSD" was introduced, in which "other psychedelics" was changed to "other hallucinogens" and "shrooms" was added to the list of examples. The dashed lines connect percentages that are based on data from the revised questions.



FIGURE 6-11

**Cocaine: Trends in Lifetime Prevalence for Earlier Grade Levels**  
Based on Retrospective Reports from Twelfth and Eighth Graders

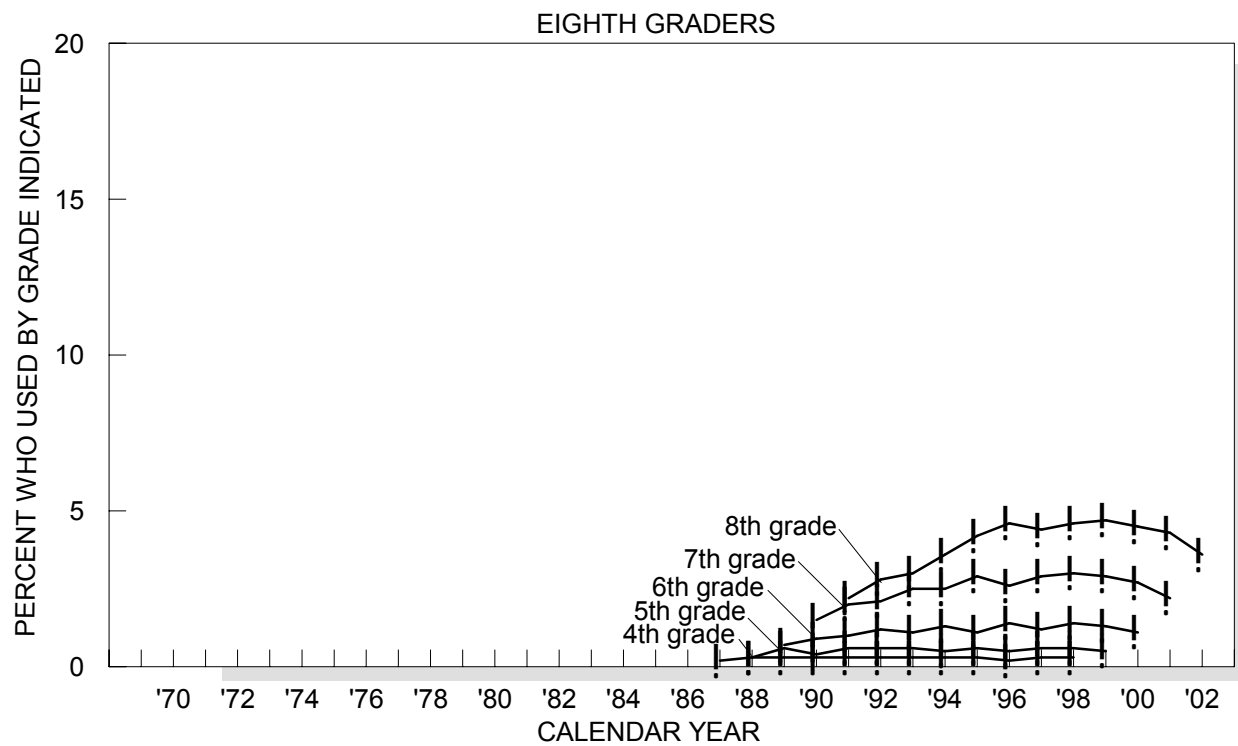
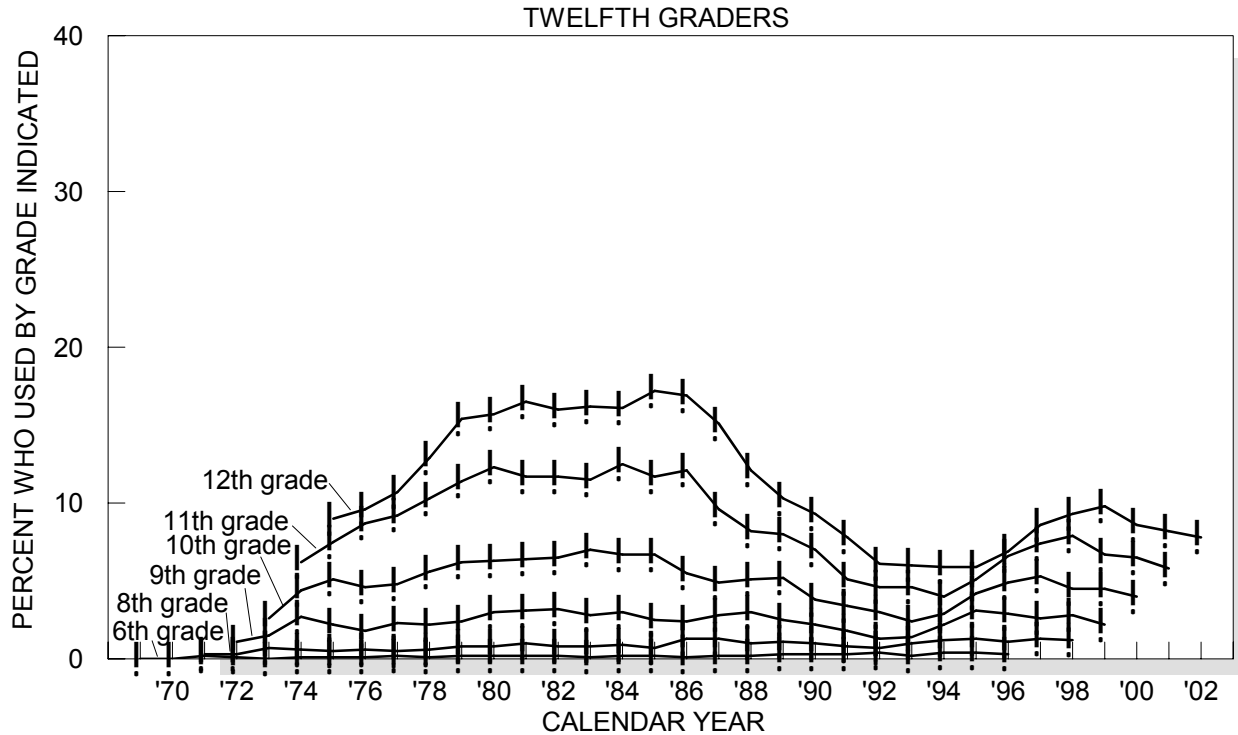


FIGURE 6-12

**Crack Cocaine: Trends in Lifetime Prevalence for Earlier Grade Levels**  
Based on Retrospective Reports from Twelfth and Eighth Graders

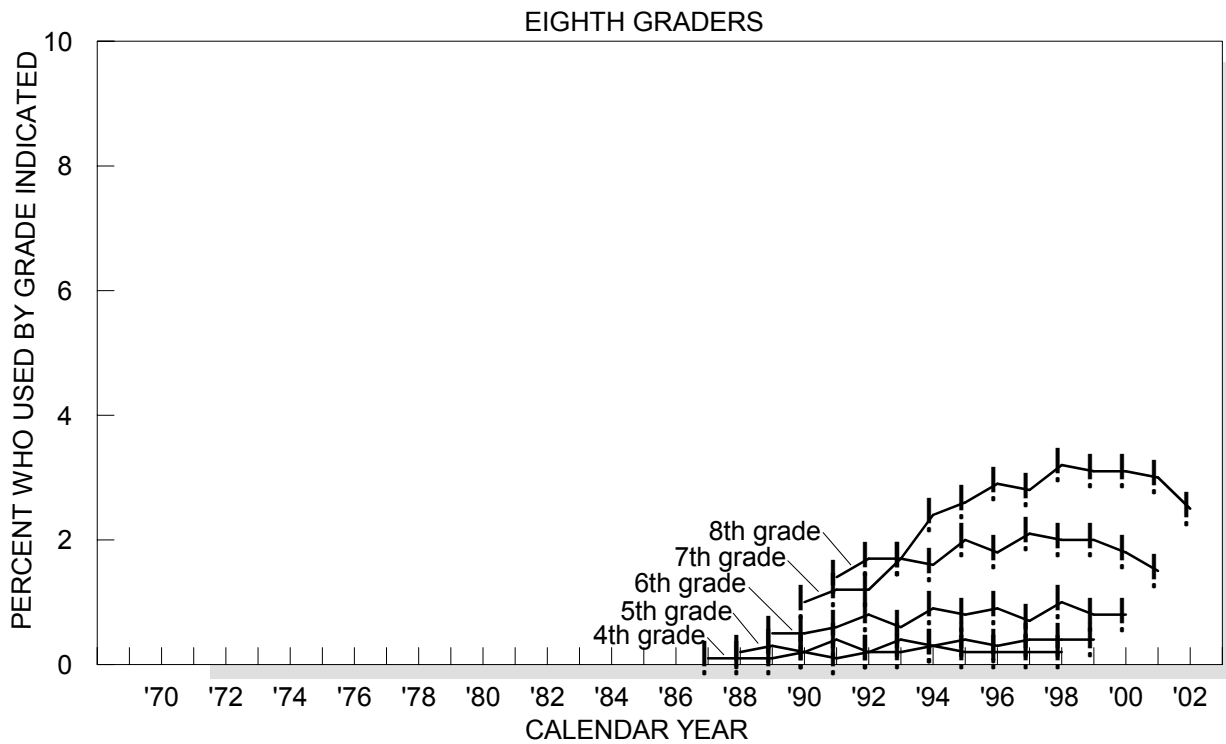
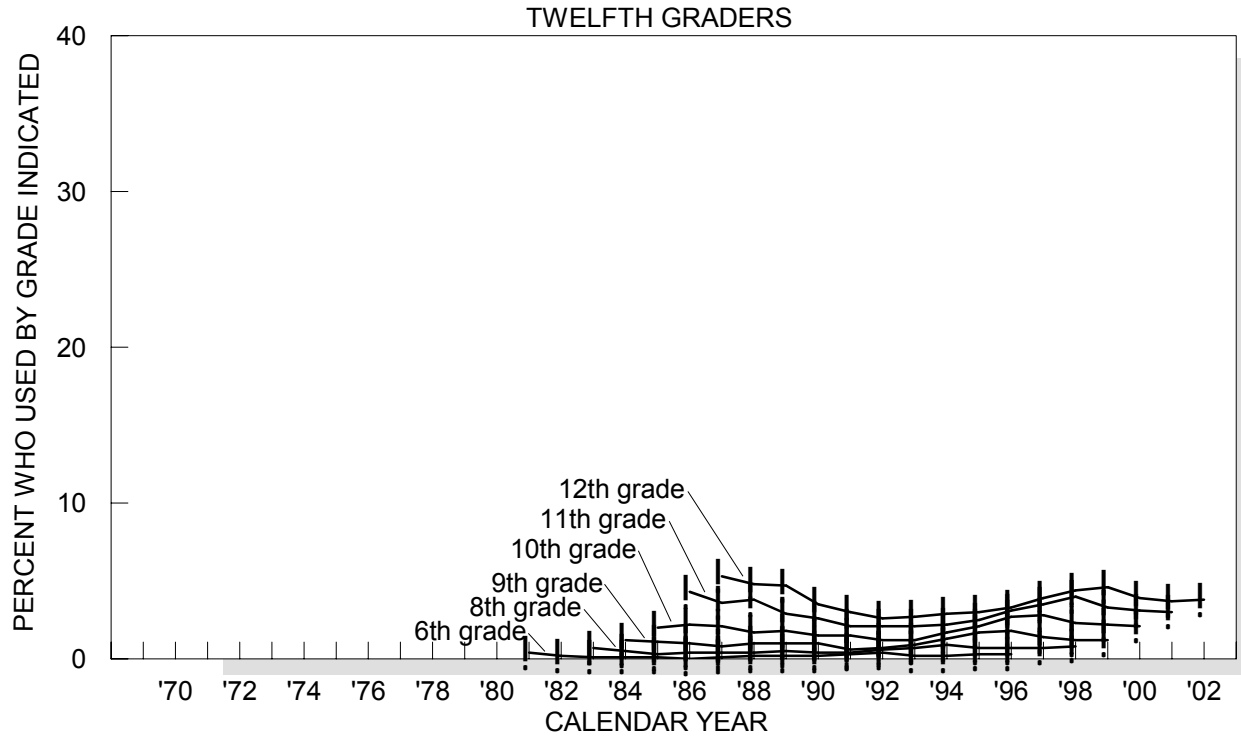
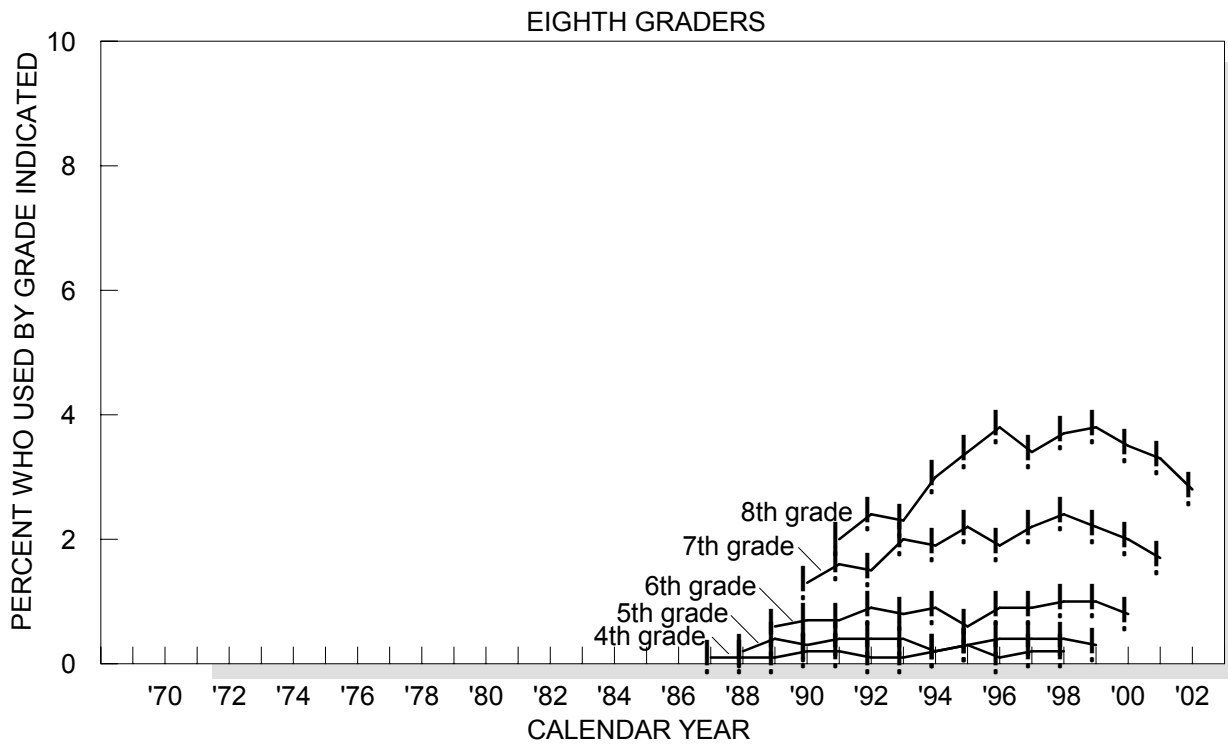
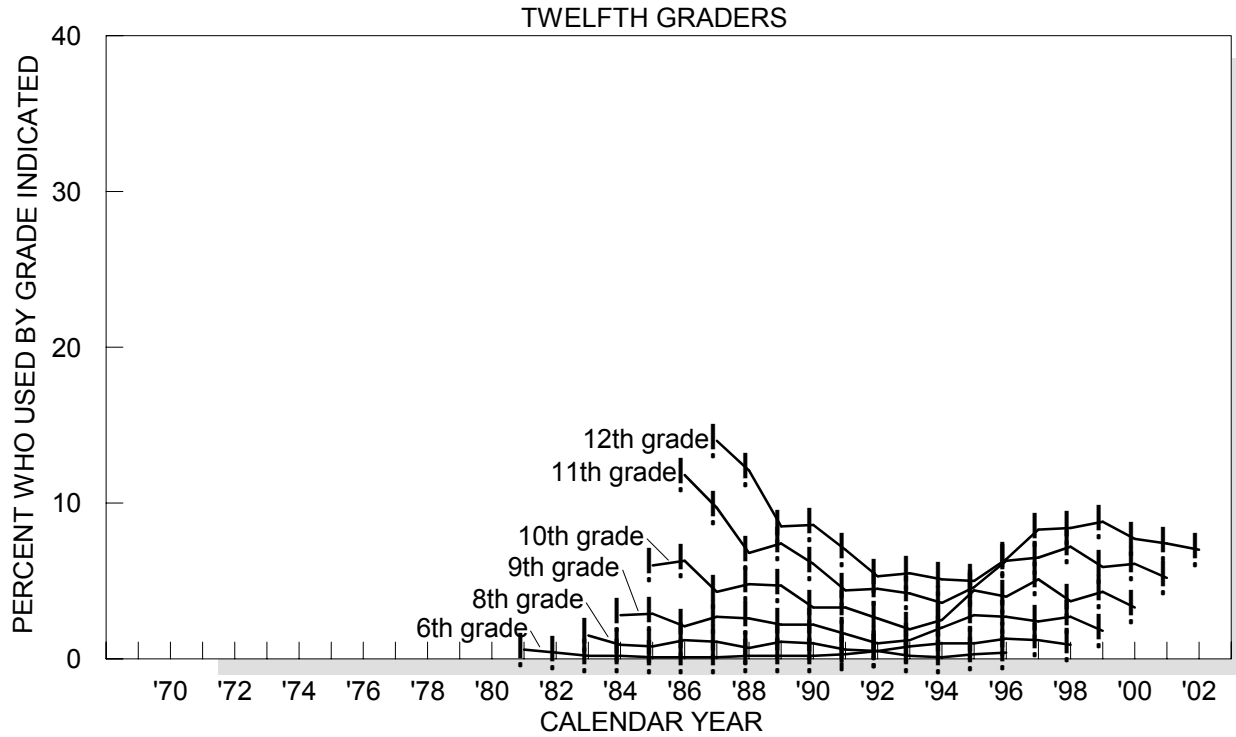




FIGURE 6-13

**Other Forms of Cocaine: Trends in Lifetime Prevalence for Earlier Grade Levels  
Based on Retrospective Reports from Twelfth and Eighth Graders**



NOTE: The eighth grade question asked about cocaine in powder form.

FIGURE 6-14

**Heroin: Trends in Lifetime Prevalence for Earlier Grade Levels  
Based on Retrospective Reports from Twelfth and Eighth Graders**

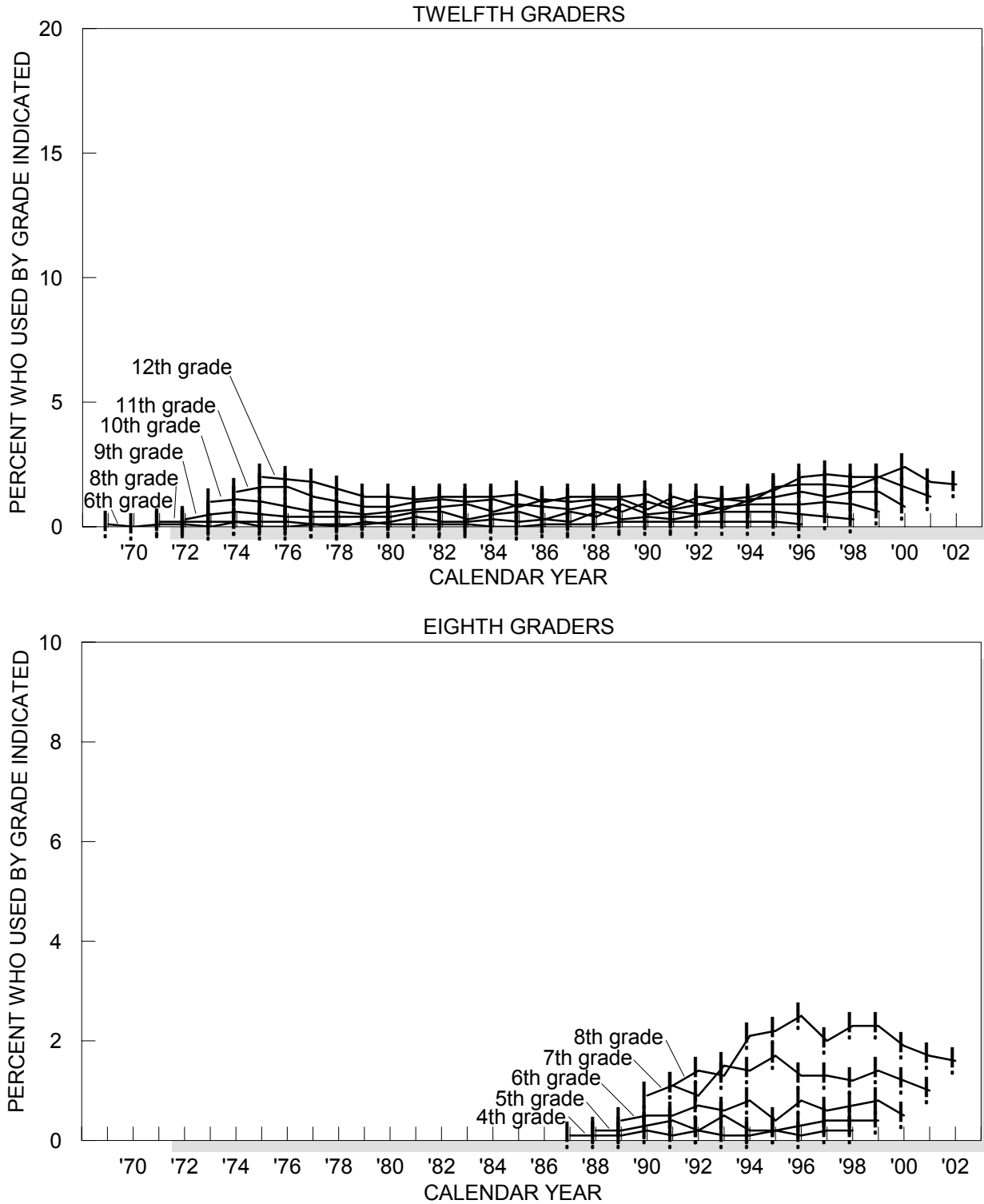


FIGURE 6-15

**Narcotics Other than Heroin: Trends in Lifetime Prevalence  
for Earlier Grade Levels**

Based on Retrospective Reports from Twelfth Graders

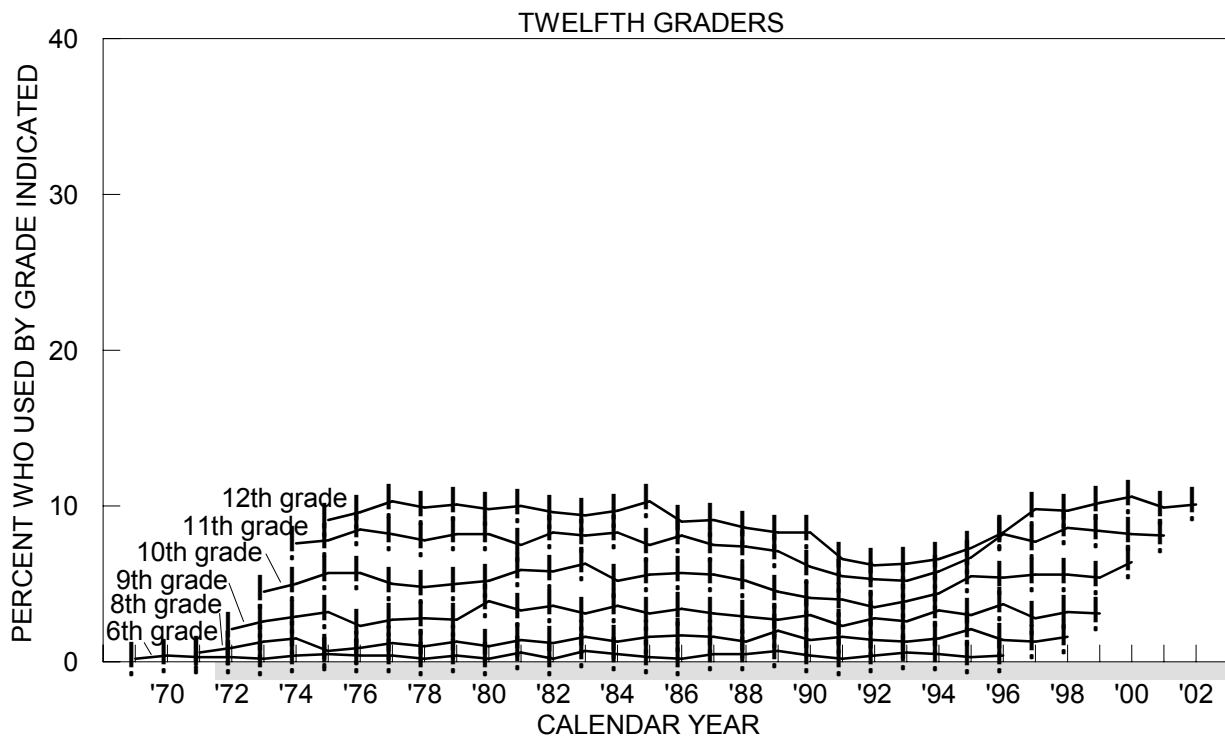
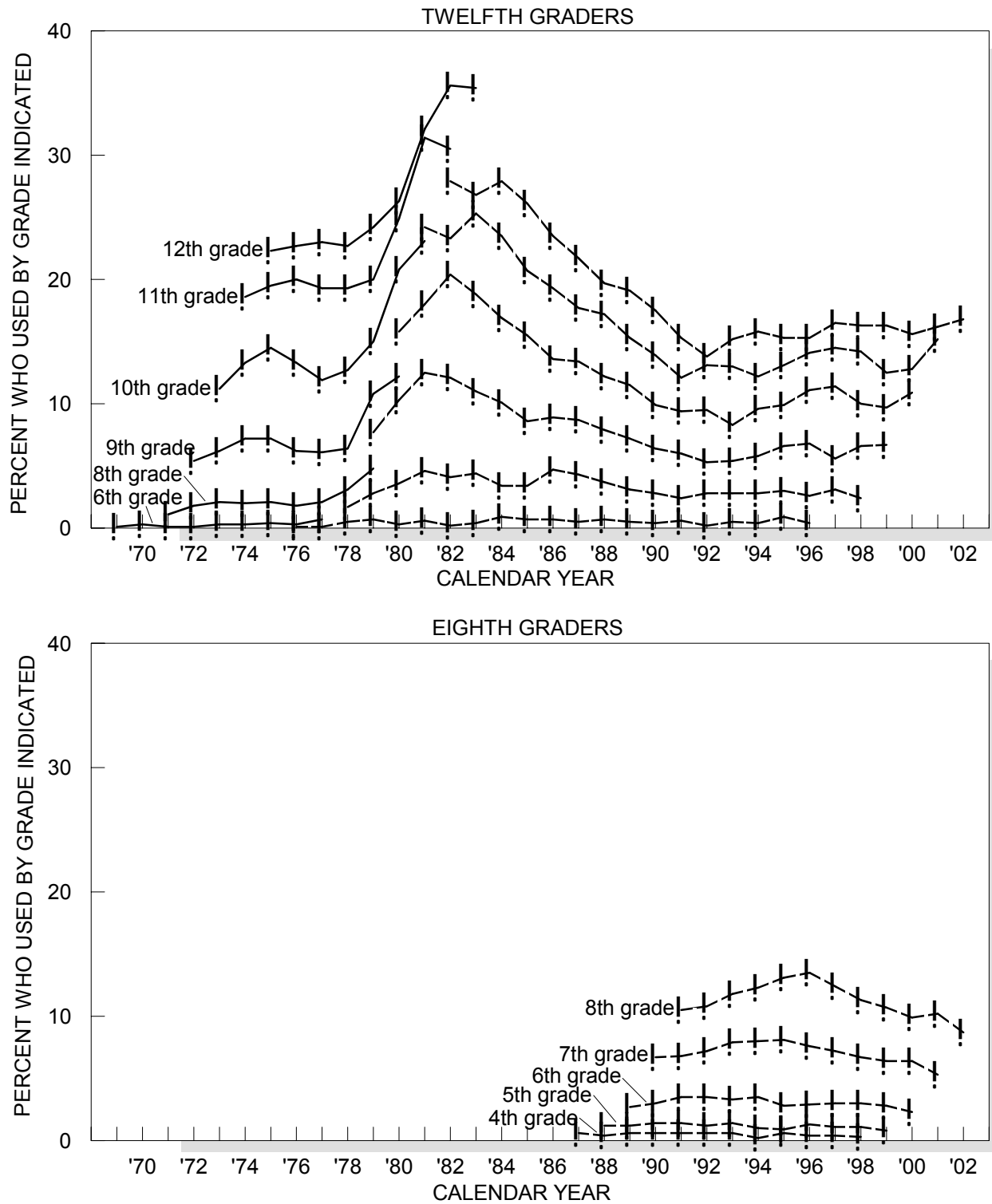


FIGURE 6-16

**Amphetamines: Trends in Lifetime Prevalence for Earlier Grade Levels  
Based on Retrospective Reports from Twelfth and Eighth Graders**



NOTE: The dashed lines connect percentages which result if nonprescription stimulants are excluded.

FIGURE 6-17

**Sedatives (Barbiturates): Trends in Lifetime Prevalence for Earlier Grade Levels  
Based on Retrospective Reports from Twelfth Graders**

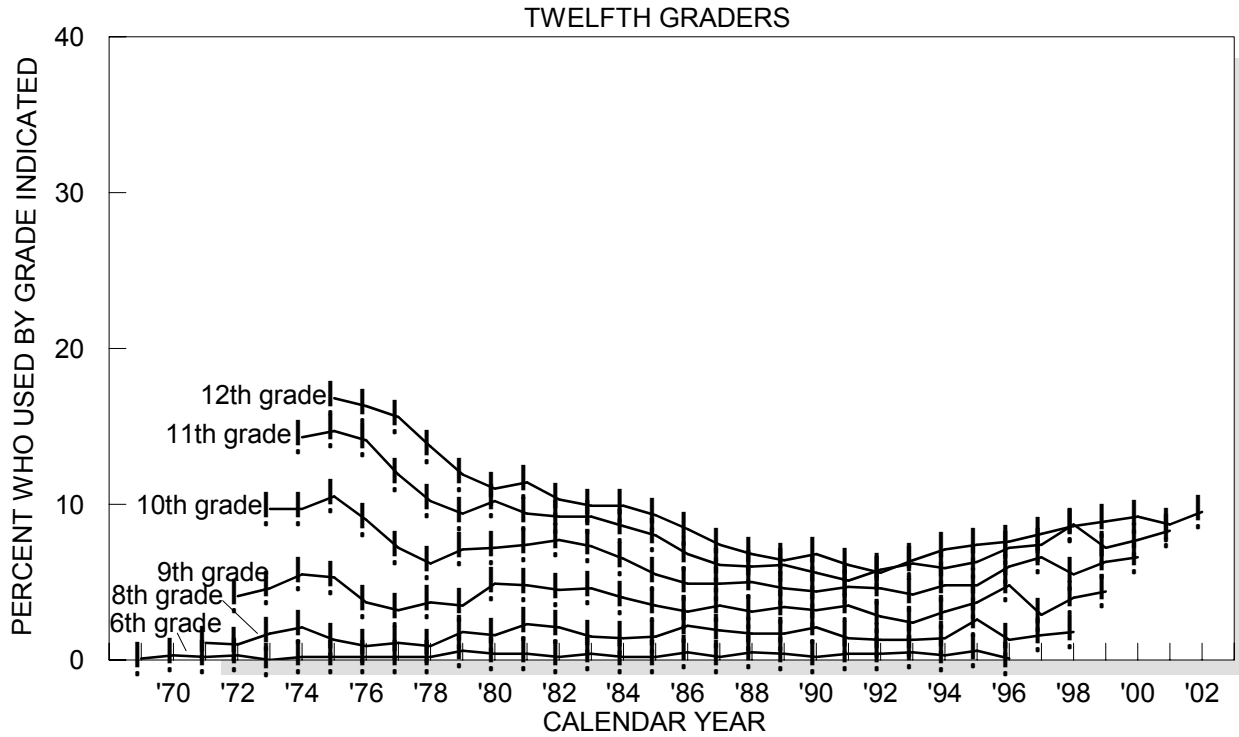


FIGURE 6-18

**Methaqualone: Trends in Lifetime Prevalence for Earlier Grade Levels**  
Based on Retrospective Reports from Twelfth Graders

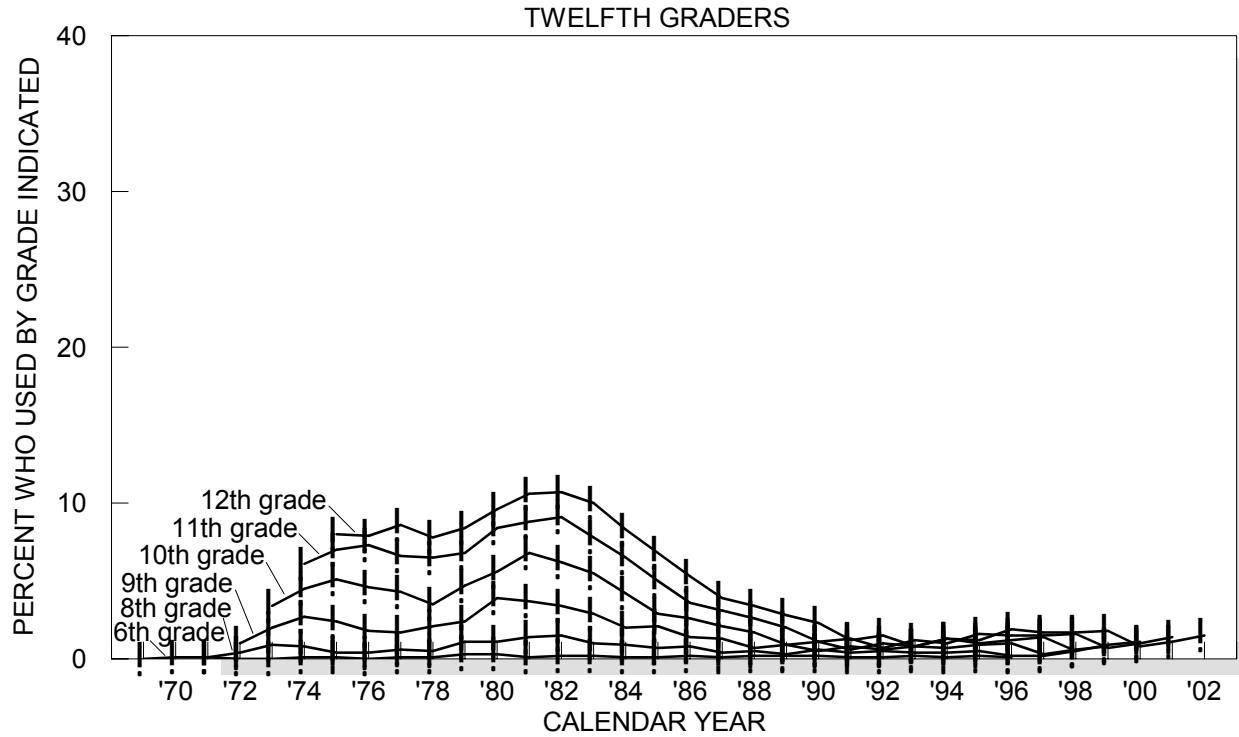
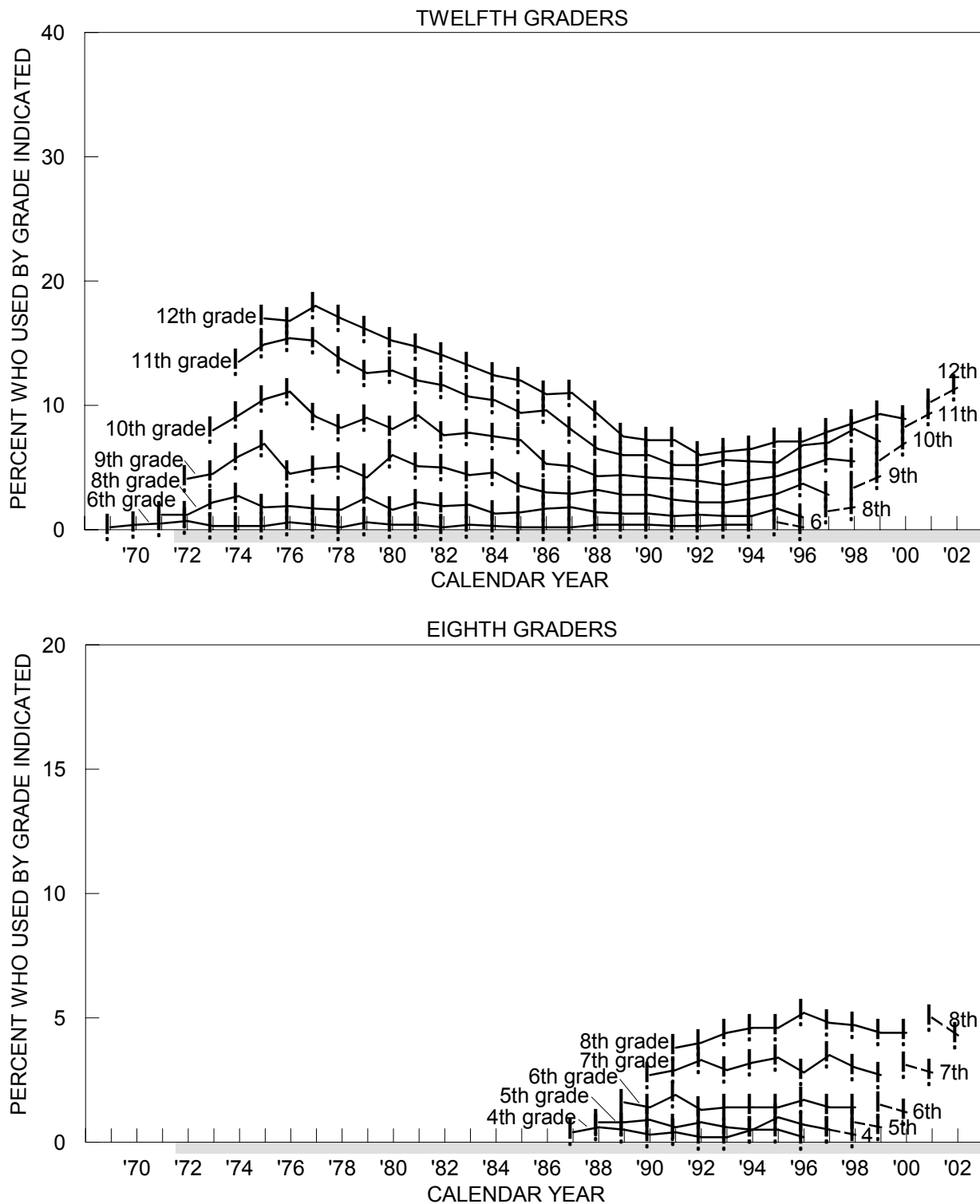


FIGURE 6-19

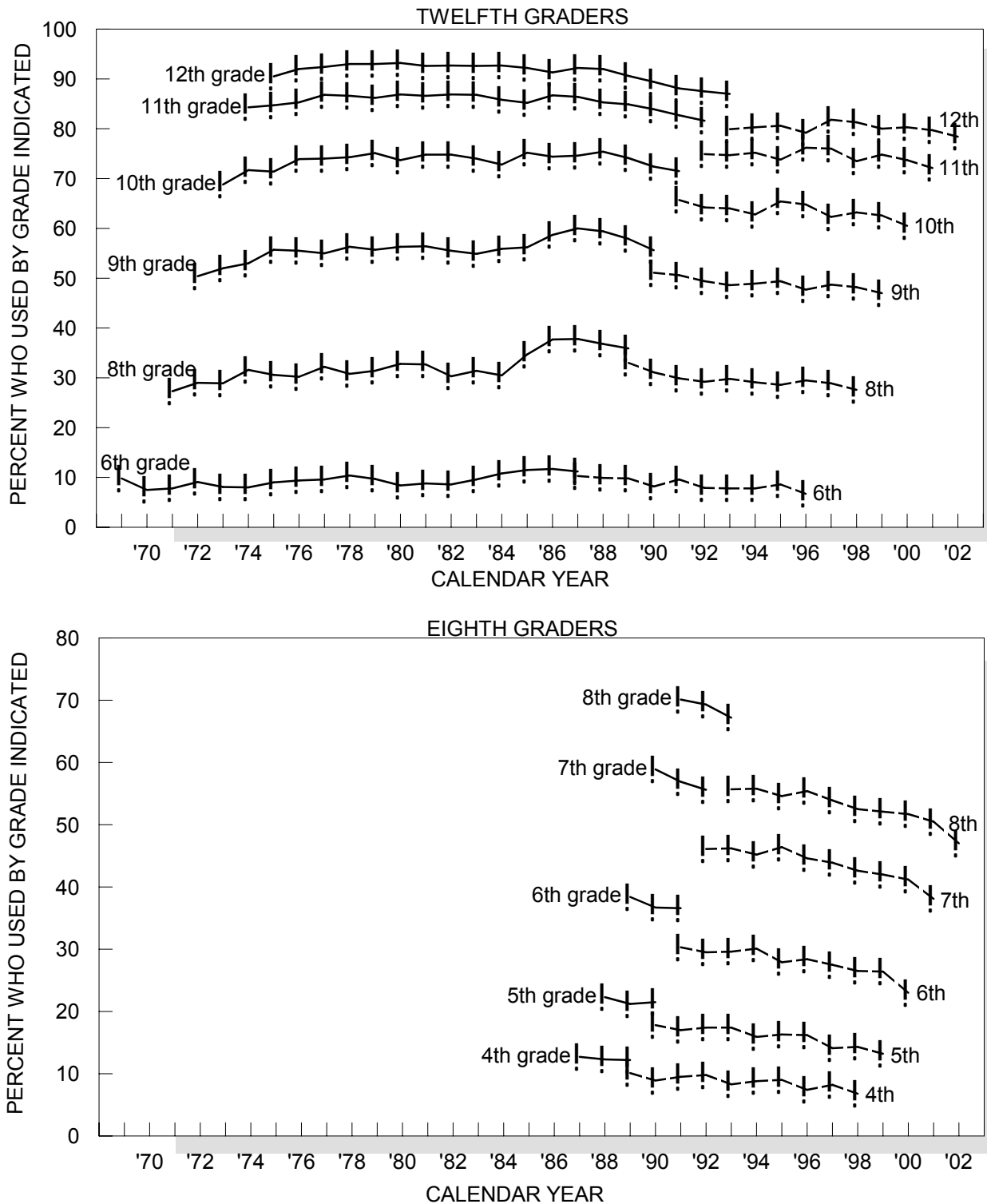
**Tranquilizers: Trends in Lifetime Prevalence for Earlier Grade Levels**  
Based on Retrospective Reports from Twelfth and Eighth Graders



NOTE: Beginning in 2001, a revised set of questions on tranquilizer use was introduced in which "Xanax" replaced "Miltown" in the list of examples. The dashed lines connect percentages that are based on data from the revised questions.

FIGURE 6-20

**Alcohol: Trends in Lifetime Prevalence for Earlier Grade Levels**  
Based on Retrospective Reports from Twelfth and Eighth Graders



NOTE: Beginning in 1993 a revised set of questions on alcohol use was introduced, in which respondents were told that an occasion of use meant "more than just a few sips." The dashed lines connect percentages which are based on data from the revised questions. See text for details.





FIGURE 6-22

**Cigarettes: Trends in Lifetime Prevalence for Earlier Grade Levels**  
Based on Retrospective Reports from Twelfth and Eighth Graders

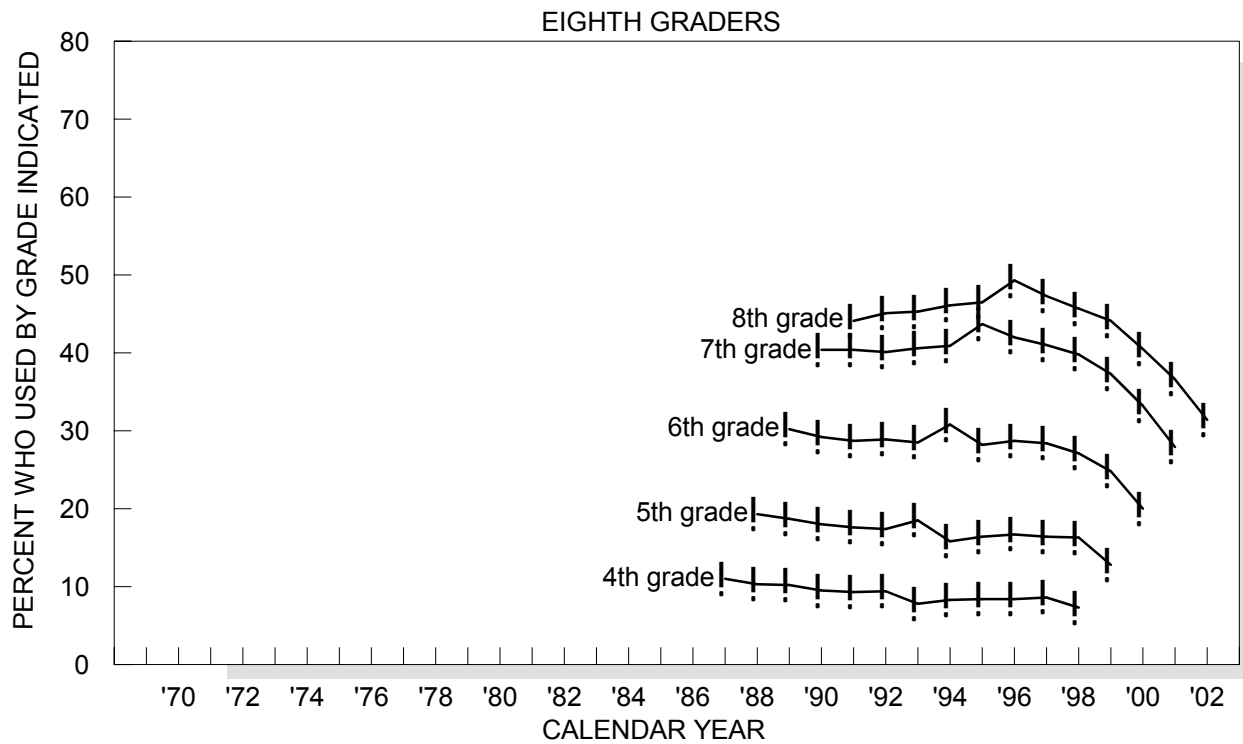
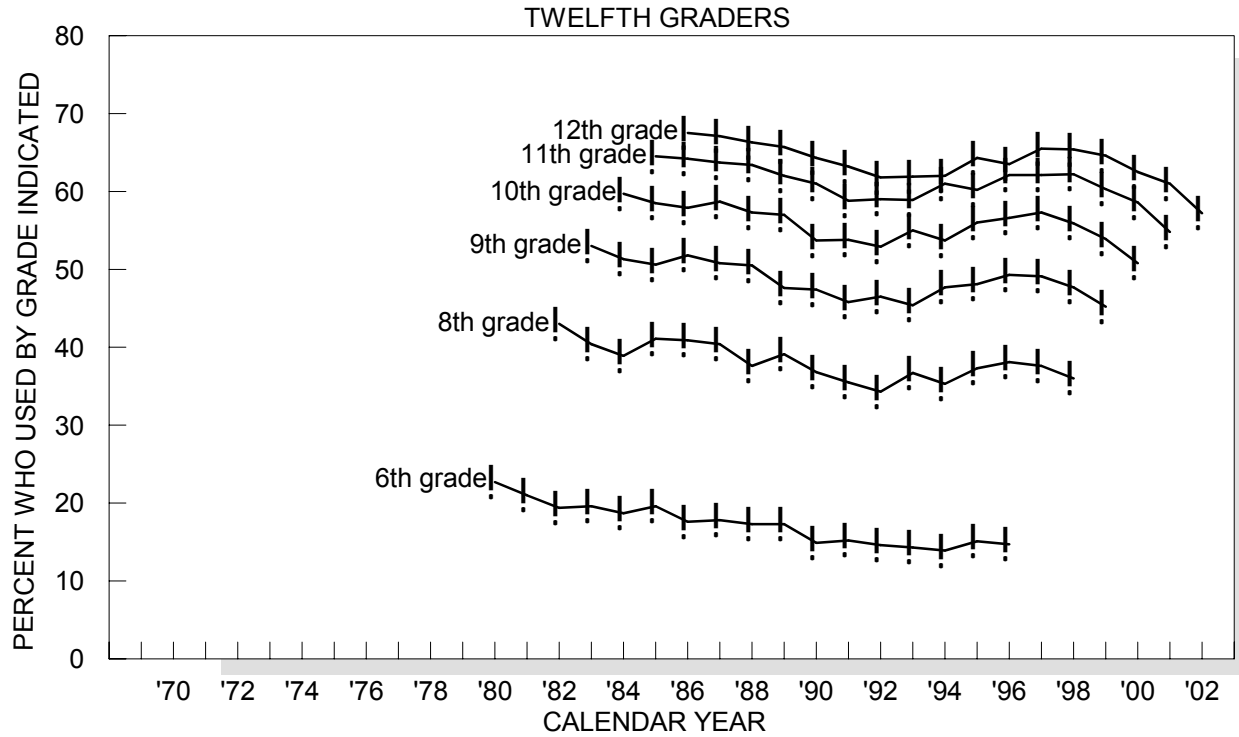


FIGURE 6-23

**Cigarette Smoking on a Daily Basis: Trends in Lifetime Prevalence for Earlier Grade Levels**  
Based on Retrospective Reports from Twelfth and Eighth Graders

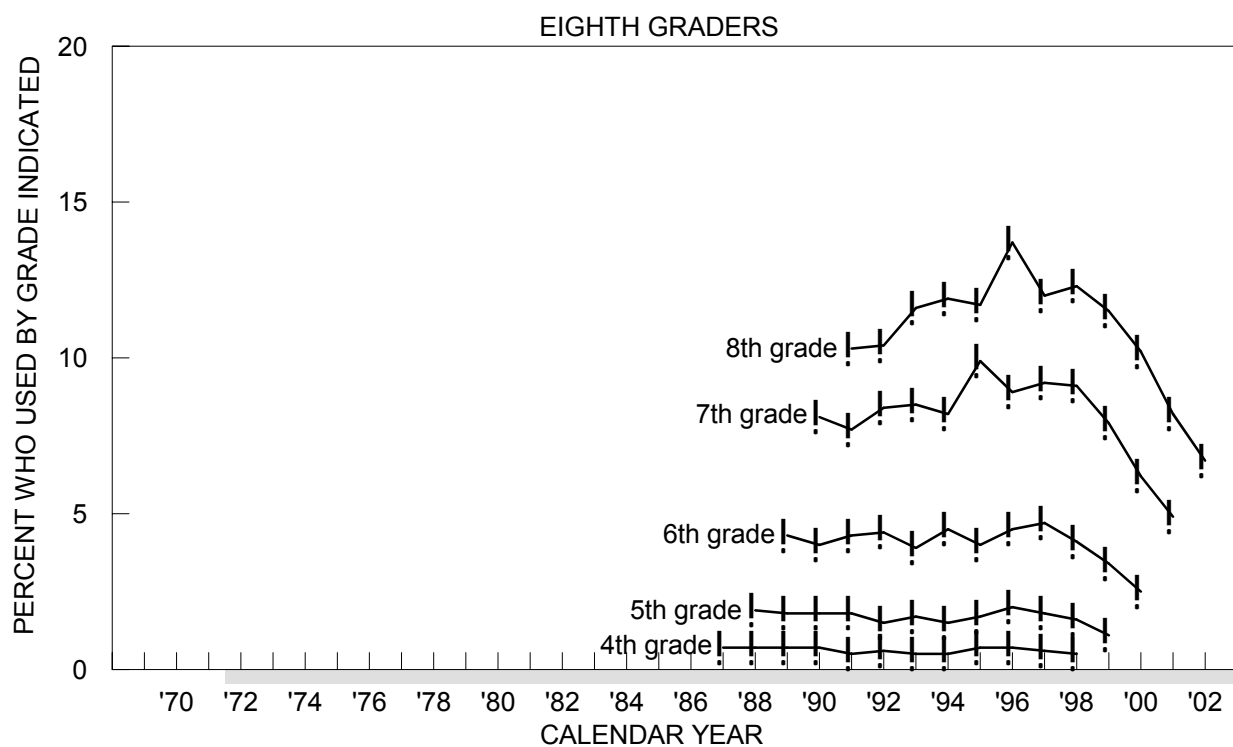
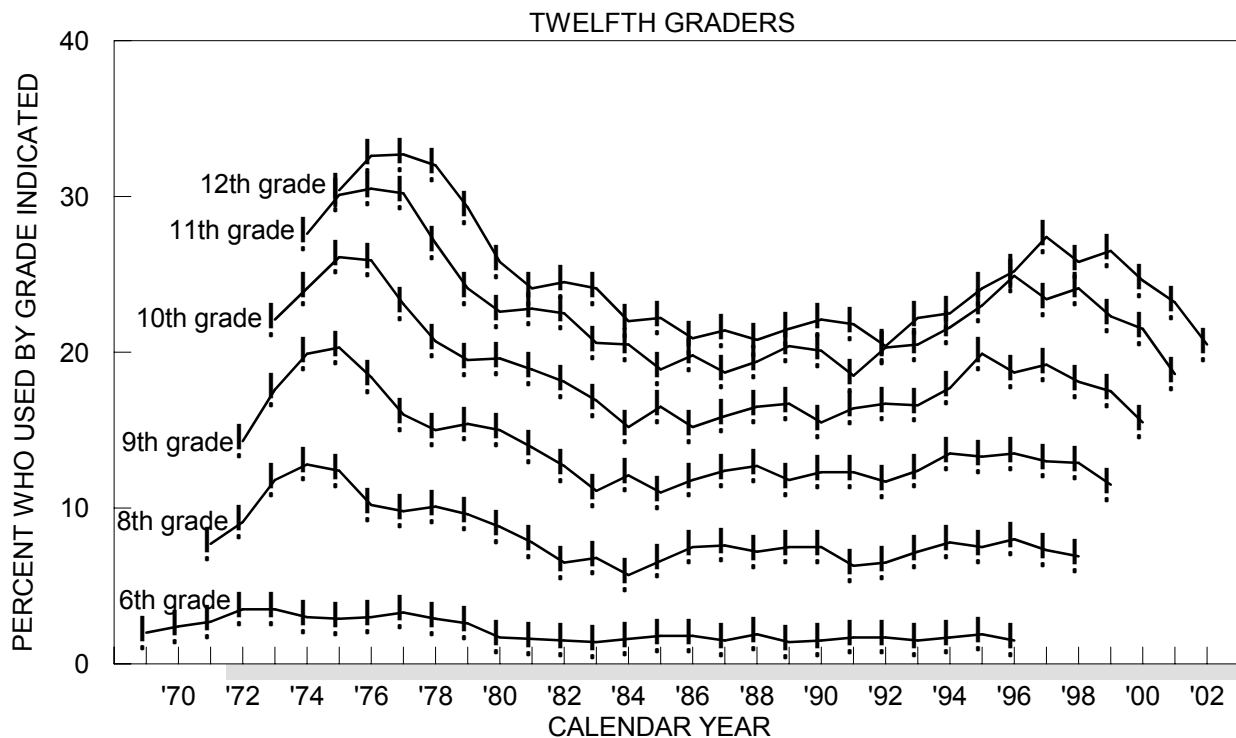
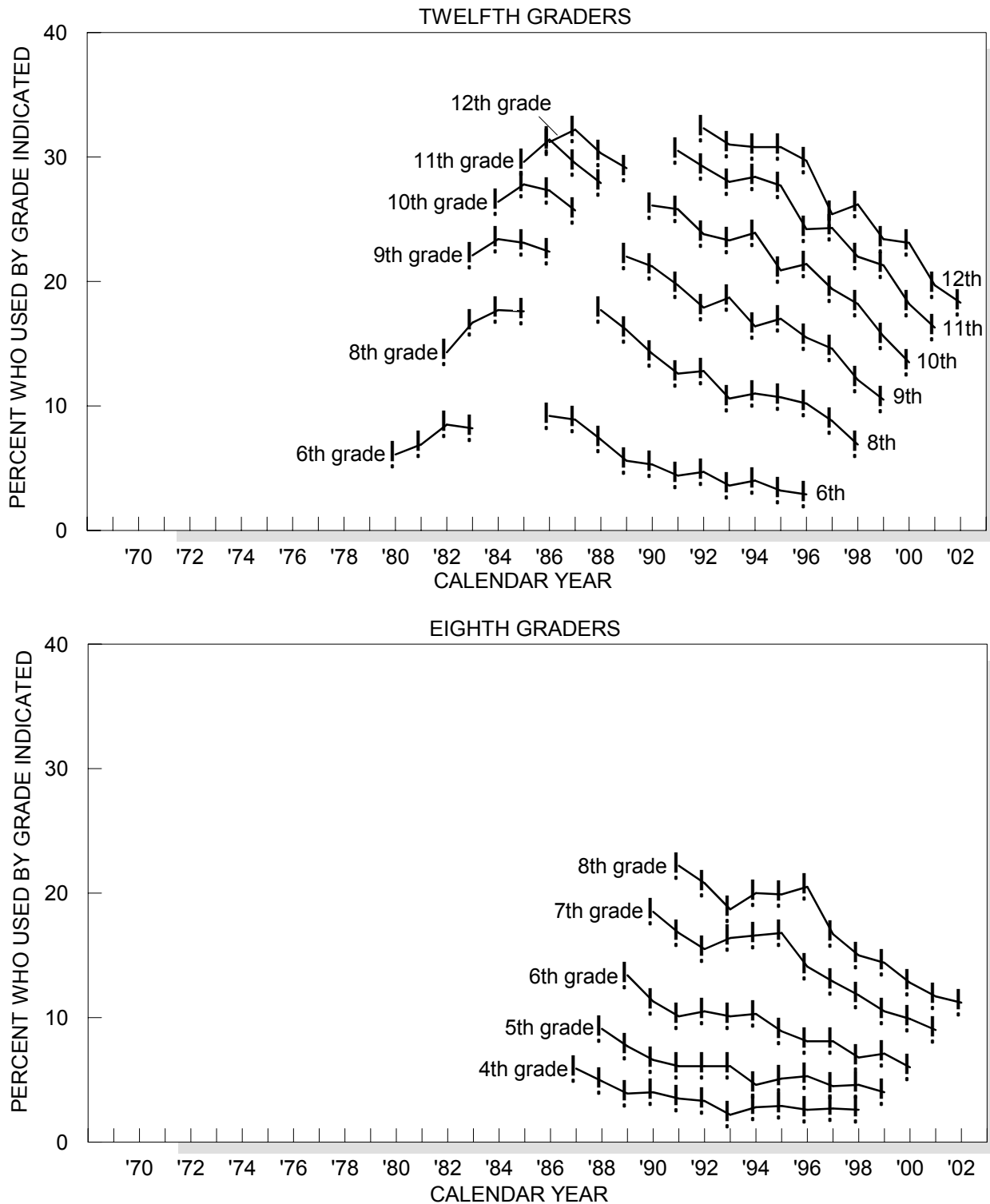


FIGURE 6-24

**Smokeless Tobacco: Trends in Lifetime Prevalence for Earlier Grade Levels  
Based on Retrospective Reports from Twelfth and Eighth Graders**



NOTE: Prevalence of smokeless tobacco was not asked of twelfth graders in 1990 and 1991. Prior to 1990 the prevalence question on smokeless tobacco was located near the end of one twelfth grade questionnaire form, whereas after 1991 the question was placed earlier and in a different form. This shift could explain the discontinuities between the corresponding lines for each grade.



## Chapter 7

### DEGREE AND DURATION OF DRUG HIGHS

While emerging laboratory studies assess the multi-dimensional differences in subjective experience associated with using specific drugs, Monitoring the Future for some years has asked users of the various drugs about the intensity and duration of the “high” they experience when using them. Twelfth-grade respondents are asked in one of the six questionnaire forms to indicate—for each drug that they report having used in the past twelve months—how high they usually get and how long they usually stay high. The results for 2002 from those questions are discussed in this chapter, along with trends since 1975 in the degree and duration of the highs usually associated with each of the drugs. Because these questions were not asked of eighth and tenth graders, all data in this chapter are derived from the twelfth-grade respondents. These data do not address the many qualitative differences in the experience of being high, but they provide a potentially useful description of two dimensions of the subjective experience associated with using these psychoactive substances.

#### DEGREE AND DURATION OF HIGHS AMONG TWELFTH GRADERS

Figure 7-1 shows the proportion of 2002 seniors who said that they *usually* get “very” high, “moderately” high, “a little” high, or “not at all” high when they use a given type of drug. The percentages are based on all respondents who reported use of the given drug class in the previous 12 months, and each bar cumulates to 100%. The ordering of the drugs from left to right is based on the percentage of users of each who reported that they usually get “very” high. The numbers of cases are sometimes small because the statistics are based on self-reported users in only one of the six questionnaire forms used with seniors. The reader is advised to note the sample sizes given in the accompanying tables. To illustrate, in 2002 the number answering for LSD was 79; for other hallucinogens, 108; for cocaine, 90; for marijuana, 713; for narcotics other than heroin, 133; for amphetamines, 146; for alcohol, 1,530; and for tranquilizers, 98.

- **Hallucinogens** (LSD and hallucinogens other than LSD) and **heroin** usually produce the most intense highs. Beginning in 1982, this question was omitted for heroin because of the small number of cases available each year. An averaging across earlier years indicated that it would rank very close to LSD, with a substantial majority of past-year users saying they usually get very high when they use it.
- Following in intensity of highs produced are **marijuana** and **cocaine**. Nearly three quarters of the users of marijuana said they usually get moderately high or very high when using the drug. Nearly three quarters of the cocaine users also said they usually get moderately high or very high.
- A lower proportion of the users of three psychotherapeutic drug classes—**tranquilizers**, **amphetamines**, and **narcotics other than heroin**—say that they use them to get high;

still, substantial proportions of users (from 56% for tranquilizers to 50% for other narcotics) said they usually get moderately or very high after taking these drugs.

- Relatively few of the large proportion of twelfth graders using *alcohol* said that they *usually* get very high when drinking, although nearly half said they usually get at least moderately high. For a given individual, we would expect more variability in the degree of intoxication achieved with alcohol from occasion to occasion than with most other drugs. Therefore, many drinkers probably get very high at least sometimes, even if that is not “usually” the case, which is what the question asks. Certainly the prevalence of occasional heavy drinking (having 5 or more drinks in a row) and self-reported drunkenness would suggest that to be the case.

Figure 7-2 presents the data on the *duration* of the highs usually obtained by users of each drug class. The drugs are arranged in the same order as in Figure 1 (intensity of highs) to permit an examination of the amount of correspondence between the degree and duration of highs.

- As can be seen in Figure 7-2 on the duration of drug highs, those drugs that result in the most intense highs generally tend to result in the longest highs, as well. For example, *LSD* and *hallucinogens other than LSD* hold the top two positions on both dimensions.
- The correspondence between degree and duration of highs is not perfect. For example, the highs obtained with *marijuana* tend to be relatively intense in degree but not long in duration compared to many other drugs. More than half of marijuana users (56%) said they usually stay high only one to two hours. Still, nearly one third of the users (32%) reported usually staying high three to six hours, and another 5.2% usually stay high for seven hours or more.
- Among *cocaine* users, 49% stay high one to two hours and 29% stay high three to six hours. One in seven (15%) stay high seven or more hours. The remaining 7.3% said they usually do not get high.
- In sum, drugs vary considerably in both degree and duration of the highs usually obtained from them. Sizeable proportions of the users of all these drugs responded that they usually get high for at least three hours per occasion. For a number of drugs—particularly the *hallucinogens*, but also *cocaine* and *amphetamines*—appreciable proportions usually stay high for seven hours or more.

## TRENDS IN DEGREE AND DURATION OF DRUG HIGHS

Over the years several important shifts have occurred in the degree and duration of highs usually experienced by users of the drugs included in this study. Recall that only those students who used drugs in the prior 12 months answered these questions.

In Tables 7-1 through 7-8 we have presented trends in the degree and duration of highs experienced with the various drugs in two forms. First, the results are presented as a percent of recent users of the drug in question to provide an indication of the quantity consumed by users. They are also displayed as a percent of *all* respondents, so that the reader may get a sense of what proportion of the entire age group is in various degrees of involvement with each drug. Most of the following discussion concentrates on changes in the proportions of recent users.

- Between 1978 and 1983—a period of considerable decline in *marijuana* use—there was a modest downward trend in the degree of the highs usually attained by users. To illustrate, in 1978, 73% of users said they usually get “moderately high” or “very high,” but by 1983 only 64% said so. Later, from about 1988 through 1996, there was a fairly steady increase observed in the degree of the highs attained by marijuana users. (See Figure 7-3 for a charting of the cross-time trends in degree and durations of highs reported by past-year users.) From 1997 to 2002, there was little change in either the degree of high or prevalence.

Some interesting changes also took place in the average duration of *marijuana* highs between 1978 and 1983. Most marijuana users said they usually stay high either one to two hours *or* three to six hours. Between 1975 and 1983 there was a steady decline in the proportion of users saying they stay high three or more hours (from 52% in 1975 to 35% in 1983). Until 1979, the downward shift could have been due almost entirely to the fact that progressively more seniors were using marijuana; and the users in later classes, who might *not* have been users if they had been in earlier classes, probably tended to be relatively light users. We deduce this from the fact that the percentage of *all* seniors reporting three- to six-hour highs remained relatively unchanged from 1975 to 1979, while the percentage of *all* seniors reporting only one- to two-hour highs increased steadily—from 16% in 1975 to 25% in 1979.

After 1979, however, the overall marijuana prevalence-of-use rate began to decline substantially, but the shift toward shorter average highs still continued through 1983. Thus, we must attribute this shift to another factor, and the one that seems most likely is a general shift toward a less frequent (or less intense) use of the drug, even among the most marijuana-prone segment. The drop in the prevalence of daily marijuana smoking after 1979, disproportionately large relative to the drop in overall prevalence, is consistent with this interpretation. Also consistent is the fact that the average number of joints smoked per day (among those who reported any use in the prior 12 months) also dropped. In 1976, 55% of the past-year users of marijuana indicated that they averaged *less* than one joint per day in the prior 30 days, but by 1988 this proportion had risen to 83%. In sum, not only were fewer high school students using marijuana than in the early years of this study, but those who were using the drug seemed to be using it less frequently and to be taking smaller amounts (and doses of the active ingredient) per occasion, at least through 1988. By the mid-1990s, though, after an increase in the prevalence of use, a higher proportion of users again reported getting “very high” and staying high longer. There was not much change from 1997 to 2002, while prevalence has been fairly stable. The lower intensity of *marijuana* highs through the 1980s is of particular interest in light of evidence from other sources that the THC content of marijuana had risen substantially



since the late 1970s. The evidence here would suggest that users titrated their intake to achieve a certain (perhaps declining) level of high and, thus, were smoking less marijuana as measured by volume.

- There are no clearly discernible long-term patterns in the intensity or duration of highs being experienced by users of *LSD* or *hallucinogens other than LSD*, with the slight exception that the average duration of LSD highs dropped some from the mid-1970s to the early 1980s (as use declined) and then rose some through the 1990s (as use increased). (See Tables 7-2 and 7-3.)
- The degree of high obtained from *cocaine* showed some decline between 1975 and 1981 as prevalence increased. It then remained fairly constant between 1981 and 1991 (see Table 7-4). At the onset phase of the cocaine epidemic (1976-1979), the average duration of highs also shortened as the proportion of users reporting highs of two hours or less rose from 30% to 49%, perhaps reflecting that many of the additional users were less committed users. The proportion reporting these short highs continued to rise through 1989 to 64%, revealing that during the early part of the decline phase of the epidemic (1986-1992) the average duration of cocaine highs continued to decrease, just as it had done during the rise of the epidemic. This may reflect the fact that as concerns about the dangers of cocaine use grew, even those who decided to use cocaine became more moderate in their use for fear of it leading to addiction. Since 1989 little change has occurred in the duration of cocaine highs.
- For *narcotics other than heroin*, a general decline occurred between 1975 and 1992 both in the intensity of highs usually experienced and in the duration of those highs (see Table 7-5). In 1975, 39% of past-year users said they usually got “very high” compared to only 12% in 1992. The proportion usually staying high for seven or more hours dropped from 28% in 1975 to 11% in 1992. This shift was due, in part, to a substantial increase in the proportion of users who said they do not take these drugs “to get high” (4.1% in 1975, increasing to 27.7% by 1992). Because the actual prevalence of narcotic use dropped only modestly over that interval, these findings suggest that an increasing use for self-medication may have masked, to some degree, a fair-sized decrease in recreational use. Put another way, the drop in recreational use may have been even steeper than is apparent from the modest amount of decline in prevalence. Since 1992, an increase in the use of other narcotics (as well as illicit drugs in general) has been accompanied by an increase in the degree and duration of the highs experienced by users. In addition, some decline has occurred in the proportion of users saying that they do not take them to get high (now 15%).
- Between 1975 and 1981, as *amphetamine* use increased among seniors, the average degree of high obtained decreased (see Table 7-6), much as occurred with cocaine. The proportion of recent users usually getting very high or moderately high fell from 60% in 1975 to 37% in 1981. Consistent with this change, the proportion of users saying they simply “don’t take them to get high” increased from 9.3% in 1975 to 20.2% by 1981, remaining roughly at that level through 1990. As use rose some in the 1990s, the numbers

on degree and duration of highs have been a bit “bouncy” and have not shown any consistent trends. In general, about 20% of the users, when asked how high they usually get, said they “don’t take them to get high.”

Also, the average reported *duration* of amphetamine highs declined over the longer term: 41% of the 1975 users said they usually stayed high seven or more hours compared to only 17% of the 1981 users.<sup>66</sup> In 2002, 23% of users said they usually stay high that long.

The substantial decreases in both the degree and duration of highs between 1975 and 1981 strongly suggest a shift in the purposes for amphetamine use. An examination of data on self-reported reasons for use tends to confirm this conclusion. Between the mid-1970s and the mid-1980s, there was a decline in the frequency with which recent users mentioned social/recreational reasons for use and an increase in mentions of use for instrumental purposes.<sup>67</sup> The late 1980s saw some decline in the instrumental purposes (“to stay awake,” “to get more energy,” “to get through the day”) and a leveling in the mentions of social/recreational reasons. In the 1990s, as use rose a bit, there was only a very slight upturn in mentions of social/recreational reasons for use, followed by a leveling by the late 1990s.

- With respect to the social/recreational shifts from 1979 to 1984, the percentage of all recent users citing “to feel good or get high” as a reason for amphetamine use declined from 58% to 45%; in 2002, the figure was 44%. Similarly, “to have a good time with my friends” declined from 38% to 30% between 1979 and 1984; in 2002, the figure was 28%. There were shifts toward more instrumental use between 1976 and 1984: “to lose weight” increased by 15 percentage points (to 41%); “to get more energy” increased by 14 percentage points (to 69%); “to stay awake” increased by 10 percentage points (to 62%); and “to get through the day” increased by 10 percentage points (to 32%). Since about 1988, these instrumental objectives have been mentioned somewhat less often by users. In 2002, “to lose weight” was mentioned by 42% of recent users, “to get more energy” by 61%, “to stay awake” by 51%, and “to get through the day” by 25%.
- Despite the earlier relative decline in recreational reasons for use of amphetamines, it also appears that the absolute level of recreational use increased somewhat, though clearly not as steeply as the trends through 1981 in overall use might have suggested. The data on the percentage of seniors reporting exposure to people using amphetamines “to get high or for kicks,” discussed further in chapter 9, showed a definite increase between 1976 and 1981. There was no further increase in exposure to people using amphetamines for those purposes in 1982, suggesting that recreational use, as well as overall use, had leveled off. Since 1982, such exposure has decreased considerably (from 50% to 31% of all seniors in

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<sup>66</sup>In 1982, the questionnaire form containing the questions on degree and duration of highs clarified the amphetamine usage questions to eliminate the inappropriate inclusion of nonprescription amphetamines. One might have expected this change to have increased the degree and duration of highs reported, given that real amphetamines would be expected to have greater psychological impact on average; but the trends still continued downward that year.

<sup>67</sup>Johnston, L. D. & O’Malley, P. M. (1986). Why do the nation’s students use drugs and alcohol? Self-reported reasons from nine national surveys. *Journal of Drug Issues*, 16, 29-66.

2002), suggesting a substantial drop in the total number of people using amphetamines for recreational purposes.

- The degree and duration of highs achieved by *tranquilizer* users decreased in the 1980s (see Table 7-7). Only 15% of the 1980 senior users said they did not take them to get high, compared to 35% of 1990 users. However, as use rose some during the 1990s, the proportion of users saying they do not use tranquilizers to get high declined to between 9% and 20% in recent years, indicating that recreational use played an important role in this recent rise in tranquilizer use.
- Data are not collected for highs experienced in the use of *inhalants*, the specific *nitrites*, *PCP*, *ecstasy*, or *heroin*.
- The intensity and duration of highs associated with *alcohol* use generally have been stable throughout the study period (see Table 7-8), with the following exceptions: (a) the proportion of all seniors who report getting “very high” rose some in the 1990s (from 5.6% in 1993 to 9.0% in 1998; it was 8.3% in 2002), and (b) the proportion of all seniors saying they usually stay high on alcohol for seven hours or more rose slightly over the same interval (from 3.4% in 1993 to 4.0% in 2002).

**TABLE 7-1**  
**Marijuana: Trends in Degree and Duration of Feeling High for Twelfth Graders**

Q. When you take marijuana or hashish how high do you usually get? <sup>a</sup>	Class of:																											
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
<b>% of Recent Users</b>																												
Not at all high	6.9	5.7	7.5	6.3	6.0	6.3	4.9	4.6	6.6	6.8	7.2	5.1	6.8	6.6	7.6	5.8	7.2	7.8	9.0	7.0	8.1	5.7	5.4	6.1	6.8	6.3	5.4	5.4
A little high	22.1	20.9	22.5	20.3	22.5	23.5	29.0	26.3	29.4	29.0	27.2	27.6	29.5	30.2	22.8	23.2	21.6	25.9	19.4	21.7	22.3	17.9	18.6	22.0	19.8	22.6	18.7	23.2
Moderately high	45.5	47.7	43.5	46.8	47.5	47.7	45.7	45.6	41.9	36.9	41.8	43.8	40.9	40.3	44.1	40.8	42.8	39.3	45.9	40.6	40.8	47.5	45.1	43.6	43.7	39.6	42.8	41.7
Very high	25.5	25.7	26.5	26.6	24.0	22.6	20.4	23.5	22.0	27.4	23.8	23.5	22.9	22.9	25.5	30.3	28.4	27.0	25.8	30.7	28.8	28.9	30.9	28.4	29.8	31.4	33.1	29.7
	Approx. N = 1142	1266	1448	1873	1606	1495	1607	1588	1366	1264	1298	1177	1174	1142	782	694	591	605	669	779	916	788	998	944	812	809	776	713
<b>% of All Respondents</b>																												
No use in last 12 months	60.0	55.5	52.4	49.8	49.4	52.4	53.2	54.7	58.2	59.9	59.0	61.2	63.5	64.9	71.6	72.7	76.2	76.8	74.8	69.6	64.1	66.5	61.2	62.6	63.6	61.8	63.0	66.3
Not at all high	2.8	2.5	3.6	3.2	3.0	3.0	2.3	2.1	2.8	2.7	2.9	2.0	2.5	2.3	2.2	1.6	1.7	1.8	2.3	2.1	2.9	1.9	2.1	2.3	2.5	2.4	2.0	1.8
A little high	8.8	9.3	10.7	10.2	11.4	11.2	13.6	11.9	12.3	11.6	11.2	10.7	10.7	10.6	6.5	6.3	5.1	6.0	4.9	6.6	8.0	6.0	7.2	8.2	7.2	8.6	6.9	7.8
Moderately high	18.2	21.2	20.7	23.5	24.0	22.7	21.4	20.6	17.5	14.8	17.2	17.0	14.9	14.1	12.5	11.1	10.2	9.1	11.6	12.4	14.7	15.9	17.5	16.3	15.9	15.1	15.8	14.1
Very high	10.2	11.4	12.6	13.4	12.2	10.8	9.6	10.6	9.2	11.0	9.8	9.1	8.4	8.1	7.2	8.3	6.7	6.3	6.5	9.3	10.4	9.7	12.0	10.6	10.8	12.0	12.2	10.0
	Approx. N = 2855	2845	3042	3731	3175	3143	3437	3506	3268	3154	3163	3033	3219	3250	2755	2542	2487	2614	2655	2558	2549	2355	2570	2526	2231	2121	2098	2114
<b>Q. When you take marijuana or hashish how long do you usually stay high?<sup>a</sup></b>																												
<b>% of Recent Users</b>																												
Usually don't get high	8.5	8.0	9.5	8.0	8.4	8.5	7.6	7.0	9.9	9.6	9.3	8.2	11.1	9.6	10.8	7.8	8.5	9.5	10.9	9.5	8.7	6.4	6.1	7.4	7.6	8.7	5.8	6.9
One to two hours	39.7	43.2	42.6	47.4	48.7	51.7	52.5	53.8	55.6	51.7	52.4	55.0	52.9	56.0	51.9	53.3	49.5	47.2	48.6	47.4	46.0	46.9	49.6	51.4	51.8	52.0	48.3	55.5
Three to six hours	45.4	43.7	42.7	39.0	37.4	35.0	35.7	34.2	30.4	33.1	34.0	32.9	32.2	30.2	33.3	33.1	34.4	37.7	36.8	36.1	37.6	39.3	37.1	35.7	33.5	34.9	38.2	32.4
Seven to 24 hours	5.9	4.9	4.7	5.1	5.0	4.1	4.0	4.5	3.5	5.0	3.9	3.3	3.7	3.8	3.3	5.4	6.9	4.9	3.2	5.5	6.7	6.2	6.0	5.1	5.9	3.6	6.0	5.1
More than 24 hours	0.5	0.2	0.6	0.5	0.5	0.7	0.2	0.5	0.6	0.7	0.4	0.6	0.1	0.4	0.8	0.4	0.8	0.8	0.4	1.4	1.0	1.2	1.1	0.4	1.2	0.9	1.6	0.1
	Approx. N = 1141	1261	1449	1873	1619	1500	1607	1593	1357	1268	1295	1176	1172	1147	787	694	589	602	666	774	911	789	996	945	814	807	781	713
<b>% of All Respondents</b>																												
No use in last 12 months	60.0	55.5	52.4	49.8	49.2	52.3	53.2	54.6	58.4	59.9	59.0	61.2	63.6	64.8	71.5	72.7	76.3	76.9	74.9	69.7	64.2	66.5	61.2	62.6	63.6	61.9	62.9	66.3
Usually don't get high	3.4	3.6	4.5	4.0	4.3	4.0	3.6	3.2	4.1	3.8	3.8	3.2	4.0	3.4	3.1	2.1	2.0	2.2	2.7	2.9	3.1	2.1	2.4	2.8	2.8	3.3	2.2	2.3
One to two hours	15.9	19.2	20.3	23.8	24.7	24.6	24.5	24.4	23.1	20.7	21.5	21.3	19.3	19.7	14.8	14.6	11.7	10.9	12.2	14.4	16.5	15.7	19.3	19.2	18.9	19.8	17.9	18.7
Three to six hours	18.2	19.4	20.3	19.6	19.0	16.7	16.7	15.5	12.7	13.3	13.9	12.8	11.7	10.7	9.5	9.0	8.1	8.7	9.2	11.0	13.5	13.2	14.4	13.4	12.2	13.3	14.2	10.9
Seven to 24 hours	2.4	2.2	2.2	2.6	2.5	2.0	1.9	2.0	1.4	2.0	1.6	1.3	1.3	1.3	0.9	1.5	1.6	1.1	0.8	1.7	2.4	2.1	2.3	1.9	2.1	1.4	2.2	1.7
More than 24 hours	0.2	0.1	0.3	0.3	0.2	0.3	0.1	0.2	0.3	0.3	0.2	0.2	0.0	0.1	0.2	0.1	0.2	0.2	0.1	0.4	0.4	0.4	0.4	0.2	0.4	0.3	0.6	0.1
	Approx. N = 2853	2834	3044	3731	3188	3149	3437	3511	3259	3158	3160	3032	3218	3255	2760	2542	2485	2611	2652	2553	2544	2356	2568	2527	2233	2119	2103	2114

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>These questions appear in just one form. They are asked only of respondents who report use of the drug in the prior twelve months (i.e., "recent users").

**TABLE 7-2**  
**LSD: Trends in Degree and Duration of Feeling High for Twelfth Graders**

Q. When you take LSD how high do you usually get? <sup>a</sup>	Class of:																											
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
<b>% of Recent Users</b>																												
Not at all high	0.2	1.7	1.6	0.5	2.8	2.0	1.6	2.7	0.0	2.5	1.2	3.3	2.5	1.3	4.9	0.6	4.0	1.7	1.8	1.1	3.0	4.0	2.3	4.3	0.0	4.8	3.3	4.7
A little high	4.8	1.9	7.4	4.9	8.4	5.0	9.6	4.1	4.2	5.6	3.7	4.1	4.3	4.1	6.6	2.0	6.9	2.9	10.8	6.3	7.4	5.2	9.2	5.5	4.6	6.7	8.2	7.0
Moderately high	16.2	22.4	19.3	24.7	14.9	23.4	23.3	26.4	26.9	24.8	16.2	23.3	21.9	20.4	17.4	33.8	23.0	32.4	30.1	29.3	21.7	20.6	21.1	31.2	19.1	22.3	28.9	22.4
Very high	78.8	73.9	71.7	69.9	73.9	69.5	65.5	66.8	68.9	67.1	78.9	69.3	71.4	74.2	71.1	63.6	66.2	63.1	57.4	63.2	67.9	70.2	67.4	59.0	76.3	66.1	59.6	66.0
Approx. N =	213	193	183	223	228	228	236	249	200	168	151	168	192	175	133	138	140	146	209	175	205	184	250	188	176	145	144	79
<b>% of All Respondents</b>																												
No use in last 12 months	92.5	93.6	94.4	93.7	92.9	92.8	93.2	92.9	93.9	94.7	95.3	94.5	94.0	94.6	95.2	—	94.4	94.4	92.1	93.1	91.9	92.2	90.2	92.6	92.1	93.2	93.1	96.3
Not at all high	0.0	0.1	0.1	0.0	0.2	0.1	0.1	0.2	0.0	0.1	0.1	0.2	0.1	0.1	0.2	—	0.2	0.1	0.1	0.1	0.2	0.3	0.2	0.3	0.0	0.3	0.2	0.2
A little high	0.4	0.1	0.4	0.3	0.6	0.4	0.6	0.3	0.3	0.3	0.2	0.2	0.3	0.2	0.3	—	0.4	0.2	0.8	0.4	0.6	0.4	0.9	0.4	0.4	0.5	0.6	0.3
Moderately high	1.2	1.4	1.1	1.6	1.1	1.7	1.6	1.9	1.6	1.3	0.8	1.3	1.3	1.1	0.8	—	1.3	1.8	2.4	2.0	1.8	1.6	2.1	2.3	1.5	1.5	2.0	0.8
Very high	5.9	4.7	4.0	4.4	5.2	5.0	4.4	4.7	4.2	3.5	3.7	3.8	4.3	4.0	3.4	—	3.7	3.5	4.5	4.3	5.5	5.5	6.6	4.4	6.0	4.5	4.1	2.5
Approx. N =	2840	3016	3268	3540	3228	3182	3488	3506	3277	3166	3179	3060	3214	3271	2763	—	2494	2619	2655	2547	2517	2347	2543	2525	2226	2128	2089	2126
<b>Q. When you take LSD how long do you usually stay high?<sup>a</sup></b>																												
<b>% of Recent Users</b>																												
Usually don't get high	1.6	2.3	2.5	0.5	3.4	2.3	1.6	1.5	0.0	3.2	1.2	3.3	2.5	1.0	6.1	0.6	3.5	1.7	3.4	0.5	3.8	2.2	2.4	3.2	0.6	3.4	3.0	1.4
One to two hours	1.3	1.7	3.8	3.9	4.0	2.5	5.4	3.6	2.6	2.5	3.3	2.0	4.9	2.0	4.1	6.6	4.5	5.5	3.8	5.7	2.5	5.0	3.9	2.6	1.9	3.7	4.0	8.2
Three to six hours	22.7	30.7	30.5	31.9	33.1	34.6	35.5	30.7	43.6	29.4	32.4	32.8	27.6	28.2	19.2	24.4	16.0	21.4	27.7	20.1	21.1	19.6	25.4	29.7	21.9	31.7	32.7	40.6
Seven to 24 hours	69.8	59.9	59.8	58.5	52.1	55.4	54.6	62.5	49.3	60.9	60.3	59.8	59.4	64.3	65.9	63.1	73.8	66.3	62.3	70.6	67.0	70.0	62.3	61.4	71.0	55.6	55.9	43.3
More than 24 hours	4.6	5.5	3.4	5.3	7.4	5.2	2.9	1.7	4.6	4.0	2.8	2.2	5.6	4.5	4.7	5.2	2.2	5.0	2.9	3.0	5.7	3.3	6.0	3.2	4.6	5.6	4.4	6.5
Approx. N =	215	193	182	224	228	226	236	252	199	168	153	168	191	178	133	137	141	147	205	176	203	186	252	186	173	143	145	79
<b>% of All Respondents</b>																												
No use in last 12 months	92.5	93.6	94.4	93.7	92.9	92.9	93.2	92.8	93.9	94.7	95.2	94.5	94.1	94.6	95.2	—	94.4	94.4	92.3	93.1	91.9	92.1	90.1	92.6	92.2	93.3	93.1	96.3
Usually don't get high	0.1	0.1	0.1	0.0	0.2	0.2	0.1	0.1	0.0	0.2	0.1	0.2	0.1	0.1	0.3	—	0.2	0.1	0.3	0.0	0.3	0.2	0.2	0.2	0.0	0.2	0.2	0.1
One to two hours	0.1	0.1	0.2	0.3	0.3	0.2	0.4	0.3	0.2	0.1	0.2	0.1	0.3	0.1	0.2	—	0.3	0.3	0.3	0.4	0.2	0.4	0.4	0.2	0.1	0.3	0.3	0.3
Three to six hours	1.7	2.0	1.7	2.0	2.3	2.5	2.4	2.2	2.6	1.6	1.6	1.8	1.6	1.5	0.9	—	0.9	1.2	2.1	1.4	1.7	1.6	2.5	2.2	1.7	2.1	2.3	1.5
Seven to 24 hours	5.2	3.8	3.3	3.7	3.7	3.9	3.7	4.5	3.0	3.2	2.9	3.3	3.5	3.5	3.2	—	4.2	3.7	4.8	4.9	5.4	5.6	6.2	4.5	5.5	3.7	3.9	1.6
More than 24 hours	0.3	0.4	0.2	0.3	0.5	0.4	0.2	0.1	0.3	0.2	0.1	0.1	0.3	0.2	0.2	—	0.1	0.3	0.2	0.2	0.5	0.3	0.6	0.2	0.4	0.4	0.3	0.2
Approx. N =	2867	3016	3256	3227	3180	3487	3509	3276	3166	3181	3060	3214	3274	2763	—	2495	2619	2651	2548	2515	2349	2545	2524	2223	2126	2090	2126	

NOTE: '—' indicates data not available.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>These questions appear in just one form. They are asked only of respondents who report use of the drug in the prior twelve months (i.e., "recent users").

**TABLE 7-3**  
**Hallucinogens Other than LSD: Trends in Degree and Duration of Feeling High for Twelfth Graders**

Q. When you take hallucinogens other than LSD how high do you usually get? <sup>a</sup>	Class of:																											
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
<b>% of Recent Users</b>																												
Not at all high	2.4	1.2	1.2	1.2	2.1	0.9	2.3	2.5	4.0	4.9	3.2	3.4	5.6	3.1	1.0	2.5	5.0	1.0	7.6	8.8	3.1	4.0	3.1	1.9	2.8	1.7	5.1	0.6
A little high	7.9	9.6	8.4	8.3	9.6	10.4	12.9	10.3	8.2	10.8	9.5	13.6	13.6	8.8	8.2	5.8	9.9	18.2	10.8	12.6	4.4	7.9	10.7	5.3	7.2	4.5	5.6	5.4
Moderately high	35.5	39.6	40.8	36.3	37.7	38.9	37.9	35.9	36.6	38.0	36.1	36.8	32.1	28.7	33.4	41.2	41.0	32.0	37.4	25.5	24.5	26.9	20.4	38.0	16.1	26.4	31.3	39.5
Very high	54.1	49.7	49.6	54.3	50.6	49.9	46.9	51.3	51.2	46.3	51.3	46.3	48.6	59.5	57.4	50.5	44.1	48.8	44.2	53.1	68.1	61.2	65.9	54.8	73.8	67.5	58.1	54.6
Approx. N = 322 237 246 326 253 255 246 201 170 153 134 114 115 85 53 58 39 47 62 67 86 103 120 110 98 97 126 108																												
<b>% of All Respondents</b>																												
No use in last 12 months	90.4	93.0	93.0	92.7	91.9	91.8	92.8	94.2	94.7	95.1	95.7	96.2	96.4	97.4	98.1	—	98.4	98.2	97.6	97.3	96.6	95.6	95.2	95.6	95.6	95.3	93.9	94.9
Not at all high	0.2	0.1	0.1	0.1	0.2	0.1	0.2	0.1	0.2	0.1	0.2	0.1	0.2	0.1	0.0	—	0.1	0.0	0.2	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.3	0.0
A little high	0.8	0.7	0.6	0.6	0.8	0.9	0.9	0.6	0.4	0.5	0.4	0.5	0.5	0.2	0.2	—	0.2	0.3	0.3	0.3	0.1	0.4	0.5	0.2	0.3	0.2	0.3	0.3
Moderately high	3.4	2.8	2.9	2.6	3.0	3.2	2.7	2.1	1.9	1.9	1.5	1.4	1.2	0.8	0.6	—	0.6	0.6	0.9	0.7	0.8	1.2	1.0	1.7	0.7	1.2	1.9	2.0
Very high	5.2	3.5	3.5	4.0	4.1	4.1	3.4	3.0	2.7	2.3	2.2	1.8	1.8	1.6	1.1	—	0.7	0.9	1.0	1.4	2.3	2.7	3.2	2.4	3.3	3.2	3.6	2.8
Approx. N = 3354 3386 3514 4466 3127 3098 3407 3466 3235 3129 3142 3004 3182 3220 2734 — 2472 2591 2629 2523 2515 2319 2500 2486 2213 2079 2058 2116																												
<b>Q. When you take hallucinogens other than LSD how long do you usually stay high?<sup>a</sup></b>																												
<b>% of Recent Users</b>																												
Usually don't get high	2.0	1.2	1.1	1.3	2.5	1.3	2.8	3.6	4.8	4.0	0.9	5.2	7.2	3.9	4.2	2.5	7.6	6.1	3.6	7.2	3.1	2.4	4.3	2.1	2.8	2.1	3.8	2.0
One to two hours	8.5	9.4	7.0	8.4	8.3	7.8	8.3	6.6	7.9	8.9	12.9	9.1	9.8	7.8	16.5	13.8	12.3	15.3	6.9	11.5	6.2	8.8	5.3	2.6	7.1	10.0	8.0	7.9
Three to six hours	41.3	46.1	45.5	47.7	48.2	49.1	47.1	52.6	54.1	48.7	46.7	43.3	46.0	46.2	35.3	46.8	25.9	38.9	51.9	41.5	35.0	55.6	57.9	56.0	44.9	52.0	49.5	57.2
Seven to 24 hours	45.6	39.9	44.1	41.1	37.2	39.6	38.7	34.4	30.5	36.0	37.1	40.6	35.8	40.5	42.1	25.8	52.4	33.3	37.7	39.8	50.2	29.5	30.6	37.3	42.2	32.7	35.5	32.9
More than 24 hours	2.7	3.4	2.3	1.5	3.8	2.2	3.1	2.8	2.7	2.5	2.5	1.9	1.3	1.6	1.9	11.2	1.8	6.4	0.0	0.0	5.5	3.6	2.0	1.9	3.1	3.2	3.1	0.0
Approx. N = 322 238 243 326 249 254 246 203 171 153 132 115 116 84 55 60 40 48 59 68 86 101 118 110 98 97 125 108																												
<b>% of All Respondents</b>																												
No use in last 12 months	90.4	93.0	93.0	92.7	92.0	91.8	92.8	94.1	94.7	95.1	95.8	96.2	96.4	97.4	98.0	—	98.4	98.1	97.8	97.3	96.6	95.6	95.3	95.6	95.6	95.3	93.9	94.9
Usually don't get high	0.2	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.3	0.2	0.0	0.2	0.3	0.1	0.1	—	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.2	0.1
One to two hours	0.8	0.7	0.5	0.6	0.7	0.6	0.6	0.4	0.4	0.4	0.5	0.3	0.4	0.2	0.3	—	0.2	0.3	0.2	0.3	0.2	0.4	0.2	0.1	0.3	0.5	0.5	0.4
Three to six hours	4.0	3.2	3.2	3.5	3.8	4.0	3.4	3.1	2.9	2.4	2.0	1.7	1.7	1.2	0.7	—	0.4	0.7	1.2	1.1	1.2	2.4	2.7	2.5	2.0	2.4	3.0	2.9
Seven to 24 hours	4.4	2.8	3.1	3.0	3.0	3.2	2.8	2.0	1.6	1.8	1.6	1.6	1.3	1.1	0.8	—	0.8	0.6	0.8	1.1	1.7	1.3	1.4	1.7	1.9	1.5	2.2	1.7
More than 24 hours	0.3	0.2	0.2	0.1	0.3	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.0	—	0.0	0.1	0.0	0.0	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.0
Approx. N = 3354 3400 3471 4466 3123 3096 3407 3467 3236 3129 3140 3005 3183 3219 2736 — 2473 2592 2626 2524 2515 2317 2498 2486 2213 2079 2057 2117																												

NOTE: '—' indicates data not available.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>These questions appear in just one form. They are asked only of respondents who report use of the drug in the prior twelve months (i.e., "recent users").

**TABLE 7-4  
Cocaine: Trends in Degree and Duration of Feeling High for Twelfth Graders**

Q. When you take cocaine how high do you usually get? <sup>a</sup>	Class of:																											
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
<b>% of Recent Users</b>																												
I don't take it to get high	1.1	0.8	0.3	0.0	2.1	1.9	0.6	2.1	1.9	2.8	3.1	4.1	3.6	4.9	4.6	3.9	2.7	3.1	7.7	2.6	4.6	9.5	4.6	7.6	5.1	5.1	11.7	4.6
Not at all high	3.5	2.9	4.5	5.5	3.6	3.6	7.4	6.4	10.1	6.0	6.8	4.6	5.9	5.7	7.9	10.2	11.3	6.4	12.1	10.5	8.9	5.1	5.1	10.8	7.1	8.6	8.9	8.9
A little high	18.8	11.8	17.9	17.6	19.6	22.9	22.1	22.7	25.7	23.5	24.5	24.6	18.8	19.1	12.1	18.1	13.2	22.1	19.7	16.3	12.9	13.2	15.4	16.6	12.0	29.1	14.4	14.3
Moderately high	40.1	45.1	45.9	38.2	50.6	43.7	42.4	44.5	37.0	39.3	43.1	43.4	44.0	43.3	39.7	36.1	45.1	31.8	33.6	33.0	27.8	46.7	30.6	35.2	45.9	29.0	32.2	42.9
Very high	36.6	39.5	31.4	38.6	24.2	27.9	27.5	24.3	25.3	28.4	22.5	23.5	27.7	27.0	35.7	31.8	27.8	36.5	27.0	37.5	45.8	25.4	44.3	29.8	29.9	28.2	32.7	29.3
Approx. N =	124	166	223	335	394	360	434	421	343	362	409	407	329	264	156	109	71	66	89	79	85	76	127	119	126	99	99	90
<b>% of All Respondents</b>																												
No use in last 12 months	94.4	94.0	92.8	91.0	87.5	88.4	87.2	87.9	89.4	88.4	87.0	86.4	89.5	91.7	94.2	—	97.1	97.4	96.5	96.8	96.5	96.6	94.8	95.1	94.2	95.1	95.1	95.6
I don't take it to get high	0.1	0.0	0.0	0.0	0.3	0.2	0.1	0.3	0.2	0.3	0.4	0.6	0.4	0.4	0.3	—	0.1	0.1	0.3	0.1	0.2	0.3	0.2	0.4	0.3	0.3	0.6	0.2
Not at all high	0.2	0.2	0.3	0.5	0.5	0.4	0.9	0.8	1.1	0.7	0.9	0.6	0.6	0.5	0.5	—	0.3	0.2	0.4	0.3	0.3	0.2	0.3	0.5	0.4	0.4	0.4	0.4
A little high	1.1	0.7	1.3	1.6	2.5	2.7	2.8	2.7	2.7	2.7	3.2	3.3	2.0	1.6	0.7	—	0.4	0.6	0.7	0.5	0.4	0.4	0.8	0.8	0.7	1.4	0.7	0.6
Moderately high	2.2	2.7	3.3	3.4	6.3	5.1	5.4	5.4	3.9	4.6	5.6	5.9	4.6	3.6	2.3	—	1.3	0.8	1.2	1.1	1.0	1.6	1.6	1.7	2.7	1.4	1.6	1.9
Very high	2.0	2.4	2.3	3.5	3.0	3.2	3.5	2.9	2.7	3.3	2.9	3.2	2.9	2.2	2.1	—	0.8	0.9	0.9	1.2	1.6	0.9	2.3	1.5	1.7	1.4	1.6	1.3
Approx. N =	2214	2767	3097	3722	3142	3105	3400	3473	3235	3114	3142	2992	3130	3179	2685	—	2420	2560	2550	2473	2463	2261	2452	2424	2169	2024	2020	2053
<b>Q. When you take cocaine how long do you usually stay high?<sup>a</sup></b>																												
<b>% of Recent Users</b>																												
Usually don't get high	3.4	2.8	3.6	5.8	5.8	7.2	8.2	8.2	14.5	9.7	9.2	8.7	9.8	12.8	11.3	11.6	21.5	6.6	16.9	10.4	13.0	6.3	10.5	14.1	9.8	15.0	12.1	7.3
One to two hours	31.0	27.6	31.9	33.2	43.3	38.2	45.9	43.2	41.3	43.7	48.6	55.2	44.7	49.3	52.6	52.0	34.0	41.8	42.7	52.8	41.4	51.8	51.3	44.4	39.7	39.8	40.9	48.9
Three to six hours	47.5	46.8	49.4	39.6	36.5	36.0	33.8	34.5	34.1	33.6	31.8	27.7	29.2	25.6	20.9	25.8	32.3	25.0	24.2	20.1	18.7	22.9	24.9	29.6	36.1	28.5	25.0	29.1
Seven to 24 hours	14.4	19.6	13.1	20.9	14.1	17.3	9.8	13.3	8.7	11.8	8.5	7.1	13.0	10.1	9.8	8.1	10.4	20.2	12.9	12.8	21.1	11.5	13.2	6.7	12.9	11.4	18.2	10.8
More than 24 hours	3.7	3.1	1.9	0.5	0.3	1.3	2.3	0.8	1.4	1.1	1.9	1.3	3.3	2.3	5.3	2.5	1.7	6.5	3.3	3.9	5.7	7.5	0.0	5.2	1.5	5.3	3.9	3.9
Approx. N =	125	165	220	331	392	357	432	419	344	360	403	408	329	262	151	108	72	64	92	74	83	69	128	115	126	98	99	86
<b>% of All Respondents</b>																												
No use in last 12 months	94.4	94.0	92.8	91.0	87.5	88.5	87.3	87.9	89.4	88.4	87.1	86.4	89.5	91.7	94.4	—	97.0	97.5	96.4	97.0	96.6	96.9	94.8	95.2	94.2	95.2	95.1	95.8
Usually don't get high	0.2	0.2	0.3	0.5	0.7	0.8	1.0	1.0	1.5	1.1	1.2	1.2	1.0	1.1	0.6	—	0.6	0.2	0.6	0.3	0.4	0.2	0.5	0.7	0.6	0.7	0.6	0.3
One to two hours	1.7	1.7	2.3	3.0	5.4	4.4	5.8	5.2	4.4	5.1	6.2	7.5	4.7	4.1	3.0	—	1.0	1.0	1.5	1.6	1.4	1.6	2.7	2.1	2.3	1.9	2.0	2.1
Three to six hours	2.7	2.8	3.6	3.6	4.6	4.2	4.3	4.2	3.6	3.9	4.1	3.8	3.1	2.1	1.2	—	1.0	0.6	0.9	0.6	0.6	0.7	1.3	1.4	2.1	1.4	1.2	1.2
Seven to 24 hours	0.8	1.2	0.9	1.9	1.8	2.0	1.2	1.6	0.9	1.4	1.1	1.0	1.4	0.8	0.6	—	0.3	0.5	0.5	0.4	0.7	0.4	0.7	0.3	0.7	0.6	0.9	0.5
More than 24 hours	0.2	0.2	0.1	0.0	0.0	0.1	0.3	0.1	0.2	0.1	0.2	0.2	0.3	0.2	0.3	—	0.0	0.2	0.1	0.1	0.2	0.2	0.0	0.2	0.1	0.3	0.2	0.2
Approx. N =	2232	2750	3056	3678	3140	3102	3398	3471	3235	3112	3137	2993	3130	3178	2680	—	2420	2559	2553	2468	2461	2254	2453	2421	2168	2022	2020	2048

NOTE: '—' indicates data not available.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>These questions appear in just one form. They are asked only of respondents who report use of the drug in the prior twelve months (i.e., "recent users").

**TABLE 7-5**  
**Other Narcotics: Trends in Degree and Duration of Feeling High for Twelfth Graders**

Q. When you take opiates other than heroin how high do you usually get? <sup>a</sup>	Class of:																											
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
<b>% of Recent Users</b>																												
I don't take them to get high	4.1	7.6	7.8	10.4	10.0	8.6	14.5	17.8	21.9	22.5	21.3	19.6	28.8	24.5	29.6	36.6	20.5	27.7	25.1	22.7	13.7	23.4	12.8	12.6	14.2	19.6	18.6	15.4
Not at all high	3.6	6.1	2.8	5.9	8.1	10.5	11.6	3.8	9.9	7.5	12.1	12.1	19.1	7.9	12.2	10.1	9.9	26.7	18.0	10.8	13.0	12.3	5.0	9.8	10.6	9.0	0.0	11.6
A little high	8.8	18.3	25.9	17.5	24.3	21.6	30.0	26.6	17.9	29.4	28.5	25.2	18.7	19.3	15.1	18.5	20.6	19.2	12.8	22.8	13.9	20.0	27.4	27.5	14.7	20.8	27.8	23.0
Moderately high	45.0	40.4	37.5	41.4	40.1	41.2	29.4	34.0	34.3	28.1	27.7	24.3	15.5	31.8	27.5	19.5	36.9	14.2	27.9	29.0	34.0	23.4	43.0	26.0	38.3	30.2	31.6	35.3
Very high	38.5	27.5	26.0	24.8	17.5	18.2	14.5	17.7	16.0	12.5	10.4	18.8	17.8	16.6	15.6	15.3	12.1	12.1	16.3	14.8	25.5	20.9	11.8	24.1	22.3	20.4	21.9	14.8
Approx. N =	78	130	124	179	156	165	182	116	94	125	126	104	112	84	66	71	46	74	56	58	51	82	96	113	89	102	82	133
<b>% of All Respondents</b>																												
No use in last 12 months	94.3	94.3	93.6	94.0	94.9	94.5	94.4	96.5	97.0	95.9	95.9	96.4	96.4	97.3	97.5	—	98.1	97.1	97.8	97.7	97.9	96.4	96.0	95.3	95.9	94.9	95.9	93.5
I don't take them to get high	0.2	0.4	0.5	0.6	0.5	0.5	0.8	0.6	0.7	0.9	0.9	0.7	1.0	0.7	0.7	—	0.4	0.8	0.6	0.5	0.3	0.8	0.5	0.6	0.6	1.0	0.8	1.0
Not at all high	0.2	0.3	0.2	0.4	0.4	0.6	0.6	0.1	0.3	0.3	0.5	0.4	0.7	0.2	0.3	—	0.2	0.8	0.4	0.3	0.3	0.4	0.2	0.5	0.4	0.5	0.0	0.8
A little high	0.5	1.0	1.7	1.1	1.2	1.2	1.7	0.9	0.5	1.2	1.2	0.9	0.7	0.5	0.4	—	0.4	0.6	0.3	0.5	0.3	0.7	1.1	1.3	0.6	1.1	1.1	1.5
Moderately high	2.6	2.3	2.4	2.5	2.1	2.3	1.6	1.2	1.0	1.2	1.1	0.9	0.6	0.8	0.7	—	0.7	0.4	0.6	0.7	0.7	0.9	1.7	1.2	1.6	1.5	1.3	2.3
Very high	2.2	1.6	1.7	1.5	0.9	1.0	0.8	0.6	0.5	0.5	0.4	0.7	0.6	0.4	0.4	—	0.2	0.4	0.4	0.3	0.5	0.8	0.5	1.1	0.9	1.0	0.9	1.0
Approx. N =	1368	2281	1938	2983	3045	2983	3277	3353	3115	3048	3065	2911	3091	3144	2655	—	2410	2538	2553	2492	2442	2261	2407	2409	2167	2001	1996	2035
<b>Q. When you take opiates other than heroin how long do you usually stay high?<sup>a</sup></b>																												
<b>% of Recent Users</b>																												
Usually don't get high	6.8	15.4	7.4	24.6	17.8	15.7	24.2	17.0	23.9	23.2	25.1	24.7	41.4	23.7	38.8	38.5	31.3	36.8	36.3	31.7	22.4	27.8	20.6	18.8	21.5	23.1	15.2	22.8
One to two hours	8.8	16.7	32.5	19.3	24.6	29.5	30.4	36.4	26.7	29.3	30.9	30.9	25.9	26.6	18.2	24.0	23.0	26.7	18.1	31.6	23.8	22.7	35.7	26.1	30.1	25.9	36.7	29.7
Three to six hours	56.5	44.1	46.2	50.2	44.3	42.1	33.2	34.0	38.6	38.1	29.9	35.3	24.9	41.4	22.6	29.1	38.2	26.0	29.9	35.2	36.2	32.5	36.1	37.8	29.2	42.9	40.2	33.0
Seven to 24 hours	24.5	20.5	11.1	15.9	12.1	12.4	9.8	12.0	8.4	8.8	13.3	9.2	5.8	7.5	15.6	5.7	7.5	5.6	13.0	0.7	15.4	14.2	7.6	14.4	17.4	3.9	7.8	14.5
More than 24 hours	3.4	3.2	2.8	0.0	1.2	0.2	2.3	0.6	2.4	0.6	0.8	0.0	2.0	0.8	4.8	2.7	0.0	5.0	2.7	0.9	2.3	2.7	0.0	2.9	1.7	4.2	0.0	0.0
Approx. N =	78	130	124	173	151	164	180	116	94	121	128	102	112	79	65	69	49	76	57	60	49	82	96	111	89	97	84	136
<b>% of All Respondents</b>																												
No use in last 12 months	94.3	94.3	93.6	94.0	95.0	94.5	94.5	96.5	97.0	96.0	95.8	96.5	96.4	97.5	97.5	—	98.0	97.0	97.8	97.6	98.0	96.4	96.0	95.4	95.9	95.1	95.8	93.3
Usually don't get high	0.4	0.9	0.5	0.9	0.9	0.9	1.3	0.6	0.7	0.9	1.0	0.9	1.5	0.6	1.0	—	0.6	1.1	0.8	0.8	0.5	1.0	0.8	0.9	0.9	1.1	0.6	1.5
One to two hours	0.5	1.0	2.1	1.2	1.2	1.6	1.7	1.3	0.8	1.2	1.3	1.1	0.9	0.7	0.4	—	0.5	0.8	0.4	0.8	0.5	0.8	1.4	1.2	1.2	1.3	1.5	2.0
Three to six hours	3.2	2.5	3.0	3.0	2.2	2.3	1.8	1.2	1.2	1.5	1.2	1.2	0.9	1.0	0.6	—	0.8	0.8	0.7	0.8	0.7	1.2	1.4	1.7	1.2	2.1	1.7	2.2
Seven to 24 hours	1.4	1.2	0.7	1.0	0.6	0.7	0.5	0.4	0.3	0.3	0.6	0.3	0.2	0.2	0.4	—	0.2	0.2	0.3	0.0	0.3	0.5	0.3	0.7	0.7	0.2	0.3	1.0
More than 24 hours	0.2	0.2	0.2	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1	—	0.0	0.1	0.1	0.0	0.0	0.1	0.0	0.1	0.1	0.2	0.0	0.0
Approx. N =	1368	2281	1938	2883	3040	2982	3275	3353	3116	3043	3067	2908	3092	3139	2654	—	2413	2540	2554	2493	2441	2261	2407	2406	2167	1996	1998	2037

NOTE: '—' indicates data not available.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>These questions appear in just one form. They are asked only of respondents who report use of the drug in the prior twelve months (i.e., "recent users").



**TABLE 7-6**  
**Amphetamines: Trends in Degree and Duration of Feeling High for Twelfth Graders**

Q. When you take amphetamines how high do you usually get? <sup>a</sup>	Class of:																											
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
<b>% of Recent Users</b>																												
I don't take them to get high	9.3	10.7	15.1	14.7	16.8	17.1	20.2	21.0	24.2	22.8	20.4	18.7	20.7	23.9	19.3	15.8	24.7	15.8	18.6	19.9	16.1	30.6	18.1	18.9	19.6	17.3	22.4	27.4
Not at all high	4.6	5.0	7.5	6.2	7.7	8.9	11.5	9.1	11.9	9.3	12.8	10.8	12.2	14.2	14.0	18.8	10.8	19.2	20.5	12.0	17.0	9.3	16.0	12.4	12.9	11.4	11.8	15.3
A little high	26.4	26.1	24.0	25.9	26.5	34.0	31.4	36.8	33.0	34.8	36.7	42.6	40.0	29.1	30.8	30.0	35.5	28.6	30.6	29.1	27.5	25.4	27.3	27.3	26.9	23.5	15.9	23.9
Moderately high	44.6	43.8	39.2	40.2	36.4	30.8	30.6	28.5	27.0	29.5	24.9	23.3	20.6	24.8	24.4	24.9	16.8	23.0	19.9	26.8	28.1	18.3	23.2	25.1	25.9	28.2	27.4	18.6
Very high	15.1	14.4	14.1	13.0	12.6	9.3	6.3	4.6	3.9	3.5	5.2	4.6	6.6	8.0	11.5	10.5	12.1	13.4	10.3	12.2	11.3	16.4	15.3	16.3	14.6	19.6	22.5	14.8
	Approx. N = 410 406 449 542 507 575 788 622 463 418 380 305 265 196 153 131 107 105 127 144 145 138 183 198 141 126 145 146																											
<b>% of All Respondents</b>																												
No use in last 12 months	83.8	84.2	83.7	82.9	83.6	81.2	76.5	82.0	85.6	86.7	87.9	89.8	91.7	93.9	94.4	—	95.7	96.0	95.2	94.3	94.2	94.0	92.6	92.0	93.7	93.9	92.9	93.0
I don't take them to get high	1.5	1.7	2.5	2.5	2.8	3.2	4.8	3.8	3.5	3.0	2.5	1.9	1.7	1.5	1.1	—	1.1	0.6	0.9	1.1	0.9	1.8	1.3	1.5	1.2	1.1	1.6	1.9
Not at all high	0.7	0.8	1.2	1.1	1.3	1.7	2.7	1.6	1.7	1.2	1.6	1.1	1.0	0.9	0.8	—	0.5	0.8	1.0	0.7	1.0	0.6	1.2	1.0	0.8	0.7	0.8	1.1
A little high	4.3	4.1	3.9	4.4	4.3	6.4	7.4	6.6	4.8	4.6	4.5	4.3	3.3	1.8	1.7	—	1.5	1.1	1.5	1.7	1.6	1.5	2.0	2.2	1.7	1.4	1.1	1.7
Moderately high	7.2	6.9	6.4	6.9	6.0	5.8	7.2	5.1	3.9	3.9	3.0	2.4	1.7	1.5	1.4	—	0.7	0.9	1.0	1.5	1.6	1.1	1.7	2.0	1.6	1.7	1.9	1.3
Very high	2.4	2.3	2.3	2.2	2.1	1.7	1.5	0.8	0.6	0.5	0.6	0.5	0.5	0.5	0.6	—	0.5	0.5	0.5	0.7	0.6	1.0	1.1	1.3	0.9	1.2	1.6	1.0
	Approx. N = 2531 2570 2755 3170 3098 3055 3354 3455 3211 3129 3131 2994 3170 3217 2741 — 2473 2609 2634 2538 2514 2300 2490 2482 2233 2058 2053 2101																											
<b>Q. When you take amphetamines how long do you usually stay high?<sup>a</sup></b>																												
<b>% of Recent Users</b>																												
Usually don't get high	10.7	11.2	11.9	14.5	15.4	17.9	24.4	17.5	22.7	25.3	26.1	21.3	24.4	29.3	25.3	30.0	38.8	31.3	33.7	34.6	27.9	32.7	29.0	23.1	21.7	24.1	30.1	36.4
One to two hours	11.4	12.1	15.3	17.0	18.7	19.9	20.3	25.2	23.2	27.0	31.4	36.8	37.4	30.4	36.9	33.2	23.4	32.2	31.5	28.7	23.8	25.1	26.7	26.5	29.0	26.9	27.8	18.2
Three to six hours	37.0	48.4	38.4	39.5	40.1	43.4	38.2	45.5	42.6	35.7	31.2	31.0	23.3	26.0	26.5	22.5	19.0	11.0	25.0	20.7	29.7	27.2	29.8	28.0	37.5	34.2	23.9	22.3
Seven to 24 hours	37.0	26.1	31.6	27.1	23.8	17.7	16.3	11.0	9.7	11.9	10.8	10.1	12.9	13.1	7.2	12.9	12.8	18.1	6.9	10.7	13.6	11.6	12.6	16.9	8.6	14.2	17.0	18.1
More than 24 hours	3.8	2.1	2.9	1.9	2.0	1.1	0.8	0.8	1.8	0.2	0.6	0.8	2.0	1.1	4.2	1.4	6.0	7.5	3.0	5.3	4.9	3.4	1.9	5.5	3.2	0.6	1.1	5.0
	Approx. N = 412 413 446 546 521 583 810 627 478 424 392 309 267 202 154 131 109 102 125 146 147 136 178 195 134 123 143 143																											
<b>% of All Respondents</b>																												
No use in last 12 months	83.8	84.2	83.7	82.9	83.3	81.0	76.0	81.9	85.2	86.5	87.5	89.7	91.6	93.7	94.4	—	95.6	96.1	95.3	94.3	94.2	94.1	92.8	92.1	94.0	94.0	93.0	93.2
Usually don't get high	1.7	1.8	1.9	2.5	2.6	3.4	5.8	3.2	3.4	3.4	3.3	2.2	2.0	1.8	1.4	—	1.7	1.2	1.6	2.0	1.6	1.9	2.1	1.8	1.3	1.4	2.1	2.5
One to two hours	1.8	1.9	2.5	2.9	3.1	3.8	4.9	4.6	3.4	3.7	3.9	3.8	3.1	1.9	2.1	—	1.0	1.3	1.5	1.6	1.4	1.5	1.9	2.1	1.7	1.6	1.9	1.2
Three to six hours	6.0	7.6	6.3	6.7	6.7	8.3	9.2	8.2	6.3	4.8	3.9	3.2	2.0	1.6	1.5	—	0.8	0.4	1.2	1.2	1.7	1.6	2.1	2.2	2.3	2.0	1.7	1.5
Seven to 24 hours	6.0	4.1	5.1	4.6	4.0	3.4	3.9	2.0	1.4	1.6	1.3	1.0	1.1	0.8	0.4	—	0.6	0.7	0.3	0.6	0.8	0.7	0.9	1.3	0.5	0.9	1.2	1.2
More than 24 hours	0.6	0.3	0.5	0.3	0.3	0.2	0.2	0.2	0.3	0.0	0.1	0.1	0.2	0.1	0.2	—	0.3	0.3	0.1	0.3	0.3	0.2	0.1	0.4	0.2	0.0	0.1	0.3
	Approx. N = 2543 2614 2736 3193 3111 3063 3375 3460 3227 3135 3142 2998 3172 3223 2742 — 2475 2607 2633 2539 2516 2298 2485 2479 2226 2055 2051 2098																											

NOTE: '—' indicates data not available.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>These questions appear in just one form. They are asked only of respondents who report use of the drug in the prior twelve months (i.e., "recent users").

**TABLE 7-7**  
**Tranquilizers: Trends in Degree and Duration of Feeling High for Twelfth Graders**

Q. When you take tranquilizers how high do you usually get? <sup>a</sup>	Class of:																											
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
<b>% of Recent Users</b>																												
I don't take them to get high	17.9	18.5	23.6	23.0	16.8	14.7	19.1	25.3	20.2	24.3	21.7	30.7	30.4	42.7	34.8	34.5	48.3	31.0	29.0	30.5	26.6	18.3	19.3	19.6	11.3	9.4	20.1	16.6
Not at all high	11.1	16.2	12.4	14.0	15.0	17.6	17.0	17.3	17.1	16.7	17.6	24.0	20.8	12.9	22.6	11.5	13.9	18.6	29.5	19.2	18.6	9.4	13.4	8.0	7.9	10.9	11.8	10.4
A little high	30.1	24.1	29.5	27.0	27.0	27.5	28.7	30.0	27.7	29.9	37.5	19.2	18.4	22.4	16.6	26.1	19.7	16.1	19.0	22.0	18.9	34.0	25.2	24.9	22.1	35.2	21.4	17.2
Moderately high	28.9	31.4	25.8	29.1	30.5	29.8	22.9	18.5	26.0	21.4	19.8	17.3	18.2	14.1	21.5	18.2	17.3	21.2	14.6	24.4	24.0	28.1	23.9	37.9	39.7	33.7	29.4	34.2
Very high	11.9	9.8	8.7	6.8	10.8	10.5	12.4	8.8	9.0	7.7	3.4	8.9	12.2	7.9	4.5	9.7	0.8	13.2	7.8	4.0	11.8	10.2	18.2	9.5	19.1	10.9	17.3	21.6
Approx. N =	159	213	243	267	218	205	223	154	128	115	144	122	125	99	68	75	51	57	68	58	67	54	83	80	77	69	95	98
<b>% of All Respondents</b>																												
No use in last 12 months	89.4	89.7	89.2	90.1	92.9	93.2	93.3	95.5	96.0	96.3	95.4	95.9	96.0	96.9	97.5	—	97.9	97.8	97.4	97.7	97.3	97.6	96.6	96.8	96.5	96.6	95.3	95.3
I don't take them to get high	1.9	1.9	2.5	2.3	1.2	1.0	1.3	1.1	0.8	0.9	1.0	1.3	1.2	1.3	0.9	—	1.0	0.7	0.8	0.7	0.7	0.4	0.6	0.6	0.4	0.3	0.9	0.8
Not at all high	1.2	1.7	1.3	1.4	1.1	1.2	1.1	0.8	0.7	0.6	0.8	1.0	0.8	0.4	0.6	—	0.3	0.4	0.8	0.4	0.5	0.2	0.5	0.3	0.3	0.4	0.6	0.5
A little high	3.2	2.5	3.2	2.7	1.9	1.9	1.9	1.4	1.1	1.1	1.7	0.8	0.7	0.7	0.4	—	0.4	0.4	0.5	0.5	0.5	0.8	0.9	0.8	0.8	1.2	1.0	0.8
Moderately high	3.1	3.2	2.8	2.9	2.2	2.0	1.5	0.8	1.0	0.8	0.9	0.7	0.7	0.4	0.5	—	0.4	0.5	0.4	0.6	0.6	0.7	0.8	1.2	1.4	1.1	1.4	1.6
Very high	1.3	1.0	0.9	0.7	0.8	0.7	0.8	0.4	0.4	0.3	0.2	0.4	0.5	0.2	0.1	—	0.0	0.3	0.2	0.1	0.3	0.2	0.6	0.3	0.7	0.4	0.8	1.0
Approx. N =	1500	2068	2250	2697	3073	3040	3330	3420	3186	3074	3119	2963	3141	3199	2710	—	2448	2571	2598	2523	2500	2292	2469	2468	2205	2046	2033	2088
<b>Q. When you take tranquilizers how long do you usually stay high?<sup>a</sup></b>																												
<b>% of Recent Users</b>																												
Usually don't get high	29.9	33.0	31.6	32.7	27.8	27.9	31.1	31.9	38.8	36.9	36.8	46.0	50.4	48.3	45.3	35.8	47.2	48.7	50.2	43.6	34.0	30.6	22.1	25.1	11.5	13.4	25.2	23.8
One to two hours	17.6	24.1	22.5	26.0	21.3	25.4	27.2	25.0	21.6	25.7	24.7	25.3	20.0	19.3	19.9	20.7	20.5	19.1	19.1	18.7	25.4	22.6	35.2	31.4	36.4	34.3	19.0	27.6
Three to six hours	42.9	35.6	38.8	32.3	40.2	32.4	32.1	33.3	32.5	27.8	33.5	22.4	21.8	23.7	28.5	31.1	25.0	18.9	19.1	31.3	28.5	32.7	35.7	36.0	41.9	45.8	38.6	35.1
Seven to 24 hours	9.5	6.5	6.1	8.7	9.4	14.2	9.5	9.8	6.3	9.5	3.5	4.4	7.3	8.0	3.0	9.7	5.6	12.2	11.6	3.0	8.9	11.5	6.1	4.7	9.0	4.6	11.0	12.6
More than 24 hours	0.0	0.7	1.0	0.4	1.3	0.0	0.0	0.0	0.8	0.0	1.6	1.9	0.4	0.8	3.3	2.8	1.6	1.2	0.0	3.5	3.2	2.6	1.0	2.9	1.3	1.9	6.3	1.0
Approx. N =	158	214	242	269	221	200	221	151	132	114	134	121	129	95	65	67	48	55	72	51	62	54	79	81	74	70	95	98
<b>% of All Respondents</b>																												
No use in last 12 months	89.4	89.7	89.2	90.1	92.8	93.4	93.4	95.6	95.9	96.3	95.7	95.9	95.9	97.0	97.6	—	98.0	97.9	97.2	98.0	97.5	97.7	96.8	96.7	96.6	96.6	95.3	95.3
Usually don't get high	3.2	3.4	3.4	3.2	2.0	1.8	2.1	1.4	1.6	1.4	1.6	1.9	2.1	1.4	1.1	—	0.9	1.0	1.4	0.9	0.8	0.7	0.7	0.8	0.4	0.5	1.2	1.1
One to two hours	1.9	2.5	2.4	2.6	1.5	1.7	1.8	1.1	0.9	1.0	1.1	1.0	0.8	0.6	0.5	—	0.4	0.4	0.5	0.4	0.6	0.5	1.1	1.0	1.2	1.2	0.9	1.3
Three to six hours	4.5	3.7	4.2	3.2	2.9	2.1	2.1	1.5	1.3	1.0	1.4	0.9	0.9	0.7	0.7	—	0.5	0.4	0.5	0.6	0.7	0.8	1.1	1.2	1.4	1.6	1.8	1.7
Seven to 24 hours	1.0	0.7	0.7	0.9	0.7	0.9	0.6	0.4	0.3	0.4	0.1	0.2	0.3	0.2	0.1	—	0.1	0.3	0.3	0.1	0.2	0.3	0.2	0.2	0.3	0.2	0.5	0.6
More than 24 hours	0.0	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	—	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.3	0.1
Approx. N =	1491	2078	2241	2717	3075	3034	3328	3417	3190	3072	3110	2962	3144	3196	2707	—	2446	2570	2602	2516	2495	2291	2465	2468	2202	2047	2032	2088

NOTE: '—' indicates data not available.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>These questions appear in just one form. They are asked only of respondents who report use of the drug in the prior twelve months (i.e., "recent users").

**TABLE 7-8**  
**Alcohol: Trends in Degree and Duration of Feeling High for Twelfth Graders**

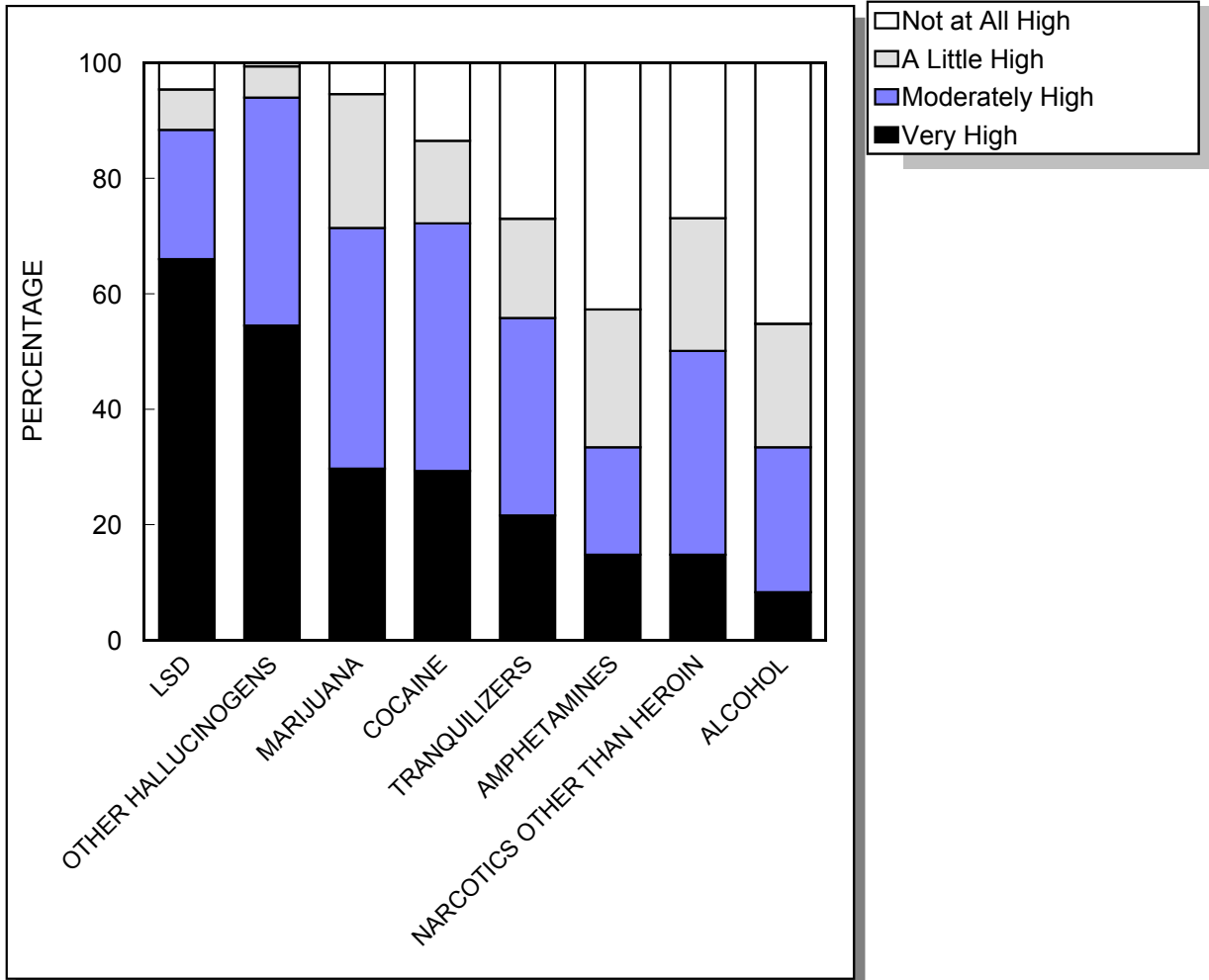
<i>Q. When you drink alcoholic beverages how high do you usually get?<sup>a</sup></i>	<i>Class of:</i>																											
	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>
<i>% of Recent Users</i>																												
Not at all high	23.6	21.6	20.6	19.1	19.6	20.7	18.9	18.9	18.8	19.0	19.7	18.5	18.8	20.0	22.1	23.0	20.6	24.2	23.8	19.7	20.7	23.2	22.0	20.6	21.1	22.4	20.5	23.2
A little high	33.8	32.3	32.8	33.9	33.6	32.6	33.8	32.6	35.8	34.0	34.8	34.7	34.4	34.2	34.4	32.3	36.8	32.5	32.2	32.7	32.6	29.9	28.9	29.8	27.3	26.1	26.7	30.1
Moderately high	35.9	38.0	39.6	39.9	38.7	39.7	41.4	40.9	38.8	39.2	38.5	39.8	38.8	38.2	35.9	36.2	34.0	35.6	36.5	38.3	36.5	35.5	37.5	37.5	41.7	38.8	40.9	35.1
Very high	6.6	8.1	7.0	7.1	8.1	7.0	5.8	7.5	6.7	7.8	7.1	7.1	8.0	7.6	7.6	8.5	8.6	7.7	7.5	9.2	10.1	11.4	11.6	12.1	10.0	12.7	11.8	11.7
	<i>Approx. N = 2419 2368 2578 3124 2764 2709 2912 2958 2808 2601 2618 2531 2718 2755 2211 1965 1898 1965 1960 1866 1867 1664 1915 1874 1619 1567 1591 1530</i>																											
<i>% of All Respondents</i>																												
No use in last 12 months	15.2	14.3	13.0	12.3	12.5	13.2	14.7	14.1	14.1	17.1	16.1	16.0	14.6	14.8	18.8	21.2	22.7	23.6	25.4	26.4	25.7	28.2	24.7	25.6	27.0	26.2	24.2	28.7
Not at all high	20.0	18.5	17.9	16.8	17.2	18.0	16.2	16.2	16.2	15.8	16.5	15.5	16.0	17.0	18.0	18.1	15.9	18.5	17.8	14.5	15.4	16.6	16.6	15.3	15.4	16.6	15.6	16.5
A little high	28.7	27.7	28.5	29.7	29.4	28.3	28.9	28.0	30.7	28.2	29.2	29.1	29.4	29.2	28.0	25.5	28.5	24.8	24.0	24.1	24.2	21.5	21.8	22.2	19.9	19.3	20.2	21.4
Moderately high	30.4	32.6	34.5	35.0	33.8	34.4	35.3	35.2	33.3	32.5	32.3	33.4	33.1	32.6	29.2	28.5	26.3	27.2	27.2	28.2	27.1	25.5	28.2	27.9	30.5	28.6	31.0	25.1
Very high	5.6	6.9	6.1	6.2	7.1	6.1	5.0	6.5	5.7	6.5	5.9	6.0	6.8	6.5	6.1	6.7	6.7	5.9	5.6	6.8	7.5	8.2	8.7	9.0	7.3	9.4	9.0	8.3
	<i>Approx. N = 2853 2763 2963 3562 3159 3122 3413 3443 3268 3137 3120 3011 3183 3232 2721 2493 2454 2572 2627 2533 2514 2318 2542 2517 2217 2123 2099 2145</i>																											
<i>Q. When you drink alcoholic beverages how long do you usually stay high?<sup>a</sup></i>																												
<i>% of Recent Users</i>																												
Usually don't get high	25.7	24.6	22.6	21.3	21.7	22.7	20.9	20.5	21.4	20.3	21.5	20.9	20.8	22.9	24.2	24.7	23.0	27.0	26.1	22.5	23.2	25.3	23.5	22.6	22.5	24.6	21.5	24.9
One to two hours	40.5	38.5	38.8	39.8	41.9	39.5	40.3	41.3	40.8	42.2	41.5	40.6	43.8	42.0	41.3	39.4	40.1	37.3	38.8	40.5	36.7	33.1	33.6	36.8	32.3	32.2	33.7	33.7
Three to six hours	30.1	33.8	34.8	35.7	32.7	33.8	35.6	34.4	33.7	33.1	33.5	34.9	31.5	32.1	31.6	31.7	31.7	30.7	30.4	32.2	34.2	35.7	36.9	34.5	39.6	37.0	38.5	35.7
Seven to 24 hours	3.4	3.0	3.5	3.1	3.4	3.8	3.1	3.4	3.9	4.0	3.1	3.2	3.7	2.9	2.8	4.0	4.6	4.7	4.3	4.2	5.4	5.3	5.2	5.7	5.1	5.4	5.6	5.1
More than 24 hours	0.2	0.2	0.3	0.1	0.2	0.2	0.1	0.4	0.3	0.3	0.4	0.4	0.2	0.1	0.2	0.3	0.6	0.3	0.3	0.6	0.6	0.5	0.9	0.5	0.5	0.9	0.7	0.6
	<i>Approx. N = 2403 2358 2547 3098 2746 2697 2892 2947 2792 2588 2608 2509 2711 2748 2202 1949 1884 1951 1950 1857 1849 1657 1897 1853 1614 1552 1586 1523</i>																											
<i>% of All Respondents</i>																												
No use in last 12 months	15.2	14.3	13.0	12.3	12.6	13.3	14.8	14.1	14.1	17.1	16.1	16.1	14.7	14.8	18.8	21.3	22.8	23.7	25.5	26.4	25.9	28.3	24.8	25.8	27.0	26.4	24.3	28.8
Usually don't get high	21.8	21.1	19.7	18.7	19.0	19.7	17.8	17.6	18.3	16.9	18.0	17.5	17.8	19.5	19.6	19.4	17.8	20.6	19.5	16.5	17.2	18.2	17.6	16.8	16.4	18.1	16.3	17.7
One to two hours	34.3	33.0	33.8	34.9	36.6	34.2	34.3	35.5	35.0	35.0	34.8	34.1	37.4	35.8	33.5	31.0	31.0	28.5	28.9	29.8	27.2	23.7	25.3	27.3	23.6	23.7	25.5	24.0
Three to six hours	25.5	29.0	30.3	31.3	28.6	29.3	30.4	29.6	28.9	27.4	28.1	29.3	26.9	27.3	25.6	24.9	24.4	23.4	22.7	23.7	25.3	25.6	27.7	25.6	28.9	27.2	29.2	25.5
Seven to 24 hours	2.9	2.6	3.0	2.7	3.0	3.3	2.7	2.9	3.3	3.4	2.6	2.7	3.2	2.5	2.2	3.2	3.5	3.6	3.2	3.1	4.0	3.8	3.9	4.2	3.7	3.9	4.2	3.6
More than 24 hours	0.2	0.2	0.3	0.1	0.2	0.2	0.1	0.3	0.2	0.2	0.3	0.4	0.2	0.1	0.2	0.2	0.5	0.2	0.2	0.4	0.4	0.4	0.7	0.4	0.4	0.7	0.5	0.4
	<i>Approx. N = 2834 2751 2928 3532 3142 3109 3393 3431 3252 3124 3110 2990 3177 3226 2712 2477 2441 2558 2616 2525 2496 2311 2524 2497 2211 2108 2095 2138</i>																											

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>These questions appear in just one form. They are asked only of respondents who report use of the drug in the prior twelve months (i.e., "recent users").

FIGURE 7-1

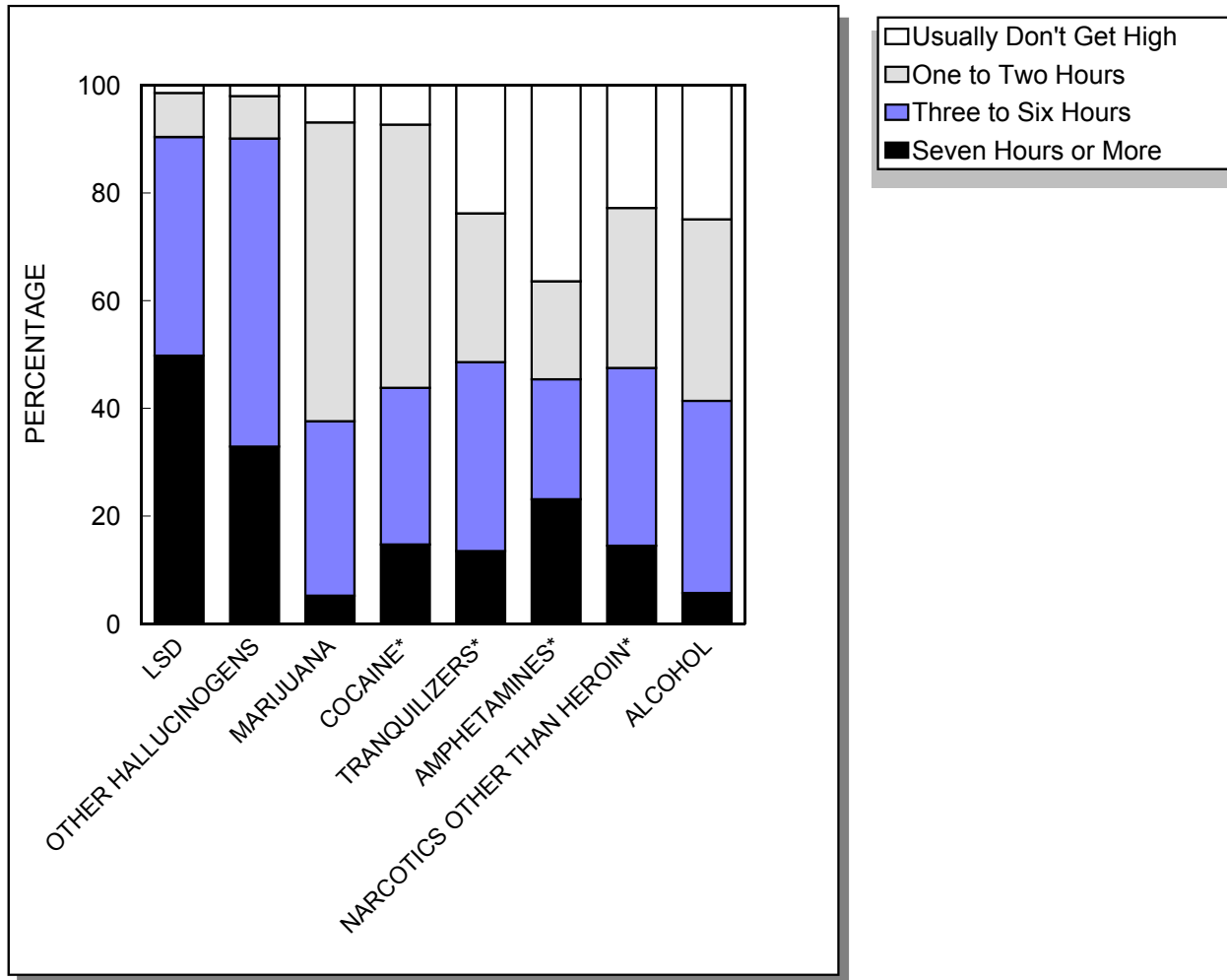
**Degree of Drug Highs Attained by Recent Users  
Twelfth Graders, 2002**



NOTE: Data are based on answers from respondents reporting any use of the drug in the prior 12 months. Heroin is not included in this figure because these particular questions are not asked of the small number of heroin users.

FIGURE 7-2

**Duration of Drug Highs Attained by Recent Users  
Twelfth Graders, 2002**

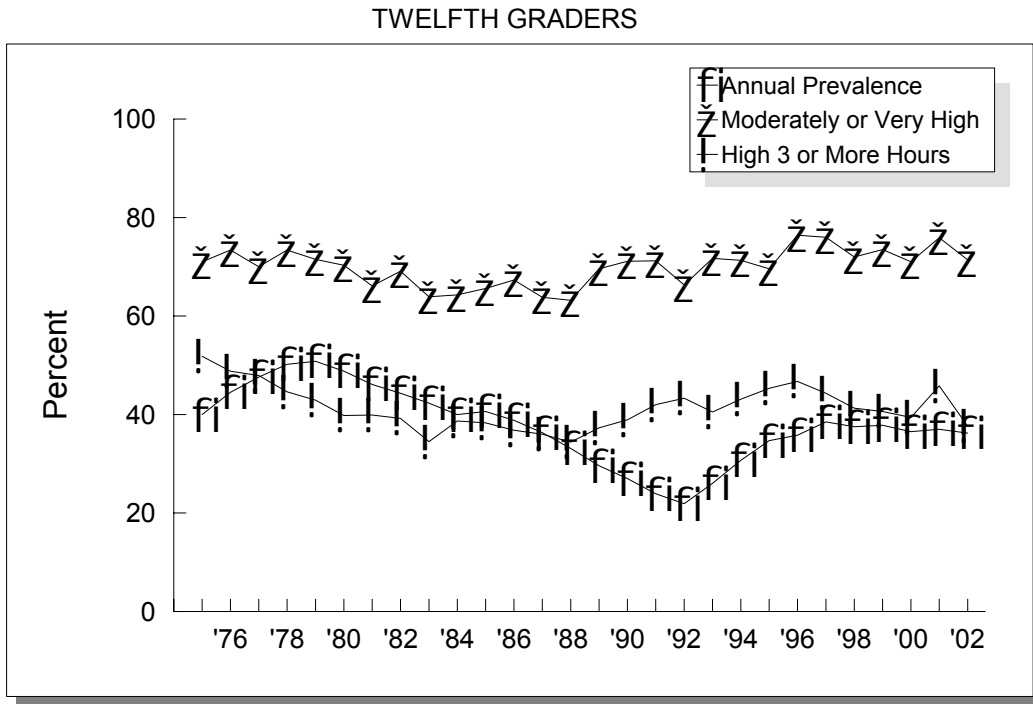


\*For this drug, an additional response category is included in the questionnaire which reads "I don't take it to get high". In the above figure, the data for those who select this response are included in the "usually don't get high" category.

NOTE: Data are based on answers from respondents reporting any use of the drug in the prior 12 months. Heroin is not included in this figure because these particular questions are not asked of the small number of heroin users.

FIGURE 7-3

**Trends in Annual Prevalence of Marijuana, Percent of Recent Users Getting Moderately or Very High, and Percent of Recent Users Staying High Three or More Hours for Twelfth Graders**



## Chapter 8

### ATTITUDES AND BELIEFS ABOUT DRUG USE

One of the Monitoring the Future study's most important theoretical contributions to the general understanding of young people's drug use is a demonstration that beliefs and attitudes about drugs are determinants of both the rise and the fall of drug use. Because we believed that certain attitudes and beliefs about drugs might prove to be important in explaining drug use, we allocated a considerable amount of questionnaire content to their measurement at the study's 1975 inception. This investment has yielded great dividends in the years since then.

In this section we present the cross-time results for three of these important sets of attitude and belief questions: (a) students' beliefs about how *harmful* the various kinds of drug use are for the user; (b) the degree to which students personally *disapprove* of various kinds of drug use; and (c) seniors' attitudes about various forms of *legal prohibition*. Chapter 9 presents results on the closely related topics of parents' and friends' attitudes about drugs, as students perceive them.

The data presented next show inverse relationships in any given year, at the aggregate level, between (a) the level of reported use of a drug and (b) the level of perceived risk and disapproval of using that drug. For example, of the illicit drugs, marijuana has the highest level of use and one of the lowest levels of perceived risk and disapproval of use. These relationships suggest that individuals who believe that the use of a particular drug involves risk of harm and/or who disapprove of its use are less likely to use that drug; indeed, strong correlations also exist at the individual level between use of a drug and attitudes and beliefs about those drugs. Those seniors who use a given drug are less likely to disapprove of its use and to see its use as dangerous.

Many of the attitudes and beliefs about drug use reported next have changed dramatically during the life of the study, as have actual drug-using behaviors. Beginning in 1979, scientists, policymakers and, in particular, the electronic and print media gave considerable attention to young people's increasing level of regular marijuana use documented by this study and to the potential hazards associated with such use. As discussed later in this chapter, seniors' attitudes and beliefs about the regular use of marijuana shifted in a more conservative direction after 1979—a shift that coincided with a reversal in the previous rapid rise of daily use and that very likely reflected the impact of the increased public attention. Between 1986 and 1987, a similar and even more dramatic shift occurred for cocaine use and continued for some years. During much of the 1990s, however, there was an important turnaround or “relapse” in these attitudes, accompanied by increased use of quite a number of the illicit drugs, in particular marijuana.

#### PERCEIVED HARMFULNESS OF DRUG USE

##### Beliefs About Harmfulness Among Twelfth Graders

- For many drugs, the level of risk attributed to use varies considerably with the level of use being considered. Expecting this to be the case, we structured the questions about illicit drugs to differentiate among “using once or twice,” “using occasionally,” and

“using regularly.” Questions about the harmfulness of alcohol and tobacco use also specify levels of use appropriate to those substances.

- A substantial majority of high school seniors perceive that *regular* use of **any of the illicit drugs** entails a great risk of harm for the user. As Table 8-2 shows, between 84% and 89% of the seniors perceive a great risk of harm from regular use of **cocaine**, **crack**, **cocaine powder**, and **heroin**. About one half to three quarters of seniors attribute great risk to regular use of **LSD**, **amphetamines**, and **barbiturates** (74%, 65%, and 49%, respectively).
- Regular use of **marijuana** is judged to involve a great risk to the user by just over half (53%) of all seniors.
- About three quarters of all seniors (74%) now judge smoking one or more packs of **cigarettes** per day as entailing a great risk of harm for the user.
- Regular use of **alcohol** is more explicitly defined in several questions providing specificity on the amount of use. About one fifth of seniors (21%) associate great risk of harm with having one or two drinks nearly every day, about two fifths (42%) think there is great risk involved in having five or more drinks once or twice each weekend, and about three fifths (59%) think the user takes a great risk in consuming four or five drinks nearly every day. It is noteworthy that about two fifths do not view even heavy daily drinking as entailing great risk.
- Far fewer respondents feel that a person runs a great risk of harm by trying a drug once or twice—what we refer to here as *experimental use*. Still, substantial proportions of high school seniors view even the experimental use of most of the illicit drugs as risky. The percentages associating great risk with experimental use rank as follows: 57% for **steroids**, 56% for **heroin**, 54% for **ice**, 52% for **ecstasy**, 51% for **cocaine** and **crack**, 50% for **cocaine powder**, 48% for **PCP**, 37% for **LSD**, 34% for **amphetamines**, and 26% for **barbiturates**.
- By way of contrast, only 16% of seniors see experimenting with **marijuana** as entailing great risk.
- Just 7.6% of seniors believe there is much risk involved in trying an **alcoholic beverage** once or twice.

### Beliefs About Harmfulness Among Eighth and Tenth Graders

An abbreviated set of the same questions on harmfulness has been asked of eighth and tenth graders since 1991. Questions were also added in 1991 about the perceived harmfulness of using **inhalants** (see Table 8-1). Other questions regarding perceived risk were added in 1993 about **LSD** use, in 1995 about use of **heroin without a needle**, in 1999 about **smoking one to five cigarettes per day**, and in 2001 about **ecstasy** use. Although in general the findings are quite similar to those for seniors, there are some interesting differences.



- The most important difference is observed for **regular cigarette smoking**. Unfortunately, perceived risk is lowest at the ages when initiation is most likely to occur: while nearly three quarters of seniors (74%) see great risk in smoking a pack a day or more, only 64% of tenth graders and 58% of eighth graders do.
- Relatively few students see great risk in **smoking one to five cigarettes per day**: 33% of the eighth graders and 35% of the tenth graders. (Twelfth graders are not asked this question.)
- Regular use of **smokeless tobacco** is viewed as entailing great risk by about 39% of eighth graders, 47% of tenth graders, and 43% of twelfth graders, which means that over half do not see great risk of harm. Again, because this behavior is often initiated at early ages, these figures are disturbingly low.
- In contrast to tobacco use, the younger students, particularly eighth graders, are somewhat *more* likely than seniors to see **marijuana** use as dangerous. For example, in 2002 twice as many eighth graders (46%) as twelfth graders (23%) see occasional marijuana use as entailing great risk of harm.
- Tenth graders are most likely to see the use of **cocaine powder** and **crack** as dangerous. This unusual pattern has been replicated every year since 1991.
- Similarly, seeing the use of **heroin** (without using a needle) as dangerous is highest in tenth grade and has been since this question was added in 1995.
- Eighth- and tenth-grade students are slightly more likely than twelfth graders to see weekend **binge drinking** as dangerous: 56% for eighth graders, 52% for tenth graders, and 42% for twelfth graders. The younger students are also somewhat more likely than seniors to see **daily drinking** (one or two drinks nearly every day) and experimentation as risky.
- The pattern for **ecstasy** use is similar to that for cigarettes, with younger students seeing less risk in its use than seniors: 39% of eighth graders and 44% of tenth graders see great risk in trying ecstasy compared to 52% of twelfth graders. Because twelfth graders are considerably more likely to have been exposed to ecstasy use and its consequences, this differential might be used effectively in some prevention messages to younger students.
- Experimentation with **inhalants** is seen as dangerous by relatively low proportions of eighth and tenth graders (43% and 49%). (The question about risk is not asked of twelfth graders.)

## TRENDS IN PERCEIVED HARMFULNESS OF DRUG USE

### Trends in Perceived Harmfulness Among Twelfth Graders

Several very important trends in student beliefs about the dangers associated with using various drugs have occurred over the life of the study. (See Table 8-2 and Figures 8-1a through 8-11a.)

- Some of the most important trends have involved *marijuana* use. (See Figure 8-1a.) From the beginning of the study in 1975 through 1978, the degree of harmfulness perceived to be associated with all levels of marijuana use declined as use increased sharply. (See Figure 8-4.) In 1979, for the first time, the proportion of seniors seeing risk to the user increased. This increase in perceived risk preceded an appreciable downturn in use (which began a year later in 1980) and continued fairly steadily through 1991, as use fell dramatically. However, in 1992 perceived risk began to drop and, while use continued to fall that year, the drop in perceived risk presaged a sharp increase in use beginning in 1993. As Figures 8-1a and 8-4 illustrate, perceived risk continued to drop until 1997 and use continued to rise until 1997. We believe these changes in beliefs about the harmfulness of marijuana use played a critical role in causing both the downturn and the subsequent upturn in use. In both cases, the reversal in perceived risk preceded the reversal in actual use by a year, as we have documented in the present series of monographs.
- In the earlier years of this study, the most impressive increase (in absolute terms) in perceived risk occurred for *regular marijuana use*. The proportion of seniors who viewed regular marijuana use as involving a great risk doubled in just seven years, from 35% to 70% between 1978 and 1985. Subsequently, the proportion increased more slowly, reaching 79% by 1991. The dramatic change between those years occurred during a period when a substantial amount of scientific and media attention was devoted to the potential dangers of heavy marijuana use. Young people also had ample opportunity for vicarious learning about the effects of heavy use through observation, because such use was widespread among their peers. (Recall that one in nine seniors was an active daily marijuana user in 1978.) Concerns about the harmfulness of occasional and experimental use also increased, and those increases were even larger in proportional terms, though not in absolute terms. For example, the proportion of seniors seeing great risk in *trying marijuana* rose from 8.1% in 1978 to 27% in 1991, and for *occasional marijuana use* it rose from 12% to 41% over the same interval.

Several factors offer possible explanations for the turnaround and decline in perceived risk of marijuana use during the early 1990s. First, some of the forces that gave rise to the earlier increases in perceived risk became less influential: (a) because of lower use rates overall, fewer students had opportunities for vicarious learning by observing firsthand the effects of heavy marijuana use among their peers; (b) media coverage of the harmful effects of drug use, and of incidents resulting from drug use (particularly marijuana), decreased substantially in the early 1990s (as has been documented by media surveys of national news programs); (c) media coverage of the anti-drug advertising campaign of the Partnership for a Drug-Free America also declined appreciably (as has been documented by both the Partnership and our own data from seniors on their levels

of recalled exposure to such ads); and, (d) congressional funding for drug abuse prevention programs and curricula in the schools was cut appreciably in the early 1990s. In addition, forces encouraging use became more visible; in particular, a number of rap, grunge, and other rock groups started to sing the praises of using marijuana (and sometimes other drugs), perhaps influencing young people to think that using drugs might not be so dangerous after all. Finally, the drug experiences of many parents may have inhibited them from discussing drugs with their children and may have caused them uncertainty in knowing how to handle the apparent hypocrisy of telling their children not to do what they themselves did as teens. We believe that all of these factors may have contributed to the resurgence of marijuana use in the 1990s.

By the mid-1990s many of these sources of influence had reversed direction once again, laying the groundwork for an end to the rise in marijuana use (and illicit drug use more generally). First, because there was considerably more use among young people and among many of their public role-model groups, the opportunity for vicarious learning by observing the consequences of use began to increase. And as this study and others began to call the public's attention to the resurgence of the drug epidemic among youth, news stories on the subject increased substantially. Other institutions also changed their ways. The recording industry appeared to be producing fewer pro-drug lyrics and messages, in large part because of growing concern with overdose deaths among their artists. (A similar dynamic seems to have occurred in the fashion industry with the resulting demise of "heroin chic.") Various government initiatives to prevent drug use by young people were also launched, including the Department of Health and Human Services (DHHS) Secretary's Initiative to Prevent Marijuana Use. Federal funding for drug prevention in the schools also increased appreciably.

In addition, parents have been exhorted repeatedly in recent years to talk to their children about drugs, and it appears from recent surveys that more of them have done so. Finally, in the late 1990s, a new federally sponsored media campaign involving paid advertising was initiated. Data from Monitoring the Future indicate that the campaign has been reaching increasing numbers of young people.<sup>68</sup>

- Trends in the perceived risk of regular marijuana use and in 30-day prevalence of use are combined in Figure 8-4 in order to illustrate more clearly their degree of covariance over time, which we interpret as reflecting a causal connection.<sup>69</sup> The trend line for the

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<sup>68</sup>Johnston, L. D. (2002, June 19). Written and oral testimony presented at hearings on the National Youth Anti-Drug Media Campaign, held by the Treasury and General Government Subcommittee on Appropriations of the U.S. Senate Appropriations Committee. Published in *The Congressional Record*.

<sup>69</sup>We have addressed an alternate hypothesis that a general shift toward a more conservative lifestyle might have accounted for the shifts in both attitudes and behaviors. The empirical evidence tended to contradict that hypothesis. See Bachman, J. G., Johnston, L. D., O'Malley, P. M., & Humphrey, R. H. (1988). Explaining the recent decline in marijuana use: Differentiating the effects of perceived risks, disapproval, and general lifestyle factors. *Journal of Health and Social Behavior*, 29, 92-112. Johnston also showed that an increasing proportion of the quitters and abstainers from marijuana use reported concern over the physical and psychological consequences of use as reasons for their nonuse. See Johnston, L. D. (1982). A review and analysis of recent changes in marijuana use by American young people, in *Marijuana: The national impact on education* (pp. 8-13). New York: American Council on Marijuana. The role of perceived risk in the period of more recent increase in marijuana use is addressed in Bachman, J. G., Johnston, L. D., & O'Malley, P. M. (1998). Explaining the recent increases in students' marijuana use: The impacts of perceived risks and disapproval from 1976 through 1996. *American Journal of Public Health*, 88, 887-892.

perceived availability of marijuana is included in Figure 8-4 to show its relative stability at a very high level and, thus, its inability to explain the substantial fluctuations in usage levels over the past 28 years.

We have hypothesized that perceived risk operates not only directly on the individual's use but also indirectly through its impact on personal disapproval. In turn, personal disapproval operates directly on use and, in the collective, indirectly by influencing peer norms. Presumably there is some lag in these indirect effects: while perceived risk began to fall in 1992, personal disapproval did not begin to decline for experimental marijuana use until 1993, when it dropped sharply and use rose sharply. These shifts continued through 1997. Since 1997, perceived risk has declined some for occasional and especially for regular use of marijuana, while actual use has also declined slightly (by about 2 percentage points in 2002 for all three measures—monthly, annual, and lifetime). This pattern is, of course, not consistent with the earlier findings of risk and use moving in opposite directions. The decline in use of marijuana without a corresponding (or leading) increase in perceived risk associated specifically with that drug may reflect some general decrease in young people's motivation to use drugs or possibly a change in some other predisposing factor, such as cigarette smoking, which is strongly correlated with marijuana use.

- Like marijuana, *cocaine* has shown a pattern of diverging trends between perceived risk and actual use in recent years. (See Figure 8-5.) First, the percentage who perceived great risk in *trying cocaine* once or twice dropped steadily from 43% to 31% between 1975 and 1980, a period of rapidly increasing use. However, rather than reversing sharply, as did perceived risk for marijuana use, perceived risk for experimental cocaine use moved rather little from 1980 to 1986, corresponding to a fairly stable period in actual use. Then, from 1986 to 1987, perceived risk for experimenting with cocaine did jump sharply from 34% to 48% in a single year, and in that year the first significant decline in use took place (see Figure 8-5). From 1987 to 1990, perceived risk continued to rise as use fell. Perceived risk peaked around 1990 or 1991 and then decreased slightly until 1995, when a significant decline in perceived risk of trying cocaine occurred. Perceived risk was stable between 1995 and 1998, declined slightly until 2000, and leveled since then. Use increased through 1999 and declined in 2000, and since then there has been little change in use.
- Trends in attitudes toward *crack* and *cocaine powder* use have been similar to those toward cocaine use. Crack use showed some decline in perceived risk through 1999 to 48%. Since then, perceived risk has increased slightly, to 51% in 2002. (We believe that some “generational forgetting” of the hazards of crack may be operating here.)
- We believe these changes in beliefs had an important impact on behavior. As Figure 8-2a illustrates, perceived risk for *regular cocaine use* began to rise in the 1980s, increasing gradually from 69% in 1980 to 82% in 1986; however, that fairly substantial change did not translate into a change in actual behavior, and we believe the explanation is that very few high school seniors were regular users or ever expected to be. Thus, as we had predicted earlier, it was not until seniors' attitudes about behaviors they saw as relevant

to themselves began to change (i.e., attitudes about experimental and occasional cocaine use) that the behaviors also began to shift.<sup>70, 71</sup> Figure 8-5 shows trends in perceived risk, perceived availability, and actual use simultaneously—again, to illustrate that shifts in perceived risk could explain the downturn in use while shifts in availability could not.

We attribute changes in actual cocaine use between 1986 and 1991 to changes in risk associated with experimental and occasional use. We believe the changes in these attitudes resulted from three factors: (a) the greatly increased media coverage of cocaine use and its dangers that occurred in that interval (particularly in 1986), (b) an increasing number of anti-drug, and specifically anti-cocaine, “spots,” and (c) the widely publicized 1986 deaths, attributed to cocaine use, of sports stars Len Bias and Don Rogers. The death of the sports stars, we believe, helped to bring home the notions, first, that no one—regardless of age or physical condition—is invulnerable to being killed by cocaine, and second, that one does not have to be an addict or regular user to suffer such adverse consequences. In the media coverage that occurred during that period, the addictive potential of cocaine was emphasized heavily, in large part due to what can best be described as a media frenzy over crack use.

As with marijuana, 1991 saw an end to the increase in the perceived risk of cocaine use. Perceived risk began to fall after 1991, and a year later (after 1992) actual use began rising among seniors. (See Figure 8-5.) The significant reversal of trends in beliefs set the stage for a resurgence in use, particularly when combined with the fact that the proportions of students using two of the so-called “gateway drugs”—cigarettes and marijuana—also had been rising. From 1992 to 1999, the proportion of twelfth graders using cocaine in the prior 12 months rose steadily from 3.1% to 6.2%, before decreasing significantly to 5.0% in 2000, where it remains in 2002. The decline in seniors’ cocaine use in 2000 was not accompanied by any increase in perceived risk. Thus, there must be other reasons for the decline. One possibility is that the decline reflects a more general anti-drug attitude among seniors. Another is that another drug may be substituting for cocaine—possibly *ecstasy*.

Both crack and cocaine powder had been showing a similar rise in use during much of the 1990s, as well as a subsequent decline in 2000. As we shall see later, similar downturns in perceived risk occurred in the eighth and tenth grades through 1998, except that they started a year earlier among the eighth graders and resulted in larger changes in eighth and tenth grades than in twelfth grade. But as Figure 8-3a (bottom panel) illustrates, the decline in perceived risk of trying crack decelerated in eighth and tenth grades after 1995, and the perceived risk of trying powder cocaine showed a similar pattern (see Tables 8-1 and 8-2). By 2002, perceptions of risk were slightly lower than they were in 1995.

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<sup>70</sup>See also Bachman, J. G., Johnston, L. D., & O’Malley, P. M. (1990). Explaining the recent decline in cocaine use among young adults: Further evidence that perceived risks and disapproval lead to reduced drug use. *Journal of Health and Social Behavior*, 31, 173-184. For a discussion of perceived risk in the larger set of factors influencing trends, and for a consideration of the forces likely to influence perceived risk, see Johnston, L. D. (1991). Toward a theory of drug epidemics. In R. L. Donohew, H. Sypher, & W. Bukoski (Eds.), *Persuasive communication and drug abuse prevention* (pp. 93-131). Hillsdale, NJ: Lawrence Erlbaum.

<sup>71</sup>Our belief in the importance of perceived risk of experimental and occasional cocaine use led us to include in 1986 for the first time the question about the dangers of occasional cocaine use. The very next year proved to have a sharp rise on this measure.

- For most of the *illicit drugs other than marijuana and cocaine*, the period from 1975 (at the beginning of the study) to 1979 revealed a modest but consistent trend in the direction of fewer seniors associating much risk with experimental or occasional use of them. (See Table 8-2 and Figures 8-6a, 8-7a, and 8-8a.) This trend continued for *amphetamines* and *barbiturates*, but not for other drugs, until about 1984.

In the early 1980s, there was little change in perceived risk, although perceived risk of harm from experimental or occasional use of all the illicit drugs other than marijuana dropped slightly in 1985 and 1986. However, the perceived risk of experimental or occasional use of all drugs except PCP began to increase in 1987, reached a peak in 1990 or 1991, and then began to decline noticeably until about 1996.

- For *heroin use*, perceived risk gradually declined between 1975 and 1986, even though use dropped and then stabilized in that interval. There was then an upward shift in 1987 (the same year in which there was a dramatic rise in perceived risk for cocaine) to a new level, where it held for four years. In 1992 risk dropped to a lower plateau again, a year or two before use started to rise. Perceived risk then rose again in the latter half of the 1990s, as use leveled off. As perceived risk fell, use by seniors rose, with annual prevalence of use increasing from 0.4% in 1991 to 1.1% by 1995. (Use also rose in the lower grades.) From 1995 through 1997 there was a slight increase in perceived risk at all three grades (see Tables 8-1 and 8-2 and Figure 8-8a) and usage rates rather stabilized. Perhaps not entirely coincidentally, the Partnership for a Drug-Free America launched a media campaign aimed at deglamorizing heroin in 1996. While the target audience was young adults, many secondary school students undoubtedly saw the ads as well. There has been little further change in perceived risk for heroin since 1997 in grades 8 and 10. There was a slight drop in 2000 in the twelfth grade, where there also was a significant increase in use, and a slight increase in perceived risk as use dropped significantly in 2001. Neither use nor perceived risk changed significantly in 2002.
- In sum, between 1975 and 1978 (or 1979) there was a distinct decline among seniors in perceived harmfulness associated with use of all the illicit drugs. After 1978, concerns about regular *marijuana* use increased dramatically, and concerns about the use of marijuana at less frequent levels increased considerably. After 1986, there was a sharp increase in the risks associated with *cocaine* use—particularly at the experimental and occasional use levels—and some increase in perceived risk of use of virtually all the *other illicit drugs* (see Figures 8-6a, 8-7a, and 8-8a). Between 1991 and 1995, the trends reversed, with fewer seniors seeing use of these drugs as being dangerous. By 1996 and 1997 among seniors, the decline in perceived risk of *marijuana* use had sharply decelerated (see Figure 8-1a); the decline in perceived risk of *cocaine* use had leveled (see Figure 8-2a); the decline in the perceived risk of *LSD* use had decelerated (see Figure 8-7a); and the perceived risk of using *heroin* was actually rising (see Figure 8-8a). Only for *barbiturate* use (asked only of seniors, see Figure 8-6a) was there any appreciable further decline in perceived risk. In 1998, perceived risk for a few drugs gave evidence of rising—*marijuana*, *LSD*, and *amphetamines* (though the increases were not always statistically significant)—but in 1999 perceived risk declined some for

these drugs and almost all others. In 2001, the only significant increase in perceived risk of illicit drug use was for *ecstasy* (MDMA), which rose from 38% in 2000 to 46% in 2001. In 2002, perceived risk of *ecstasy* use again rose significantly (to 52%). Perceived risk of trying *LSD* also rose significantly in 2002, while perceived risk of regular *marijuana* use decreased significantly.

- The sharp decline in seniors' perceived risk of *LSD* use between 1991 and 1997 was particularly noteworthy, confirming our concern that attitudes and beliefs of the newer generation of young people may not have been influenced by some of the direct and vicarious learning experiences that helped to make their predecessors more cautious about its use (see Figure 8-7a). In the late 1960s and early 1970s, young people became aware of the risks of bad trips, uncontrollable flashbacks, dangerous behaviors under the influence, etc. Today's teenagers know much less about those risks. Fortunately, the decline in perceived risk of LSD has been much more modest since 1995. (See Figure 8-7a and Table 8-2.) Despite the fact that perceived risk had been declining some in recent years, as had disapproval of LSD use, actual use had been falling. Obviously, this decline in use cannot be explained by a change in attitudes, thus raising the question of whether there was any substitution from another drug. As it happens, another drug also used for its hallucinogenic properties, *ecstasy*, had been in ascent and may have had some substitution effect. In 2002 perceived risk and disapproval of *LSD* use both increased significantly while use decreased significantly. *Ecstasy* use also decreased some in 2002.
- Perceived risk for *ecstasy* (MDMA) use was asked only of twelfth graders from 1997 to 2000; in 2001, it was added to the eighth and tenth grade questionnaires as well. Between 1997 and 2000, the percentage of twelfth graders seeing a great risk in trying ecstasy increased slightly from 34% to 38%, but in 2001 there was a significant increase of 8 percentage points, up to 46%. In 2002 risk again increased significantly to 52%. As documented in the next chapter, there was a dramatic rise in the availability of ecstasy to American teens in recent years, which may well help to explain its spread. Another belief—the perceived benefits of using a drug—is, like perceived risk, almost surely a determinant of use. It is possible that there may have been a change in the perceived benefits of ecstasy use; but unfortunately, we do not measure this attitude. In any case, the significant increases in perceived risk in 2000, 2001, and 2002 were encouraging. As we stated in last year's report, we believed that the use of this drug would not decline until more young people came to see its use as dangerous. In 2002, use of MDMA decreased some for all three grades (though only the tenth grade decrease was significant), presumably reflecting the increased perceptions of risk. We believe the unusually rapid changes in perceptions of risk about ecstasy reflect the effects of much media coverage of adverse events associated with ecstasy use, as well as the substantial efforts of the National Institute on Drug Abuse to disseminate credible information about the adverse consequences associated with ecstasy use.
- The risks associated with experimental use of *crystal methamphetamine (ice)* fell from 62% in 1991 to 53% in 1998, as annual use rose from 1.4% to 3.0%. Perceived risk stabilized through 2001 and is now at 54% in 2002, while use dropped slightly to 2.5% in 2001 and rose slightly to 3.0% in 2002. The perceived risk of trying *PCP*, though very

high relative to other drugs in 1988, fell by 10 percentage points from its peak level of 59% in 1988 to 49% in 1995. It continued down to 45% in 1999, stabilized in 2000, and then began to increase to 48% in 2002. Again, we suspect that teens in more recent classes are simply much less familiar with the drug and its considerable dangers compared to those who grew up in an earlier period. (Annual prevalence of use rose among seniors, from 1.4% in 1993 to 2.6% in 1996, as perceived risk declined; use has since declined to 1.1% in 2002, while perceived risk has also declined slightly.)

- After showing little systematic change in the latter half of the 1970s, the perceived risks associated with *alcohol use* at various levels rose during the 1980s (though not as dramatically as the perceived risks associated with marijuana and cocaine use) (see Figure 8-9a). The proportion perceiving great risk of harm in having one or two drinks nearly every day rose from 20% in 1980 to 33% in 1991 before falling back to 21% by 2002, perhaps due in part to the publicity about the value of moderate alcohol consumption in protecting against heart disease. The proportion perceiving great risk in having four or five drinks nearly every day rose slightly from 65% in 1981 to 71% in 1990, and subsequently declined to 59% by 2002. The corresponding figure on perceived risk of *occasional heavy drinking* (having five or more drinks once or twice a weekend) rose quite substantially, from 35% in 1979 to 49% in 1992, and then it, too, decreased—to 43% by 1997 and 42% in 2002. (Reported prevalence of occasional binge drinking declined from 41% in 1981 to 28% in 1993, rose slightly to 32% by 1998, and since then has decreased to 29% in 2002.) The increases in perceived risk tended to be followed by some declines in the actual behaviors, while the decreases in perceived risk tended to be followed by some increases in those behaviors—once again suggesting the importance of these beliefs in influencing behavior. The increase in perceived risk during the 1980s may have been due in large part to the many efforts aimed at discouraging drunk driving—a point discussed in more detail in an article published in 1999.<sup>72</sup> In very recent years, occasional heavy drinking has been declining slowly, but perceived risk has not been increasing. As with marijuana, this may suggest a more general lessening of motivations among young people to be getting high.
- Despite all that is known today about the health consequences of *cigarette smoking*, more than a quarter (26%) of twelfth-grade students still do not believe that there is a great risk in smoking a pack or more of cigarettes per day (see Figure 8-10a).

Over a longer period, the number of seniors who thought *smoking a pack or more a day* involved great risk to the user increased, from 51% in 1975 to 64% in 1980. This shift corresponded with, and to some degree preceded, the downturn in current smoking found in this age group (compare Figures 5-4k and 8-10a). Between 1980 and 1984, the perceived risk statistic showed no further increase and use showed no further decrease. Then, from 1984 to 1993 perceived risk inched up from 64% to 70% while use remained quite stable. Risk then declined a bit in 1994 and 1995 (as it did in the lower grades, as well) and use rose through 1997. Between 1995 and 1998, perceived risk rose about 5 percentage points, presaging a decline in smoking that began in 1998. Overall, in the 13-

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<sup>72</sup>O'Malley, P. M., & Johnston, L. D. (1999). Drinking and driving among American high school seniors: 1984-1997. *American Journal of Public Health, 89*, 678-684.



year interval between 1984 and 1997, the percentage of seniors perceiving great risk in regular smoking rose only about 5 percentage points, while use rose, not fell, by 7 percentage points. Clearly, influences other than perceived risk were at work here. Since 1997, perceived risk has risen by another 5 percentage points (from 69% to 74%), and use finally fell, by 10 percentage points (from 37% to 27%).

- With regard to the regular use of *smokeless tobacco*, relatively few seniors reported much risk (see Figure 8-11a), although there was a fair increase in the proportion who did, from 26% in 1986 (when the belief was first measured) to 39% in 1993. From 1993 to 1995 such concerns decreased a bit, declining to 33% in 1995, but then rose to reach 45% by 2001, followed by a decline to 43% in 2002. Current use of smokeless tobacco has declined appreciably since 1995 (from 12% to 7%).

### Trends in Perceived Harmfulness Among Eighth and Tenth Graders

- Data on perceived risk for eighth and tenth graders are not available for many of the drugs for which twelfth-grade data are provided, because the younger students were given a more limited set of questions.
- From the early 1990s until 1997, eighth and tenth graders showed troublesome declines in perceived risk for *marijuana* use, as did the seniors (see Tables 8-1 and 8-2 and Figure 8-1a). Indeed, the decreases in the perceived risk of marijuana use, which had been occurring at least since 1991 for eighth graders and since 1992 for tenth graders, became very sharp. For eighth graders, perceived risk of trying marijuana dropped from 40% in 1991 to 25% in 1997. For tenth graders, this measure dropped from 32% in 1992 to 19% in 1997. As is clear from Figure 8-1a, however, these declines in perceived risk for marijuana use had been decelerating, and stalled among tenth and twelfth graders through 2001. Among eighth graders there was actually a reverse, with perceived risk standing at 28% in 2001, where it remained in 2002. The increased risk among eighth graders was accompanied by declining use. In 2002, perceived risk for experimental and occasional use increased significantly among tenth graders, and use decreased significantly for annual, 30-day, and daily use.
- For *crack* and *cocaine powder* there was a large drop in perceived risk between 1991 and 1995 for both eighth and tenth graders. (For crack the declines were 12 and 10 percentage points for the two grades, respectively, and for cocaine powder, 11 and 6 percentage points.) There has been some further erosion in these beliefs in the years since then (see Table 8-1). Use of both drugs rose from a low point in 1991 or 1992 to a high point in 1998, over the same interval that perceived risk fell. Since then there has been little change in the measures of perceived risk.
- Perceived risk of *LSD* use has generally been declining in eighth and tenth grades since it was first measured in 1993, including statistically significant declines in 2001 in both grades for risk of regular use and in 2002 for tenth-grade risk of regular use. Use, which had been increasing fairly steadily in all grades through 1996, has shown some appreciable decline in all grades since (including a significant drop in 2001 among the tenth graders and a significant decrease for all three grades in 2002). As we pointed out

earlier, the recent drop in LSD use cannot be explained by concomitant changes in perceived risk. As is discussed in the next chapter, there has been some decline in the reported availability of LSD since the mid-1990s. To what extent that reflects an independent change, versus a change due to the fact that fewer students would have friends using (and through whom they could get access to the drug), is unclear.

- Questions about the dangers of *inhalant* use have been asked only of eighth and tenth graders. Perceived risk was relatively stable between 1991 and 1995, before showing a clear jump in 1996, then held steady through 2000 (see Table 8-1). Partly in response to the findings of growing inhalant use among teenagers from this study, in 1995 the Partnership for a Drug-Free America launched a media campaign to increase adolescents' awareness about the dangers associated with inhalant use. The data here are consistent with the notion that their efforts were successful, since the increase in perceived risk occurred in the years that bracket the intervention, and since most of the other drugs had not yet begun to show an increase in perceived risk at that point. In 2001, perceived risk of inhalant use rose significantly in both grades, and use declined (but not significantly). Use continued its longer-term decline in 2001 and 2002, and perceived risk continued to increase in 2001 but not in 2002.
- For *steroids*, in 1992, a noteworthy and constructive change occurred across all three grade levels. There were increases of between 5 and 6 percentage points across the three grade levels in respondents saying there is a "great risk" to the user in taking steroids. Between 70% and 73% of each grade level reported such risk. This suggested that the widely publicized experience of professional football player Lyle Alzado, who was dying of a brain tumor he believed resulted from his steroid use, had an important effect on young people's beliefs regarding the harmfulness of this drug. The effect this "unfortunate role model" had was similar to the effect of Len Bias' death on beliefs about the dangers of cocaine use, except that in Lyle Alzado's case he became aware of the health consequences of his drug use well before his death and *intentionally* set about making his experience an object lesson for young people.<sup>73</sup> Unfortunately, the increases in perceived risk did not continue, and perceived risk slipped a bit in all three grades between 1992 and 1994 (after 1994 the question was dropped in the lower grades). Among twelfth graders, perceived risk held steady for the next four years, followed by a sharp, 6-percentage-point drop in 1999, which coincided with a sharp rise in use that year among eighth and tenth graders. We think it likely that another public figure served unwittingly as a role model that year, this time associating the use of steroids with athletic success. In 2000 there was a continued sharp decline in perceived risk of steroid use among twelfth graders and a continued increase in use among tenth graders (but not among eighth graders). In 2001 perceived risk leveled for the twelfth graders as use increased significantly, and use leveled for eighth and tenth graders. There was little further change in perceived risk in 2002, establishing a lower plateau than in previous years, and use remained fairly level at all grades.

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<sup>73</sup>The July 8, 1991, issue of *Sports Illustrated* magazine had an article by Lyle Alzado entitled "I Lied." For a discussion of the importance of vicarious learning from unfortunate role models see Johnston, L. D. (1991). Toward a theory of drug epidemics. In R. L. Donohew, H. Sypher, & W. Bukoski (Eds.), *Persuasive communication and drug abuse prevention* (pp. 93-131). Hillsdale, NJ: Lawrence Erlbaum.

- The dangers associated with having five or more drinks of *alcohol* once or twice each weekend slipped during much of the 1990s; in the case of eighth graders it dropped from 59% in 1991 to 52% in 1996, and in the case of tenth graders it dropped from 56% in 1992 to 51% in 1996. During the same intervals, self-reported *heavy drinking* rose gradually. Since 1999, perceived risk has increased in the eighth grade while use has declined. In the tenth grade, both measures were fairly stable between 1996 and 2001; in 2002, use declined significantly, while perceived risk increased slightly. Again, there seems to be some direct association between perceptions of risk and actual behavior, as we have seen for a number of the illicit drugs.
- Relatively few twelfth graders recognize the risk associated with pack-a-day *cigarette smoking*, but even fewer eighth and tenth graders do so (see Figure 8-10a). From 1993 to 1995 perceived risk of smoking decreased some at all grade levels, as smoking rates rose in all grades. Since 1995, perceived risk has been rising in all three grade levels, including significant increases for eighth and tenth graders in 2000. Beginning in 1997, smoking rates began to decline in grades 8 and 10 and a year later began to decline among twelfth graders.

A number of incidents in this historical period may well have contributed to the decline in teen smoking. A series of public debates brought considerable adverse publicity to the product and the industry and eventually led to the widely publicized tobacco settlement between the states and the tobacco companies. Additional deterrents included increased cigarette prices, substantial tobacco prevention efforts in several large states, the anti-smoking ad campaigns (the largest of which was funded by the American Legacy Foundation), the withdrawal of advertising from billboards, and the elimination of the Joe Camel ads (that we believe were particularly successful with adolescent boys from the upper end of the socioeconomic spectrum).

Cigarette smoking continued to decline in all grades in 2001 and 2002, but perceived risk leveled off in grades 8 and 10. (Only the twelfth graders showed a continuing rise in perceived risk, which may reflect some residual cohort effects.) This leveling in perceived risk raises the possibility that the long-term decline in teen smoking may decelerate or end in the next year or two. Of course, as we have just listed, many factors likely have contributed to the downturn, and changes in some (such as cigarette prices) will also play a role.

- Twelfth graders showed a considerable increase in the level of risk perceived to be associated with the regular use of *smokeless tobacco* between 1986 (when this variable was first measured) and 1993, and the lower grades showed a parallel change during this period in the years for which data are available (1991-1993). All three grades showed some decline from 1993 to 1995, and then they increased by about the same amount between 1995 and 2000 (see Figure 8-11a). Then occurred another period of substantial increase in perceived risk between 1995 and 2000—a period during which a considerable decline in the use of smokeless tobacco took place. As with cigarettes, perceived risk became fairly level between 2000 and 2002, while the decline in use in tenth grade

halted. (Use continued to drop in eighth and twelfth grades.) It thus appears that one important reason for the appreciable declines in smokeless tobacco use during the latter half of the 1990s was the fact that an increasing proportion of young people were persuaded of the dangers of using it.

## PERSONAL DISAPPROVAL OF DRUG USE

At the beginning of the Monitoring the Future study we included a set of questions to measure the moral sentiment respondents attach to various types of drug use. The phrasing, “Do you disapprove of people (who are 18 or older) doing each of the following?” was adopted. The answer alternatives are “don’t disapprove,” “disapprove,” and “strongly disapprove.” For eighth and tenth grades a fourth response “can’t say, drug unfamiliar” was included. Responses of “disapprove” or “strongly disapprove” are combined and reported here as “disapproval.” For eighth and tenth graders “can’t say, drug unfamiliar” was included in calculating the percentages, and the phrase “(who are 18 or older)” is omitted from the question stem. The questions each specify a level of involvement, such as “trying marijuana,” “using marijuana occasionally,” or “using marijuana regularly,” just as in the questions about perceived risk.

### Extent of Disapproval Among Twelfth Graders

- The vast majority of twelfth graders do not condone *regular* use of any of the illicit drugs (see Table 8-4). Even *regular marijuana use* is disapproved (or strongly disapproved) by 78%, and regular use of each of the other illicit drugs is disapproved by between 92% and 96% of today’s high school seniors.
- For each of the drugs included in this set of questions, fewer respondents indicate disapproval of experimental or occasional use than of regular use. However, the differences are not great for the use of illicit drugs other than marijuana, because nearly all seniors disapprove of even experimenting with them. For example, the proportions disapproving experimental use are 84% for *ecstasy*, 84% for *cocaine powder*, 85% for *LSD*, 87% for *barbiturates*, 88% for *crack*, and 94% for *heroin*. The extent of disapproval of illicit drug use by peers no doubt is underestimated by adolescents themselves and, as we have written elsewhere, provides the basis for some potentially powerful prevention messages in the form of normative education.<sup>74</sup>
- For *marijuana*, the rate of disapproval varies substantially for different usage levels, although not as much as it has in the past. More than half (52%) disapprove of trying marijuana once or twice, almost two thirds (63%) disapprove of its occasional use, and 78% disapprove of regular use.

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<sup>74</sup>Johnston, L. D. (1991). Contributions of drug epidemiology to the field of drug abuse prevention. In C. Leukefeld, & W. Bukoski (Eds.) *Drug abuse prevention research: Methodological issues* (pp. 57-80). (NIDA Research Monograph 107). Washington, DC: National Institute on Drug Abuse.

- Smoking a pack (or more) of *cigarettes* per day is now disapproved by nearly three quarters (74%) of twelfth-grade students.
- Taking *one or two drinks nearly every day* is disapproved by 69% of seniors. Curiously, *weekend binge drinking* (five or more drinks once or twice each weekend) is disapproved by fewer seniors (65%), despite the fact that many more seniors see a great risk in weekend binge drinking (42%) than in having one or two drinks nearly every day (21%).

One likely explanation for these anomalous findings may be that a greater proportion of this age group are themselves weekend binge drinkers rather than moderate daily drinkers. Therefore, they may express attitudes accepting of their own behavior, even though such attitudes may be somewhat inconsistent with their beliefs about possible consequences. It also may be that the ubiquitous advertising of alcohol use in partying situations has managed to increase social acceptability from what it would be in the absence of such advertising. In any case, this divergence between the perceived risk associated with the two behaviors and the levels of disapproval of them helps to illustrate the point that, while perceived risk may influence disapproval (as we have hypothesized), other factors also play a role in determining the level of disapproval.

#### Extent of Disapproval Among Eighth and Tenth Graders

- Attitudes about *inhalant* use have been asked only of the eighth- and tenth-grade students, and in 2002 the great majority (86% and 89%, respectively) said they disapprove of even trying inhalants.
- Currently the rates of disapproval for the use of *crack* and *cocaine powder* are about equivalent across all grade levels (see Tables 8-3 and 8-4).
- *Marijuana* use shows the greatest grade-related difference in disapproval rates—the lower the grade level, the higher the rate of disapproval. To illustrate, in 2002, 52% of twelfth graders said they disapprove of trying marijuana compared to 58% of tenth graders and 73% of eighth graders (see Tables 8-3 and 8-4). There now is considerable evidence that these attitudes do shift with age—that there is an “age effect” common to all cohorts. For example, the eighth graders of 1991 for the most part constituted the tenth graders of 1993 and the twelfth graders of 1995, and their disapproval of trying marijuana fell from 85% in eighth grade, to 70% by tenth grade, and to 57% by twelfth grade. This drop far exceeds the secular trend at any given grade level. (It is also possible that, in addition to any age effects, there are lasting differences between class cohorts—i.e., cohort effects).

Another possible explanation for this decrease in disapproval with age is that their attitudes about use are age-graded—that is, that they may disapprove more of an eighth grader using marijuana, less so for a tenth grader, and still less for a twelfth grader. The question stem used at the lower grades does not specify the age of the person about whom they are answering, and the respondents may simply assume that the question is about

people their age. The question asked of twelfth graders over the years specifies people “who are 18 or older,” which corresponds to their current age.

- Disapproval of *alcohol* use is also higher at the lower grade levels than among twelfth graders. For example, 65% of the twelfth graders said they disapprove of *weekend binge drinking* versus 72% of the tenth graders and 82% of the eighth graders.
- For *cigarette* use, disapproval is also higher at lower grade levels: 74% of twelfth graders, 81% of tenth graders, and 85% of eighth graders said they disapprove of someone smoking one or more packs per day. Oddly enough, the eighth graders, who are least likely to see regular smoking as dangerous, are the most likely to disapprove of it. This disparity may help to explain why so many do begin to smoke. In the absence of an underlying belief that smoking really represents a hazard to them, many may not be deterred by the predominant peer norms alone.

## TRENDS IN DISAPPROVAL OF DRUG USE

As illustrated below, while the perceived risk associated with a drug often reverses course a year *prior* to the actual use of that drug, disapproval tends to move in a way more synchronous with use. In other words, it tends to rise when use falls and fall when use rises. Table 8-4 provides the long-term trends in disapproval for twelfth grade. See also the “b” panels of Figures 8-1 through 8-11.

### Trends in Disapproval Among Twelfth Graders

- Between 1975 and 1977, a substantial decrease occurred in disapproval of *marijuana* use at any level of frequency (see Figure 8-1b and Table 8-4). The proportion of seniors in the class of 1977 (compared with the class of 1975) who disapproved of *experimenting* was 14 percentage points lower, the proportion who disapproved of *occasional* use was 11 percentage points lower, and the proportion who disapproved of *regular* use was 6 percentage points lower. These undoubtedly were continuations of longer-term trends that began in the late 1960s, as the norms of American young people against illicit drug use seriously eroded. Between 1977 and 1990, however—a 13-year interval—there was a substantial reversal of that trend as disapproval of experimental marijuana use rose by 34 percentage points, disapproval of occasional use by 36 percentage points, and disapproval of regular use by 26 percentage points. There were no further significant changes in 1991 or 1992, although disapproval of experimental use continued to rise gradually.

Beginning in 1993 (a year *after* perceived risk began to decline), a sharp drop in disapproval of marijuana use emerged. Between 1992 and 1997, disapproval dropped 19 percentage points for experimental use, 17 percentage points for occasional use, and 11 percentage points for regular use. These changes accompanied a significant increase in the self-reported use of marijuana. By the mid-1990s, the decline in disapproval of marijuana use began to decelerate, and there has been little further systematic change since 1997.

- Until 1980 the proportion of seniors who disapproved of trying *amphetamines* remained extremely stable at 75% (see Figure 8-6b and Table 8-4). This proportion dropped some in 1981 (to 71%) and then increased gradually over a decade until it reached 87% in 1991, where it remained in 1992. After 1992, a reversal began: disapproval had dropped by 7 percentage points by 1996. Self-reported use increased over the same period. There were slight rises in disapproval in 1997 and 1998, but little change since then.
- During the late 1970s, personal disapproval of experimenting with *barbiturates* increased (from 78% in 1975 to 84% in 1979) and then remained relatively stable through 1984, when it began to increase again (see Figure 8-6b). By 1990, disapproval had reached 91%. Use declined substantially from 1975 to 1992. Between 1993 and 1996, disapproval dropped to 85% as use rose; but, as with amphetamines, disapproval began to rise again in 1997 and then leveled beginning in 1998 at about 86%.
- Concurrent with the years of increase in actual *cocaine* use, disapproval of experimental use of cocaine declined somewhat, from a high of 82% in 1976 to a low of 75% in 1979 (see Figure 8-2b). It then leveled for four years, before edging upward for a couple of years to 80% in 1986. There was a sharp rise in disapproval between 1986 and 1987, the same interval in which perceived risk rose dramatically. This rise continued through 1991, reaching 94% of seniors disapproving of trying cocaine. Between 1992 and 1997, disapproval slowly declined to 88% in 1997 (as use steadily increased) before leveling. Disapproval of trying both *cocaine powder* and *crack cocaine* (see Figure 8-3b) peaked in 1992, after which there was a modest falloff. Since 1996, however, there has been practically no change in seniors' disapproval of crack or powder cocaine.
- We believe that the parallel or slightly lagged trends between perceived risk and disapproval—particularly for marijuana and cocaine use—are no accident. We hypothesize that perceived risk is an important influence on an individual's level of disapproval of a drug-using behavior, although there surely are other influences as well. As levels of personal disapproval change, these individually held attitudes are communicated among friends and acquaintances, and thus perceived norms change as well (as is illustrated in the next chapter). It is noteworthy that as perceived risk for use of most of the illicit drugs began to reverse in 1991 or 1992, personal disapproval of use of virtually all of them appeared to level. In 1993, personal disapproval among seniors began to drop for use of nearly all of the illicit drugs (see Table 8-4), and it continued to fall for use of many of them through 1997, although it has leveled for many since then. This time lag suggests that perceived risk influences disapproval, which, in turn, changes peer norms.
- Disapproval of trying *ecstasy* has been asked of the twelfth graders since 1997 and of eighth and tenth grades only since 2001. Disapproval among twelfth graders declined slightly, from 82% in 1999 to 80% in 2001, during a period when use was increasing and perceived risk was just beginning to increase. But in 2002, disapproval increased significantly to 84%, at the same time that use decreased and perceived risk continued its increase. Thus, increases in perceived risk may have contributed to the recent increase in

personal disapproval, albeit with a fair amount of lag. And the increased disapproval in 2002 at all three grade levels likely helps explain the decreases in use that occurred among all three grade levels.

- Despite the large changes that were taking place in adult use of cigarettes, and presumably in adult attitudes about smoking, young people's disapproval of **regular cigarette smoking** (a pack or more per day) changed surprisingly little throughout much of the life of this study. Disapproval increased from 66% to 71% between 1976 and 1980, slightly ahead of the downturn in use between 1977 and 1981. Disapproval fluctuated slightly throughout the 1980s and 1990s, with some increase between 1982 (69%) and 1986 (75%) and some gradual decline through 1997 (to 67%, almost exactly where it started 21 years earlier). (Recall that use increased from 1992 through 1997 as disapproval was declining.) Since 1997, disapproval has increased steadily and is at 74% in 2002; use has declined steadily in the same interval. The earlier lack of appreciable change in students' disapproval of smoking is surprising because many anti-smoking laws and policies had been enacted during the 1980s and 1990s. Very likely, the tobacco industry's promotion and advertising efforts helped to account for this lack of change in disapproval, as did the widespread portrayal of smoking by characters—often the lead characters—in movies and on television.
- Figure 8-9b tracks disapproval rates for several different patterns of **alcohol** use. It shows that twelfth graders' disapproval of most forms of alcohol use rose throughout the 1980s and into the early 1990s. Then, between 1992 or 1993 and 1998 or 1999 there was considerable falloff in the proportion disapproving of many of these behaviors. Over the last one to three years there has been some rise in all three grades in disapproval of weekend binge drinking, and use has begun to decline in this period.
- With regard to abstinence, the proportion of seniors who disapproved of even **trying one or two drinks of alcohol** doubled, from a low point of 16% in 1980 to 33% by 1992. It fell back to 25% by 1998, increased slightly to 27% in 2001, and stands at 26% in 2002. It seems likely that the increased minimum drinking age in many states between 1981 and 1987 contributed to these changes in attitude about abstinence, since more recent senior classes grew up under the higher minimum drinking age.<sup>75</sup> If so, this illustrates the considerable capacity of laws to influence informal norms. It also seems likely that the activities of Mothers Against Drunk Driving (MADD), which peaked in 1984, and of the designated driver effort, which occurred mostly from 1989 to 1992, helped to influence these attitudes.<sup>76</sup>
- Disapproval of weekend **heavy drinking** rose gradually but quite substantially, from a low of 56% in 1981 to a high of 71% by 1992. Over that same 11-year interval, the self-reported rate of occasional heavy drinking declined from a high of 41% in 1981 to a low

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<sup>75</sup>O'Malley, P. M., & Wagenaar, A. C. (1991). Effects of minimum drinking age laws on alcohol use, related behaviors, and traffic crash involvement among American youth: 1976-1987. *Journal of Studies on Alcohol*, 52, 478-491.

<sup>76</sup>O'Malley, P. M., & Johnston, L. D. (1999). Drinking and driving among U.S. high school seniors, 1984-1997. *American Journal of Public Health*, 89, 678-684.



of 28% in 1992. While the ad campaigns mentioned earlier dealt specifically with drinking and driving, we believe that the negative connotations may well have generalized to heavy drinking.

After 1992, disapproval of weekend heavy drinking briefly fell, from 71% in 1992 to 65% by 1994. It has remained fairly stable at 63%-65% through 2002.

### Trends in Disapproval Among Eighth and Tenth Graders

Table 8-3 provides 11-year trends (1991-2002) in disapproval for eighth and tenth graders. The lower panels in many of the figures in this chapter provide the same information for individual drugs, when data for the lower grade levels are available.

- In 1992, tenth- and twelfth-grade students showed little change in disapproval of the use of illicit drugs, but eighth graders showed some erosion in their attitudes with respect to using *marijuana*, *cocaine powder*, and *crack*. In 1993, rates of disapproval for using these drugs continued to decline among eighth graders and began to decline among tenth and twelfth graders, as well (see Tables 8-3 and 8-4 and Figures 8-1b and 8-3b). Between 1993 and 1996, disapproval of both *marijuana* use and *LSD* use declined in all three grades.
- The declines in personal disapproval were particularly sharp for *marijuana* at all three grade levels. Between 1991 and 1997, the proportion of eighth graders who disapproved of trying marijuana fell from 85% to 68%. Personal disapproval among tenth graders fell from 75% to 54%, and among twelfth graders it fell from 69% to 51% over the same period. Finally, in 1998 there were some early signs of a reversal in this trend at all grade levels, although none of the increases reached statistical significance. In 1999 we saw a significant increase in disapproval of experimental use for the eighth graders, a leveling of disapproval rates for tenth graders, and some further decline in this measure for twelfth graders. Since then, disapproval of marijuana use has increased slowly among eighth graders and held level in the upper grades. The eighth graders' level of disapproval has slowly diverged (upward) from the other two grades since 1995, which is consistent with the gradual drop in use at eighth grade as the upper grades changed little, at least until 2002.
- From 1993 to 1996, disapproval of *LSD* use declined along with perceived risk, and self-reported use increased. After 1996 among eighth and tenth graders there was some leveling in disapproval until 2000, followed by some further decline through 2002. Among twelfth graders, there was a slight increase in disapproval between 1996 and 1999, after which disapproval leveled until 2002 when disapproval increased significantly. As noted earlier, the *use* of LSD has decreased in recent years despite the fact that there has not been an increase in either perceived risk or disapproval (except for the 2002 increase in disapproval by twelfth graders). This “disconnect” between these attitudes and beliefs and actual use suggests that other important factors are at work. Two possibilities are a displacement of use by the rise in ecstasy, and also the drop in the reported availability of LSD since the mid-1990s.

- Disapproval of *crack* and *cocaine powder* fell from 1991 through 1996 among eighth graders, from 1991 through 1998 among tenth graders, and from 1992 through 1998 among twelfth graders. These attitudes have changed rather little since. The softening in attitudes about using crack and cocaine powder eventually translated into changes in usage levels. For example, crack use rose from 1991 through 1998 in eighth grade, from 1992 through 1998 in tenth grade, and from 1993 through 1999 in twelfth grade. Since those recent peaks in use, there has been some falloff at all grades in the use of both crack and powder cocaine. (There was a significant increase in annual use of crack among tenth graders in 2002, but this is lower than the 1998-1999 levels.) As with LSD, this recent general decline in use occurred for the most part without any significant increases in risk or disapproval, suggesting the possibility that there is some substitution by another drug occurring. Ecstasy would seem the most logical candidate because it is the only drug on the ascent in recent years. The fact that the decline in crack and other cocaine use is not girded by any increase in these underlying attitudes and beliefs may mean that it could be reversed rather easily if the popularity of competing drugs, such as ecstasy, should slip (see Tables 2-1 through 2-3).
- Regarding the use of *inhalants*, there was a little slippage in the disapproval rates among eighth graders from 1991 to 1995 but none among tenth graders. Perceived risk for inhalants jumped between 1995 and 1996 for both grades. Disapproval inched up from 1995 through 1997 but in 1999 jumped significantly in both grades (by 2.2 percentage points for eighth grade and by 2.8 percentage points for tenth grade), with little change since for the tenth graders. For the eighth graders there has been some increase in disapproval since 1998; however, the increase appears to have halted in 2002, though at quite a high rate (86%).
- Disapproval of weekend *binge drinking* declined among eighth graders between 1991 and 1996 and among tenth and twelfth graders between 1992 and 1997, before leveling (see Figure 8-9b).
- Disapproval of *smoking one or more packs of cigarettes per day* also declined significantly, from 1991 to 1996 among eighth and tenth graders and from 1992 to 1996 among twelfth graders (see Figure 8-10b), corresponding to periods of sharp increases in their use of cigarettes. Since 1996, however, disapproval has been turning upward in both lower grades, including a significant increase in 2002 among tenth graders, and the same has been happening since 1997 in grade 12. At the same time use has been declining in all three grades. These recent changes in attitude may well have been brought about by the extremely adverse publicity suffered by the tobacco industry during these years. Also, the Joe Camel advertising campaign ended, billboards advertising cigarettes were removed, and a number of states initiated anti-smoking campaigns aimed at youth.

## ATTITUDES REGARDING THE LEGALITY OF DRUG USE

At the beginning of the study in 1975, legal restraints on drug use appeared likely to be in a state of flux for some time. (Little did we know for how long a time.) Therefore, we decided to

measure attitudes about legal sanctions. As it turns out, some dramatic changes in these attitudes have occurred during the life of the study. Table 8-5 presents a set of questions on this subject along with the answers provided by each senior class. The set lists a sampling of illicit and licit drugs and asks respondents whether the use of each should be prohibited by law. A distinction was made between *use in public* and *use in private*—one that has proven quite important. (These questions have not been asked of the eighth- and tenth-grade respondents.) The answer alternatives are “no,” “yes,” and “not sure.”

### Attitudes of Twelfth Graders

- The great majority of seniors believe that the use in public of *illicit drugs other than marijuana* should be prohibited by law. For instance, in the case of *amphetamines* or *barbiturates*, 74% of the seniors believe that use in public should be prohibited, and 84% believe that such use of *heroin* should be prohibited. Even use in private is opposed by the majority, though by smaller proportions: for example, 56% believe that the use in private of *amphetamines* or *barbiturates* should be illegal, 64% for *LSD* use, and 74% for *heroin* use.
- The great majority of seniors (68%) also favor legally prohibiting *marijuana* use in public places, despite the fact that about half of them have used marijuana themselves and despite the fact that many do not judge it to be as dangerous as other drugs. Considerably fewer (38%) feel that marijuana use in private should be prohibited.
- Some 44% of twelfth graders believe that *cigarette smoking* in “certain specified public places” should be prohibited by law. Were the question more specific as to the types of public places in which smoking might be prohibited (e.g., restaurants and hospitals), quite different results might have emerged. Somewhat more think *getting drunk* in public should be prohibited (49%).
- For *all drugs* included in the question, fewer seniors believe that use in private settings should be illegal than believe this about use in public. This is particularly true for *getting drunk* and for *marijuana* use.

### Trends in These Attitudes Among Twelfth Graders

- From 1975 through 1978 there were modest declines (shifts of 5 to 7 percentage points, depending on the substance) in the proportions of seniors who favored legal prohibition of private use of any of the five illicit drugs (see Table 8-5). By 1990 (12 years later), all of these proportions had increased substantially, with shifts of 8 to 31 percentage points. The proportion who thought *marijuana* use in private should be prohibited by law more than doubled, from 25% in 1978 to 56% in 1990—a dramatic shift.

Then, between 1990 and 1997, positions on prohibition of all illicit drug use softened once again, particularly in the case of marijuana, for which the percentage favoring prohibitive laws fell from 56% in 1990 to 39% in 1997. Since 1997 these attitudes have been relatively stable. One exception is that the percentage thinking that smoking marijuana in public places should be prohibited declined significantly in 2001, to 68%,

where it stayed in 2002, the lowest figure since 1981 (but still representing more than two thirds of twelfth graders).

- There has been rather little change in the proportion of seniors who said **smoking cigarettes** “in certain specified public places” should be prohibited by law. In 1977, 42% held this view versus 44% in 2002, 25 years later. On the other hand, given recent widespread prohibitions of smoking in many public buildings, it is possible that the assumed definition of “certain specified public places” has narrowed in the minds of many seniors.
- Attitudes about the legality of **drunkenness** in public or private places have changed little over the past 27 years, but there was a small change toward less tolerance of drunkenness in private. The stability of attitudes about the preferred legality for this culturally ingrained drug-using behavior contrasts sharply with the lability of attitudes regarding the legality of using illicit drugs.

## THE LEGAL STATUS OF MARIJUANA

Another set of questions asks with more specificity what legal sanctions, if any, seniors think should be attached to the *use* and *sale* of marijuana. Respondents also are asked to guess how they would be likely to react to the legalized use and sale of the drug. The answers to such a hypothetical question must be interpreted with considerable caution, of course.

### Attitudes and Predicted Responses to Legalization

- As shown in Table 8-6, in 2002 more than one quarter (29%) of all seniors believed that marijuana use should be treated as a crime. Nearly one third thought it should be entirely legal (31%), and almost one quarter (24%) felt it should be treated as a minor violation—like a parking ticket—but not as a crime. (The remaining 16% said they “don’t know.”)
- Asked whether they thought it should be legal to sell marijuana *if* it were legal to use it, well over half (57%) said “yes.” However, about three fourths of those answering “yes” (44% of all respondents) would permit the sale *only* to adults. A minority (14%) favored the sale to anyone, regardless of age, while 29% said that sale should not be legal, and 14% said they “don’t know.”
- Most high school seniors felt that they would be little affected personally by the legalization of either the sale or the use of marijuana. More than half (59%) of the respondents said that they would not use the drug even if it were legal to buy and use it, and another 17% indicated they would use it about as often as they do now or less often. Only 7.1% said they would use it more often than they do at present and only another 8.4% thought they would try it. Seven percent said they did not know how their behavior would be affected if marijuana were legalized. Still, this amounts to 15% who state that their use would increase if marijuana were legalized.

A study of the effects of decriminalization by several states during the late 1970s found no evidence of any impact on the use of marijuana among young people, nor on attitudes and beliefs concerning its use.<sup>77</sup> However, it should be noted that *decriminalization* falls well short of the full *legalization* posited in the questions that we ask of seniors. Moreover, the situation today is very different than it was in the late 1970s, with much more peer disapproval and more rigorous enforcement of drug laws. More recent studies suggest that there is indeed an impact of decriminalization, such that “youths living in decriminalized states are significantly more likely to report currently using marijuana.”<sup>78</sup>

### Trends in Attitudes and Predicted Responses

- In the 12-year interval between 1978 and 1990, American young people became much more supportive of legal prohibitions of the use of *all illegal drugs*, whether used in private or in public (see Table 8-5).
- Between 1976 and 1979, seniors’ preferences for decriminalization or legalization of *marijuana* remained fairly constant (see Table 8-6); but between 1979 and 1990 the proportion favoring outright legalization dropped by half (from 32% in 1979 to 16% in 1990), while there was a corresponding doubling in the proportion saying marijuana use should be a crime (from 24% to 53%). Also reflecting this increased conservatism about marijuana use, somewhat fewer said they would support legalized *sale* even if *use* were made legal (down from 65% in 1979 to 48% in 1990).

After 1990 these policy attitudes began to change again. Fewer favored criminal penalties and more favored legal sale (see Table 8-6). For example, in 1996 the proportion saying that using marijuana should be entirely legal was 31%, up from 16% in 1990, and the proportion saying it should be a crime was 34%, down from 53% in 1990. For the most part, these attitudes have not changed in any systematic pattern in the last few years, although the proportion saying marijuana use should be a crime has declined another 5% since 1997. One thing that has become clear over the past 27 years is that young people’s policy preferences regarding the legal status of marijuana and other drugs track rather closely the extent to which they personally disapprove of the use of those drugs *and* the extent to which they are using them.

- The predictions about personal marijuana use, if sale and use were legalized, have been quite similar for all high school classes. The slight shifts observed have been attributable mostly to the changing proportions of seniors who actually have used marijuana.

<sup>77</sup>See Johnston, L. D., O’Malley, P. M., & Bachman, J. G. (1981). *Marijuana decriminalization: The impact on youth, 1975-1980* (Monitoring the Future Occasional Paper No. 13). Ann Arbor, MI: Institute for Social Research.

<sup>78</sup>Chaloupka, F. J., Pacula, R. L., Farrelly, M. C., Johnston, L. D., O’Malley, P. M., & Bray, J. W. (February 1999). *Do higher cigarette prices encourage youth to use marijuana?* NBER Working Paper No. 6939.

**TABLE 8-1**

**Trends in Harmfulness of Drugs as Perceived by Eighth and Tenth Graders, 1991–2002**

Q. How much do you think people risk harming themselves (physically or in other ways), if they . . .	Percentage saying "great risk" <sup>a</sup>																										
	8th Grade											10th Grade															
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	'01-'02 change	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	'01-'02 change	
Try marijuana once or twice	40.4	39.1	36.2	31.6	28.9	27.9	25.3	28.1	28.0	29.0	27.7	28.2	+0.5	30.0	31.9	29.7	24.4	21.5	20.0	18.8	19.6	19.2	18.5	17.9	19.9	+2.0s	
Smoke marijuana occasionally	57.9	56.3	53.8	48.6	45.9	44.3	43.1	45.0	45.7	47.4	46.3	46.0	-0.3	48.6	48.9	46.1	38.9	35.4	32.8	31.9	32.5	33.5	32.4	31.2	32.0	+0.8	
Smoke marijuana regularly	83.8	82.0	79.6	74.3	73.0	70.9	72.7	73.0	73.3	74.8	72.2	71.7	-0.5	82.1	81.1	78.5	71.3	67.9	65.9	65.9	65.8	65.9	64.7	62.8	60.8	-2.0	
Try inhalants once or twice <sup>b</sup>	35.9	37.0	36.5	37.9	36.4	40.8	40.1	38.9	40.8	41.2	45.6	42.8	-2.8s	37.8	38.7	40.9	42.7	41.6	47.2	47.5	45.8	48.2	46.6	49.9	48.7	-1.2	
Try inhalants regularly <sup>b</sup>	65.6	64.4	64.6	65.5	64.8	68.2	68.7	67.2	68.8	69.9	71.6	69.9	-1.7	69.8	67.9	69.6	71.5	71.8	75.8	74.5	73.3	76.3	75.0	76.4	73.4	-3.0ss	
Try LSD once or twice <sup>c</sup>	—	—	42.1	38.3	36.7	36.5	37.0	34.9	34.1	34.0	31.6	29.6	-2.0	—	—	48.7	46.5	44.7	45.1	44.5	43.5	45.0	43.0	41.3	40.1	-1.2	
Take LSD regularly <sup>c</sup>	—	—	68.3	65.8	64.4	63.6	64.1	59.6	58.8	57.5	52.9	49.3	-3.6	—	—	78.9	75.9	75.5	75.3	73.8	72.3	73.9	72.0	68.8	64.9	-3.9ss	
Try MDMA (Ecstasy) once or twice <sup>d</sup>	—	—	—	—	—	—	—	—	—	—	35.8	38.9	+3.1	—	—	—	—	—	—	—	—	—	—	39.4	43.5	+4.1s	
Take MDMA (Ecstasy) occasionally <sup>d</sup>	—	—	—	—	—	—	—	—	—	—	55.5	61.8	+6.4sss	—	—	—	—	—	—	—	—	—	—	—	64.8	67.3	+2.6
Try crack once or twice <sup>b</sup>	62.8	61.2	57.2	54.4	50.8	51.0	49.9	49.3	48.7	48.5	48.6	47.4	-1.2	70.4	69.6	66.6	64.7	60.9	60.9	59.2	58.0	57.8	56.1	57.1	57.4	+0.3	
Take crack occasionally <sup>b</sup>	82.2	79.6	76.8	74.4	72.1	71.6	71.2	70.6	70.6	70.1	70.0	69.7	-0.2	87.4	86.4	84.4	83.1	81.2	80.3	78.7	77.5	79.1	76.9	77.3	75.7	-1.7	
Try cocaine powder once or twice <sup>b</sup>	55.5	54.1	50.7	48.4	44.9	45.2	45.0	44.0	43.3	43.3	43.9	43.2	-0.7	59.1	59.2	57.5	56.4	53.5	53.6	52.2	50.9	51.6	48.8	50.6	51.3	+0.7	
Take cocaine powder occasionally <sup>b</sup>	77.0	74.3	71.8	69.1	66.4	65.7	65.8	65.2	65.4	65.5	65.8	64.9	-0.9	82.2	80.1	79.1	77.8	75.6	75.0	73.9	71.8	73.6	70.9	72.3	71.0	-1.4	
Try heroin once or twice without using a needle <sup>c</sup>	—	—	—	—	60.1	61.3	63.0	62.8	63.0	62.0	61.1	62.6	+1.5	—	—	—	—	70.7	72.1	73.1	71.7	73.7	71.7	72.0	72.2	+0.1	
Take heroin occasionally without using a needle <sup>c</sup>	—	—	—	—	76.8	76.6	79.2	79.0	78.9	78.6	78.5	78.5	0.0	—	—	—	—	85.1	85.8	86.5	84.9	86.5	85.2	85.4	83.4	-2.0	
Try one or two drinks of an alcoholic beverage (beer, wine, liquor)	11.0	12.1	12.4	11.6	11.6	11.8	10.4	12.1	11.6	11.9	12.2	12.5	+0.3	9.0	10.1	10.9	9.4	9.3	8.9	9.0	10.1	10.5	9.6	9.8	11.5	+1.8ss	
Take one or two drinks nearly every day	31.8	32.4	32.6	29.9	30.5	28.6	29.1	30.3	29.7	30.4	30.0	29.6	-0.4	36.1	36.8	35.9	32.5	31.7	31.2	31.8	31.9	32.9	32.3	31.5	31.0	-0.5	
Have five or more drinks once or twice each weekend	59.1	58.0	57.7	54.7	54.1	51.8	55.6	56.0	55.3	55.9	56.1	56.4	+0.4	54.7	55.9	54.9	52.9	52.0	50.9	51.8	52.5	51.9	51.0	50.7	51.7	+1.0	
Smoke one or more packs of cigarettes per day <sup>e</sup>	51.6	50.8	52.7	50.8	49.8	50.4	52.6	54.3	54.8	58.8	57.1	57.5	+0.4	60.3	59.3	60.7	59.0	57.0	57.9	59.9	61.9	62.7	65.9	64.7	64.3	-0.4	
Use smokeless tobacco regularly	35.1	35.1	36.9	35.5	33.5	34.0	35.2	36.5	37.1	39.0	38.2	39.4	+1.1	40.3	39.6	44.2	42.2	38.2	41.0	42.2	42.8	44.2	46.7	46.2	46.9	+0.7	
Take steroids <sup>f</sup>	64.2	69.5	70.2	67.6	—	—	—	—	—	—	—	—	—	67.1	72.7	73.4	72.5	—	—	—	—	—	—	—	—	—	
<i>Approx. N (in thousands)</i>	17.4	18.7	18.4	17.4	17.5	17.9	18.8	18.1	16.7	16.7	16.2	15.1	14.7	14.8	15.3	15.9	17.0	15.7	15.6	15.0	13.6	14.3	14.0	14.3			

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available.  
Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Answer alternatives were: (1) No risk, (2) Slight risk, (3) Moderate risk, (4) Great risk, and (5) Can't say, drug unfamiliar.

<sup>b</sup>Beginning in 1997, data based on two-thirds of N indicated due to changes in questionnaire forms.

<sup>c</sup>Data based on one of two forms in 1993–96; N is one-half of N indicated. Beginning in 1997, data based on one-third of N indicated due to changes in questionnaire forms.

<sup>d</sup>Data based on one-third of N indicated due to changes in questionnaire forms.

<sup>e</sup>Beginning in 1999, data based on two-thirds of N indicated due to changes in questionnaire forms.

<sup>f</sup>Data based on two forms in 1991 and 1992. Data based on one of two forms in 1993 and 1994; N is one-half of N indicated.

**TABLE 8-2**  
**Long-Term Trends in Harmfulness of Drugs as Perceived by Twelfth Graders**

Q. <i>How much do you think people risk harming themselves (physically or in other ways), if they . . .</i>	Percentage saying "great risk" <sup>a</sup>														
	Class of:														
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Try marijuana once or twice	15.1	11.4	9.5	8.1	9.4	10.0	13.0	11.5	12.7	14.7	14.8	15.1	18.4	19.0	23.6
Smoke marijuana occasionally	18.1	15.0	13.4	12.4	13.5	14.7	19.1	18.3	20.6	22.6	24.5	25.0	30.4	31.7	36.5
Smoke marijuana regularly	43.3	38.6	36.4	34.9	42.0	50.4	57.6	60.4	62.8	66.9	70.4	71.3	73.5	77.0	77.5
Try LSD once or twice	49.4	45.7	43.2	42.7	41.6	43.9	45.5	44.9	44.7	45.4	43.5	42.0	44.9	45.7	46.0
Take LSD regularly	81.4	80.8	79.1	81.1	82.4	83.0	83.5	83.5	83.2	83.8	82.9	82.6	83.8	84.2	84.3
Try PCP once or twice	—	—	—	—	—	—	—	—	—	—	—	—	55.6	58.8	56.6
Try MDMA (Ecstasy) once or twice	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Try cocaine once or twice	42.6	39.1	35.6	33.2	31.5	31.3	32.1	32.8	33.0	35.7	34.0	33.5	47.9	51.2	54.9
Take cocaine occasionally	—	—	—	—	—	—	—	—	—	—	—	54.2	66.8	69.2	71.8
Take cocaine regularly	73.1	72.3	68.2	68.2	69.5	69.2	71.2	73.0	74.3	78.8	79.0	82.2	88.5	89.2	90.2
Try crack once or twice	—	—	—	—	—	—	—	—	—	—	—	—	57.0	62.1	62.9
Take crack occasionally	—	—	—	—	—	—	—	—	—	—	—	—	70.4	73.2	75.3
Take crack regularly	—	—	—	—	—	—	—	—	—	—	—	—	84.6	84.8	85.6
Try cocaine powder once or twice	—	—	—	—	—	—	—	—	—	—	—	—	45.3	51.7	53.8
Take cocaine powder occasionally	—	—	—	—	—	—	—	—	—	—	—	—	56.8	61.9	65.8
Take cocaine powder regularly	—	—	—	—	—	—	—	—	—	—	—	—	81.4	82.9	83.9
Try heroin once or twice	60.1	58.9	55.8	52.9	50.4	52.1	52.9	51.1	50.8	49.8	47.3	45.8	53.6	54.0	53.8
Take heroin occasionally	75.6	75.6	71.9	71.4	70.9	70.9	72.2	69.8	71.8	70.7	69.8	68.2	74.6	73.8	75.5
Take heroin regularly	87.2	88.6	86.1	86.6	87.5	86.2	87.5	86.0	86.1	87.2	86.0	87.1	88.7	88.8	89.5
Try heroin once or twice without using a needle	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Try heroin occasionally without using a needle	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Try amphetamines once or twice	35.4	33.4	30.8	29.9	29.7	29.7	26.4	25.3	24.7	25.4	25.2	25.1	29.1	29.6	32.8
Take amphetamines regularly	69.0	67.3	66.6	67.1	69.9	69.1	66.1	64.7	64.8	67.1	67.2	67.3	69.4	69.8	71.2
Try crystal meth. (ice) once or twice	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Try barbiturates once or twice	34.8	32.5	31.2	31.3	30.7	30.9	28.4	27.5	27.0	27.4	26.1	25.4	30.9	29.7	32.2
Take barbiturates regularly	69.1	67.7	68.6	68.4	71.6	72.2	69.9	67.6	67.7	68.5	68.3	67.2	69.4	69.6	70.5
Try one or two drinks of an alcoholic beverage (beer, wine, liquor)	5.3	4.8	4.1	3.4	4.1	3.8	4.6	3.5	4.2	4.6	5.0	4.6	6.2	6.0	6.0
Take one or two drinks nearly every day	21.5	21.2	18.5	19.6	22.6	20.3	21.6	21.6	21.6	23.0	24.4	25.1	26.2	27.3	28.5
Take four or five drinks nearly every day	63.5	61.0	62.9	63.1	66.2	65.7	64.5	65.5	66.8	68.4	69.8	66.5	69.7	68.5	69.8
Have five or more drinks once or twice each weekend	37.8	37.0	34.7	34.5	34.9	35.9	36.3	36.0	38.6	41.7	43.0	39.1	41.9	42.6	44.0
Smoke one or more packs of cigarettes per day	51.3	56.4	58.4	59.0	63.0	63.7	63.3	60.5	61.2	63.8	66.5	66.0	68.6	68.0	67.2
Use smokeless tobacco regularly	—	—	—	—	—	—	—	—	—	—	—	25.8	30.0	33.2	32.9
Take steroids	—	—	—	—	—	—	—	—	—	—	—	—	—	—	63.8

*Approx. N = 2804 2918 3052 3770 3250 3234 3604 3557 3305 3262 3250 3020 3315 3276 2796*

<sup>a</sup>Answer alternatives were: (1) No risk, (2) Slight risk, (3) Moderate risk, (4) Great risk, and (5) Can't say, drug unfamiliar.

(Table continued on next page)

**TABLE 8-2 (cont.)**  
**Long-Term Trends in Harmfulness of Drugs as Perceived by Twelfth Graders**

Q. <i>How much do you think people risk harming themselves (physically or in other ways), if they . . .</i>	Percentage saying "great risk" <sup>a</sup>													'01-'02 change
	Class of:													
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	
Try marijuana once or twice	23.1	27.1	24.5	21.9	19.5	16.3	15.6	14.9	16.7	15.7	13.7	15.3	16.1	+0.8
Smoke marijuana occasionally	36.9	40.6	39.6	35.6	30.1	25.6	25.9	24.7	24.4	23.9	23.4	23.5	23.2	-0.3
Smoke marijuana regularly	77.8	78.6	76.5	72.5	65.0	60.8	59.9	58.1	58.5	57.4	58.3	57.4	53.0	-4.4s
Try LSD once or twice	44.7	46.6	42.3	39.5	38.8	36.4	36.2	34.7	37.4	34.9	34.3	33.2	36.7	+3.5s
Take LSD regularly	84.5	84.3	81.8	79.4	79.1	78.1	77.8	76.6	76.5	76.1	75.9	74.1	73.9	-0.2
Try PCP once or twice	55.2	51.7	54.8	50.8	51.5	49.1	51.0	48.8	46.8	44.8	45.0	46.2	48.3	+2.1
Try MDMA (Ecstasy) once or twice	—	—	—	—	—	—	—	33.8	34.5	35.0	37.9	45.7	52.2	+6.5sss
Try cocaine once or twice	59.4	59.4	56.8	57.6	57.2	53.7	54.2	53.6	54.6	52.1	51.1	50.7	51.2	+0.4
Take cocaine occasionally	73.9	75.5	75.1	73.3	73.7	70.8	72.1	72.4	70.1	70.1	69.5	69.9	68.3	-1.6
Take cocaine regularly	91.1	90.4	90.2	90.1	89.3	87.9	88.3	87.1	86.3	85.8	86.2	84.1	84.5	+0.4
Try crack once or twice	64.3	60.6	62.4	57.6	58.4	54.6	56.0	54.0	52.2	48.2	48.4	49.4	50.8	+1.4
Take crack occasionally	80.4	76.5	76.3	73.9	73.8	72.8	71.4	70.3	68.7	67.3	65.8	65.4	65.6	+0.2
Take crack regularly	91.6	90.1	89.3	87.5	89.6	88.6	88.0	86.2	85.3	85.4	85.3	85.8	84.1	-1.7
Try cocaine powder once or twice	53.9	53.6	57.1	53.2	55.4	52.0	53.2	51.4	48.5	46.1	47.0	49.0	49.5	+0.5
Take cocaine powder occasionally	71.1	69.8	70.8	68.6	70.6	69.1	68.8	67.7	65.4	64.2	64.7	63.2	64.4	+1.2
Take cocaine powder regularly	90.2	88.9	88.4	87.0	88.6	87.8	86.8	86.0	84.1	84.6	85.5	84.4	84.2	-0.2
Try heroin once or twice	55.4	55.2	50.9	50.7	52.8	50.9	52.5	56.7	57.8	56.0	54.2	55.6	56.0	+0.5
Take heroin occasionally	76.6	74.9	74.2	72.0	72.1	71.0	74.8	76.3	76.9	77.3	74.6	75.9	76.6	+0.7
Take heroin regularly	90.2	89.6	89.2	88.3	88.0	87.2	89.5	88.9	89.1	89.9	89.2	88.3	88.5	+0.1
Try heroin once or twice without using a needle	—	—	—	—	—	55.6	58.6	60.5	59.6	58.5	61.6	60.7	60.6	-0.1
Take heroin occasionally without using a needle	—	—	—	—	—	71.2	71.0	74.3	73.4	73.6	74.7	74.4	74.7	+0.3
Try amphetamines once or twice	32.2	36.3	32.6	31.3	31.4	28.8	30.8	31.0	35.3	32.2	32.6	34.7	34.4	-0.3
Take amphetamines regularly	71.2	74.1	72.4	69.9	67.0	65.9	66.8	66.0	67.7	66.4	66.3	67.1	64.8	-2.4
Try crystal meth. (ice) once or twice	—	61.6	61.9	57.5	58.3	54.4	55.3	54.4	52.7	51.2	51.3	52.7	53.8	+1.0
Try barbiturates once or twice	32.4	35.1	32.2	29.2	29.9	26.3	29.1	26.9	29.0	26.1	25.0	25.7	26.2	+0.5
Take barbiturates regularly	70.2	70.5	70.2	66.1	63.3	61.6	60.4	56.8	56.3	54.1	52.3	50.3	49.3	-1.0
Try one or two drinks of an alcoholic beverage (beer, wine, liquor)	8.3	9.1	8.6	8.2	7.6	5.9	7.3	6.7	8.0	8.3	6.4	8.7	7.6	-1.1
Take one or two drinks nearly every day	31.3	32.7	30.6	28.2	27.0	24.8	25.1	24.8	24.3	21.8	21.7	23.4	21.0	-2.4
Take four or five drinks nearly every day	70.9	69.5	70.5	67.8	66.2	62.8	65.6	63.0	62.1	61.1	59.9	60.7	58.8	-1.9
Have five or more drinks once or twice each weekend	47.1	48.6	49.0	48.3	46.5	45.2	49.5	43.0	42.8	43.1	42.7	43.6	42.2	-1.4
Smoke one or more packs of cigarettes per day	68.2	69.4	69.2	69.5	67.6	65.6	68.2	68.7	70.8	70.8	73.1	73.3	74.2	+1.0
Use smokeless tobacco regularly	34.2	37.4	35.5	38.9	36.6	33.2	37.4	38.6	40.9	41.1	42.2	45.4	42.6	-2.9
Take steroids	69.9	65.6	70.7	69.1	66.1	66.4	67.6	67.2	68.1	62.1	57.9	58.9	57.1	-1.8

*Approx. N = 2553 2549 2684 2759 2591 2603 2449 2579 2564 2306 2130 2173 2198*

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001.

'—' indicates data not available.

Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.

SOURCE: The Monitoring the Future Study, the University of Michigan.



**TABLE 8-3**  
**Trends in Disapproval of Drug Use by Eighth and Tenth Graders, 1991–2002**

Q.	Percentage who “disapprove” or “strongly disapprove” <sup>a</sup>																										
	8th Grade											10th Grade															
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	'00-'02 change	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	'01-'02 change	
Do you disapprove of people who . . .																											
Try marijuana once or twice	84.6	82.1	79.2	72.9	70.7	67.5	67.6	69.0	70.7	72.5	72.4	73.3	+0.9	74.6	74.8	70.3	62.4	59.8	55.5	54.1	56.0	56.2	54.9	54.8	57.8	+3.0s	
Smoke marijuana occasionally	89.5	88.1	85.7	80.9	79.7	76.5	78.1	78.4	79.3	80.6	80.6	80.9	+0.2	83.7	83.6	79.4	72.3	70.0	66.9	66.2	67.3	68.2	67.2	66.2	68.3	+2.1	
Smoke marijuana regularly	92.1	90.8	88.9	85.3	85.1	82.8	84.6	84.5	84.5	85.3	84.5	85.3	+0.9	90.4	90.0	87.4	82.2	81.1	79.7	79.7	80.1	79.8	79.1	78.0	78.6	+0.6	
Try inhalants once or twice <sup>b</sup>	84.9	84.0	82.5	81.6	81.8	82.9	84.1	83.0	85.2	85.4	86.6	86.1	-0.5	85.2	85.6	84.8	84.9	84.5	86.0	86.9	85.6	88.4	87.5	87.8	88.6	+0.8	
Take inhalants regularly <sup>b</sup>	90.6	90.0	88.9	88.1	88.8	89.3	90.3	89.5	90.3	90.2	90.5	90.4	0.0	91.0	91.5	90.9	91.0	90.9	91.7	91.7	91.1	92.4	91.8	91.3	91.8	+0.5	
Try LSD once or twice <sup>c</sup>	—	—	77.1	75.2	71.6	70.9	72.1	69.1	69.4	66.7	64.6	62.6	-2.0	—	—	82.1	79.3	77.9	76.8	76.6	76.7	77.8	77.0	75.4	74.6	-0.8	
Take LSD regularly <sup>c</sup>	—	—	79.8	78.4	75.8	75.3	76.3	72.5	72.5	69.3	67.0	65.5	-1.5	—	—	86.8	85.6	84.8	84.5	83.4	82.9	84.3	82.1	80.8	79.4	-1.4	
Try MDMA (Ecstasy) once or twice <sup>d</sup>	—	—	—	—	—	—	—	—	—	—	—	—	69.0 74.3	+5.2sss	—	—	—	—	—	—	—	—	—	—	—	72.6 77.4	+4.9ss
Take MDMA (Ecstasy) occasionally <sup>d</sup>	—	—	—	—	—	—	—	—	—	—	—	—	73.6 78.6	+5.0sss	—	—	—	—	—	—	—	—	—	—	—	81.0 84.6	+3.6ss
Try crack once or twice <sup>b</sup>	91.7	90.7	89.1	86.9	85.9	85.0	85.7	85.4	86.0	85.4	86.0	86.2	+0.2	92.5	92.5	91.4	89.9	88.7	88.2	87.4	87.1	87.8	87.1	86.9	88.0	+1.2	
Take crack occasionally <sup>b</sup>	93.3	92.5	91.7	89.9	89.8	89.3	90.3	89.5	89.9	88.8	89.8	89.6	-0.1	94.3	94.4	93.6	92.5	91.7	91.9	91.0	90.6	91.5	90.9	90.6	91.0	+0.3	
Try cocaine powder once or twice <sup>b</sup>	91.2	89.6	88.5	86.1	85.3	83.9	85.1	84.5	85.2	84.8	85.6	85.8	+0.2	90.8	91.1	90.0	88.1	86.8	86.1	85.1	84.9	86.0	84.8	85.3	86.4	+1.2	
Take cocaine powder occasionally <sup>b</sup>	93.1	92.4	91.6	89.7	89.7	88.7	90.1	89.3	89.9	88.8	89.6	89.9	+0.2	94.0	94.0	93.2	92.1	91.4	91.1	90.4	89.7	90.7	89.9	90.2	89.9	-0.2	
Try heroin once or twice without using a needle <sup>e</sup>	—	—	—	—	85.8	85.0	87.7	87.3	88.0	87.2	87.2	87.8	+0.6	—	—	—	—	89.7	89.5	89.1	88.7	90.1	90.1	89.1	89.2	+0.1	
Take heroin occasionally without using a needle <sup>e</sup>	—	—	—	—	88.5	87.7	90.1	89.6	90.2	88.9	88.9	89.6	+0.7	—	—	—	—	91.6	91.7	91.4	90.5	91.8	92.3	90.8	90.7	-0.1	
Try one or two drinks of an alcoholic beverage (beer, wine, liquor)	51.7	52.2	50.9	47.8	48.0	45.5	45.7	47.5	48.3	48.7	49.8	51.1	+1.3	37.6	39.9	38.5	36.5	36.1	34.2	33.7	34.7	35.1	33.4	34.7	37.7	+3.0ss	
Take one or two drinks nearly every day	82.2	81.0	79.6	76.7	75.9	74.1	76.6	76.9	77.0	77.8	77.4	78.3	+0.9	81.7	81.7	78.6	75.2	75.4	73.8	75.4	74.6	75.4	73.8	73.8	74.9	+1.1	
Have five or more drinks once or twice each weekend	85.2	83.9	83.3	80.7	80.7	79.1	81.3	81.0	80.3	81.2	81.6	81.9	+0.3	76.7	77.6	74.7	72.3	72.2	70.7	70.2	70.5	69.9	68.2	69.2	71.5	+2.4s	
Smoke one or more packs of cigarettes per day <sup>e</sup>	82.8	82.3	80.6	78.4	78.6	77.3	80.3	80.0	81.4	81.9	83.5	84.6	+1.1	79.4	77.8	76.5	73.9	73.2	71.6	73.8	75.3	76.1	76.7	78.2	80.6	+2.4s	
Use smokeless tobacco regularly	79.1	77.2	77.1	75.1	74.0	74.1	76.5	76.3	78.0	79.2	79.4	80.6	+1.3	75.4	74.6	73.8	71.2	71.0	71.0	72.3	73.2	75.1	75.8	76.1	78.7	+2.7ss	
Take steroids <sup>f</sup>	89.8	90.3	89.9	87.9	—	—	—	—	—	—	—	—	—	90.0	91.0	91.2	90.8	—	—	—	—	—	—	—	—	—	
<i>Approx. N (in thousands)</i>	17.4	18.5	18.4	17.4	17.6	18.0	18.8	18.1	16.7	16.7	16.2	15.1	14.8	14.8	15.3	15.9	17.0	15.7	15.6	15.0	13.6	14.3	14.0	14.3			

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ‘—’ indicates data not available. Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Answer alternatives were: (1) Don’t disapprove, (2) Disapprove, (3) Strongly disapprove, and (4) Can’t say, drug unfamiliar.

<sup>b</sup>Beginning in 1997, data based on two-thirds of N indicated due to changes in questionnaire forms.

<sup>c</sup>Data based on one of two forms in 1993–96; N is one-half of N indicated. Beginning in 1997, data based on one-third of N indicated due to changes in questionnaire forms.

<sup>d</sup>Data based on one-third of N indicated due to changes in questionnaire forms.

<sup>e</sup>Beginning in 1999, data based on two-thirds of N indicated due to changes in questionnaire forms.

<sup>f</sup>Data based on two forms in 1991 and 1992 and on one of two forms in 1993 and 1994; N is one-half of N indicated.

**TABLE 8-4**  
**Long-Term Trends in Disapproval of Drug Use by Twelfth Graders**

Q. <i>Do you disapprove of people (who are 18 or older) doing each of the following?<sup>a</sup></i>	Percentage "disapproving" <sup>b</sup>														
	Class of:														
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Try marijuana once or twice	47.0	38.4	33.4	33.4	34.2	39.0	40.0	45.5	46.3	49.3	51.4	54.6	56.6	60.8	64.6
Smoke marijuana occasionally	54.8	47.8	44.3	43.5	45.3	49.7	52.6	59.1	60.7	63.5	65.8	69.0	71.6	74.0	77.2
Smoke marijuana regularly	71.9	69.5	65.5	67.5	69.2	74.6	77.4	80.6	82.5	84.7	85.5	86.6	89.2	89.3	89.8
Try LSD once or twice	82.8	84.6	83.9	85.4	86.6	87.3	86.4	88.8	89.1	88.9	89.5	89.2	91.6	89.8	89.7
Take LSD regularly	94.1	95.3	95.8	96.4	96.9	96.7	96.8	96.7	97.0	96.8	97.0	96.6	97.8	96.4	96.4
Try MDMA (Ecstasy) once or twice	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Try cocaine once or twice	81.3	82.4	79.1	77.0	74.7	76.3	74.6	76.6	77.0	79.7	79.3	80.2	87.3	89.1	90.5
Take cocaine regularly	93.3	93.9	92.1	91.9	90.8	91.1	90.7	91.5	93.2	94.5	93.8	94.3	96.7	96.2	96.4
Try crack once or twice	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Take crack occasionally	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Take crack regularly	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Try cocaine powder once or twice	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Take cocaine powder occasionally	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Take cocaine powder regularly	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Try heroin once or twice	91.5	92.6	92.5	92.0	93.4	93.5	93.5	94.6	94.3	94.0	94.0	93.3	96.2	95.0	95.4
Take heroin occasionally	94.8	96.0	96.0	96.4	96.8	96.7	97.2	96.9	96.9	97.1	96.8	96.6	97.9	96.9	97.2
Take heroin regularly	96.7	97.5	97.2	97.8	97.9	97.6	97.8	97.5	97.7	98.0	97.6	97.6	98.1	97.2	97.4
Try heroin once or twice without using a needle	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Take heroin occasionally without using a needle	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Try amphetamines once or twice	74.8	75.1	74.2	74.8	75.1	75.4	71.1	72.6	72.3	72.8	74.9	76.5	80.7	82.5	83.3
Take amphetamines regularly	92.1	92.8	92.5	93.5	94.4	93.0	91.7	92.0	92.6	93.6	93.3	93.5	95.4	94.2	94.2
Try barbiturates once or twice	77.7	81.3	81.1	82.4	84.0	83.9	82.4	84.4	83.1	84.1	84.9	86.8	89.6	89.4	89.3
Take barbiturates regularly	93.3	93.6	93.0	94.3	95.2	95.4	94.2	94.4	95.1	95.1	95.5	94.9	96.4	95.3	95.3
Try one or two drinks of an alcoholic beverage (beer, wine, liquor)	21.6	18.2	15.6	15.6	15.8	16.0	17.2	18.2	18.4	17.4	20.3	20.9	21.4	22.6	27.3
Take one or two drink nearly every day	67.6	68.9	66.8	67.7	68.3	69.0	69.1	69.9	68.9	72.9	70.9	72.8	74.2	75.0	76.5
Take four or five drinks nearly every day	88.7	90.7	88.4	90.2	91.7	90.8	91.8	90.9	90.0	91.0	92.0	91.4	92.2	92.8	91.6
Have five or more drinks once or twice each weekend	60.3	58.6	57.4	56.2	56.7	55.6	55.5	58.8	56.6	59.6	60.4	62.4	62.0	65.3	66.5
Smoke one or more packs of cigarettes per day	67.5	65.9	66.4	67.0	70.3	70.8	69.9	69.4	70.8	73.0	72.3	75.4	74.3	73.1	72.4
Take steroids	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	<i>Approx. N = 2677 2957 3085 3686 3221 3261 3610 3651 3341 3254 3265 3113 3302 3311 2799</i>														

<sup>a</sup>The 1975 question asked about people who are "20 or older."

<sup>b</sup>Answer alternatives were: (1) Don't disapprove, (2) Disapprove, and (3) Strongly disapprove. Percentages are shown for categories (2) and (3) combined.

(Table continued on next page)

**TABLE 8-4 (cont.)**  
**Long-Term Trends in Disapproval of Drug Use by Twelfth Graders**

Q. Do you disapprove of people (who are 18 or older) doing each of the following? <sup>a</sup>	Percentage "disapproving" <sup>b</sup>													'01-'02 change
	Class of:													
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	
Try marijuana once or twice	67.8	68.7	69.9	63.3	57.6	56.7	52.5	51.0	51.6	48.8	52.5	49.1	51.6	+2.5
Smoke marijuana occasionally	80.5	79.4	79.7	75.5	68.9	66.7	62.9	63.2	64.4	62.5	65.8	63.2	63.4	+0.2
Smoke marijuana regularly	91.0	89.3	90.1	87.6	82.3	81.9	80.0	78.8	81.2	78.6	79.7	79.3	78.3	-1.0
Try LSD once or twice	89.8	90.1	88.1	85.9	82.5	81.1	79.6	80.5	82.1	83.0	82.4	81.8	84.6	+2.8s
Take LSD regularly	96.3	96.4	95.5	95.8	94.3	92.5	93.2	92.9	93.5	94.3	94.2	94.0	94.0	0.0
Try MDMA (Ecstasy) once or twice	—	—	—	—	—	—	—	82.2	82.5	82.1	81.0	79.5	83.6	+4.1ss
Try cocaine once or twice	91.5	93.6	93.0	92.7	91.6	90.3	90.0	88.0	89.5	89.1	88.2	88.1	89.0	+0.9
Take cocaine regularly	96.7	97.3	96.9	97.5	96.6	96.1	95.6	96.0	95.6	94.9	95.5	94.9	95.0	0.0
Try crack once or twice	92.3	92.1	93.1	89.9	89.5	91.4	87.4	87.0	86.7	87.6	87.5	87.0	87.8	+0.8
Take crack occasionally	94.3	94.2	95.0	92.8	92.8	94.0	91.2	91.3	90.9	92.3	91.9	91.6	91.5	-0.1
Take crack regularly	94.9	95.0	95.5	93.4	93.1	94.1	93.0	92.3	91.9	93.2	92.8	92.2	92.4	+0.1
Try cocaine powder once or twice	87.9	88.0	89.4	86.6	87.1	88.3	83.1	83.0	83.1	84.3	84.1	83.3	83.8	+0.6
Take cocaine powder occasionally	92.1	93.0	93.4	91.2	91.0	92.7	89.7	89.3	88.7	90.0	90.3	89.8	90.2	+0.4
Take cocaine powder regularly	93.7	94.4	94.3	93.0	92.5	93.8	92.9	91.5	91.1	92.3	92.6	92.5	92.2	-0.4
Try heroin once or twice	95.1	96.0	94.9	94.4	93.2	92.8	92.1	92.3	93.7	93.5	93.0	93.1	94.1	+1.1
Take heroin occasionally	96.7	97.3	96.8	97.0	96.2	95.7	95.0	95.4	96.1	95.7	96.0	95.4	95.6	+0.2
Take heroin regularly	97.5	97.8	97.2	97.5	97.1	96.4	96.3	96.4	96.6	96.4	96.6	96.2	96.2	0.0
Try heroin once or twice without using a needle	—	—	—	—	—	92.9	90.8	92.3	93.0	92.6	94.0	91.7	93.1	+1.4
Take heroin occasionally without using a needle	—	—	—	—	—	94.7	93.2	94.4	94.3	93.8	95.2	93.5	94.4	+0.9
Try amphetamines once or twice twice	85.3	86.5	86.9	84.2	81.3	82.2	79.9	81.3	82.5	81.9	82.1	82.3	83.8	+1.5
Take amphetamines regularly	95.5	96.0	95.6	96.0	94.1	94.3	93.5	94.3	94.0	93.7	94.1	93.4	93.5	+0.2
Try barbiturates once or twice	90.5	90.6	90.3	89.7	87.5	87.3	84.9	86.4	86.0	86.6	85.9	85.9	86.6	+0.7
Take barbiturates regularly	96.4	97.1	96.5	97.0	96.1	95.2	94.8	95.3	94.6	94.7	95.2	94.5	94.7	+0.2
Try one or two drinks of an alcoholic beverage (beer, wine, liquor)	29.4	29.8	33.0	30.1	28.4	27.3	26.5	26.1	24.5	24.6	25.2	26.6	26.3	-0.3
Take one or two drink nearly every day	77.9	76.5	75.9	77.8	73.1	73.3	70.8	70.0	69.4	67.2	70.0	69.2	69.1	0.0
Take four or five drinks nearly every day	91.9	90.6	90.8	90.6	89.8	88.8	89.4	88.6	86.7	86.9	88.4	86.4	87.5	+1.1
Have five or more drinks once or twice each weekend	68.9	67.4	70.7	70.1	65.1	66.7	64.7	65.0	63.8	62.7	65.2	62.9	64.7	+1.8
Smoke one or more packs of cigarettes per day	72.8	71.4	73.5	70.6	69.8	68.2	67.2	67.1	68.8	69.5	70.1	71.6	73.6	+2.0
Take steroids	90.8	90.5	92.1	92.1	91.9	91.0	91.7	91.4	90.8	88.9	88.8	86.4	86.8	+0.4
	Approx. N = 2566 2547 2645 2723 2588 2603 2399 2601 2545 2310 2150 2144 2160													

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.

SOURCE: The Monitoring the Future Study, the University of Michigan.

**TABLE 8-5**

**Trends in Twelfth Graders' Attitudes Regarding Legality of Drug Use**

Q. Do you think that people (who are 18 or older) should be prohibited by law from doing each of the following? <sup>a</sup>	Percentage saying "yes" <sup>b</sup>																												
	<u>Class of:</u>																												
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	'01-'02 change
Smoke marijuana in private	32.8	27.5	26.8	25.4	28.0	28.9	35.4	36.6	37.8	41.6	44.7	43.8	47.6	51.8	51.5	56.0	51.6	52.4	48.0	42.9	44.0	40.4	38.8	39.8	39.3	38.8	39.1	38.4	-0.7
Smoke marijuana in public places	63.1	59.1	58.7	59.5	61.8	66.1	67.4	72.8	73.6	75.2	78.2	78.9	79.7	81.3	80.0	81.9	79.8	78.3	77.3	72.5	72.9	70.0	69.4	72.2	71.5	72.1	68.3	67.6	-0.6
Take LSD in private	67.2	65.1	63.3	62.7	62.4	65.8	62.6	67.1	66.7	67.9	70.6	69.0	70.8	71.5	71.6	72.9	68.1	67.2	63.5	63.2	64.3	62.0	61.2	64.7	62.6	62.9	63.1	64.2	+1.1
Take LSD in public places	85.8	81.9	79.3	80.7	81.5	82.8	80.7	82.1	82.8	82.4	84.8	84.9	85.2	86.0	84.4	84.9	83.9	82.2	82.1	80.5	81.5	79.2	80.3	82.7	80.4	80.4	78.8	79.9	+1.1
Take heroin in private	76.3	72.4	69.2	68.8	68.5	70.3	68.8	69.3	69.7	69.8	73.3	71.7	75.0	74.2	74.4	76.4	72.8	71.4	70.7	70.1	72.2	70.8	70.6	73.9	72.9	71.1	70.6	73.6	+3.0
Take heroin in public places	90.1	84.8	81.0	82.5	84.0	83.8	82.4	82.5	83.7	83.4	85.8	85.0	86.2	86.6	85.2	86.7	85.4	83.3	84.5	82.9	84.8	82.3	84.3	86.4	84.2	83.9	81.7	83.7	+2.0
Take amphetamines or barbiturates in private	57.2	53.5	52.8	52.2	53.4	54.1	52.0	53.5	52.8	54.4	56.3	56.8	59.1	60.2	61.1	64.5	59.7	60.5	57.4	55.7	57.5	54.6	54.6	58.5	55.1	56.0	55.9	56.0	+0.1
Take amphetamines or barbiturates in public places	79.6	76.1	73.7	75.8	77.3	76.1	74.2	75.5	76.7	76.8	78.3	79.1	79.8	80.2	79.2	81.6	79.7	78.5	78.0	76.4	77.6	74.3	76.5	77.4	76.1	75.4	74.5	73.6	-0.9
Get drunk in private	14.1	15.6	18.6	17.4	16.8	16.7	19.6	19.4	19.9	19.7	19.8	18.5	18.6	19.2	20.2	23.0	22.0	24.4	22.1	21.0	21.6	21.4	20.5	20.2	20.5	21.5	22.6	21.0	-1.7
Get drunk in public places	55.7	50.7	49.0	50.3	50.4	48.3	49.1	50.7	52.2	51.1	53.1	52.2	53.2	53.8	52.6	54.6	54.3	54.1	53.6	54.3	54.5	52.8	51.7	51.2	52.8	51.9	50.6	48.6	-2.0
Smoke cigarettes in certain specified public places	—	—	42.0	42.2	43.1	42.8	43.0	42.0	40.5	39.2	42.8	45.1	44.4	48.4	44.5	47.3	44.9	47.6	45.9	47.3	45.1	43.4	41.3	41.1	43.2	45.1	44.2	43.8	-0.4
	Approx. N =	2620	2959	3113	3783	3288	3224	3611	3627	3315	3236	3254	3074	3332	3288	2813	2571	2512	2671	2759	2603	2578	2422	2587	2563	2283	2146	2161	2162

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available.  
Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.  
SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>The 1975 question asked about people who are "20 or older."  
<sup>b</sup>Answer alternatives were: (1) No, (2) Not sure, and (3) Yes.

**TABLE 8-6**

**Trends in Twelfth Graders' Attitudes Regarding Marijuana Laws**

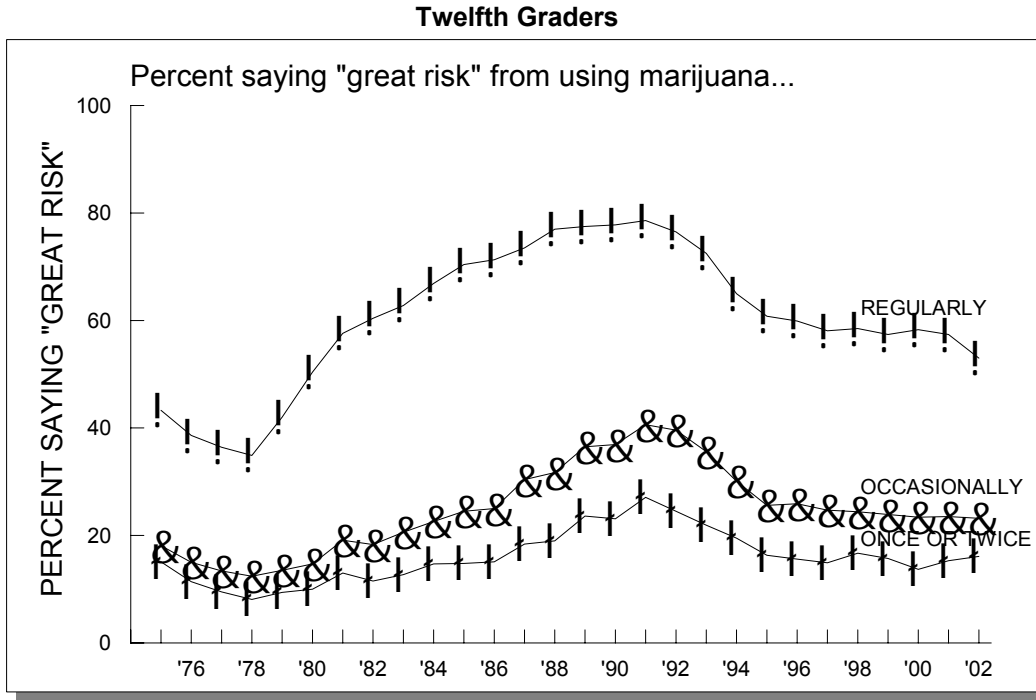
(Entries are percentages)

Q. <i>There has been a great deal of public debate about whether marijuana use should be legal. Which of the following policies would you favor?</i>	Class of:																											
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Using marijuana should be entirely legal	27.3	32.6	33.6	32.9	32.1	26.3	23.1	20.0	18.9	18.6	16.6	14.9	15.4	15.1	16.6	15.9	18.0	18.7	22.8	26.8	30.4	31.2	30.8	27.9	27.3	31.2	29.2	30.8
It should be a minor violation like a parking ticket but not a crime	25.3	29.0	31.4	30.2	30.1	30.9	29.3	28.2	26.3	23.6	25.7	25.9	24.6	21.9	18.9	17.4	19.2	18.0	18.7	19.0	18.0	21.0	20.7	24.3	23.7	23.4	24.5	24.2
It should be a crime	30.5	25.4	21.7	22.2	24.0	26.4	32.1	34.7	36.7	40.6	40.8	42.5	45.3	49.2	50.0	53.2	48.6	47.6	43.4	39.4	37.3	33.8	34.0	32.6	32.5	30.2	31.1	29.1
Don't know	16.8	13.0	13.4	14.6	13.8	16.4	15.4	17.1	18.1	17.2	16.9	16.7	14.8	13.9	14.6	13.6	14.3	15.7	15.1	14.8	14.4	13.9	14.5	15.2	16.5	15.2	15.3	15.9
Q. <i>If it were legal for people to USE marijuana, should it also be legal to SELL marijuana?</i>																												
No	27.8	23.0	22.5	21.8	22.9	25.0	27.7	29.3	27.4	30.9	32.6	33.0	36.0	36.8	38.8	40.1	36.8	37.8	36.7	33.1	32.3	29.4	29.1	30.2	30.2	27.4	30.0	29.1
Yes, but only to adults	37.1	49.8	52.1	53.6	53.2	51.8	48.6	46.2	47.6	45.8	43.2	42.2	41.2	39.9	37.9	38.8	41.4	39.5	40.7	41.7	43.4	46.7	44.8	42.4	42.9	45.5	43.6	43.6
Yes, to anyone	16.2	13.3	12.7	12.0	11.3	9.6	10.5	10.7	10.5	10.6	11.2	10.4	9.2	10.5	9.2	9.6	9.4	9.6	10.1	11.6	11.7	11.1	12.5	11.9	12.1	13.4	12.0	13.6
Don't know	18.9	13.9	12.7	12.6	12.6	13.6	13.2	13.8	14.6	12.8	13.1	14.4	13.6	12.8	14.1	11.6	12.5	13.1	12.5	13.7	12.6	12.8	13.7	15.5	14.7	13.6	14.3	13.7
Q. <i>If marijuana were legal to use and legally available, which of the following would you be most likely to do?</i>																												
Not use it, even if it were legal and available	53.2	50.4	50.6	46.4	50.2	53.3	55.2	60.0	60.1	62.0	63.0	62.4	64.9	69.0	70.1	72.9	70.7	72.5	69.0	64.6	60.2	59.9	56.4	58.3	59.0	60.3	58.1	58.6
Try it	8.2	8.1	7.0	7.1	6.1	6.8	6.0	6.3	7.2	6.6	7.5	7.6	7.3	7.1	6.7	7.0	6.3	7.4	7.3	7.6	8.8	8.8	9.1	8.1	9.3	7.3	9.3	8.4
Use it about as often as I do now	22.7	24.7	26.8	30.9	29.1	27.3	24.8	21.7	19.8	19.1	17.7	16.8	16.2	13.1	13.0	10.1	11.7	10.2	11.9	14.3	17.1	17.3	18.4	17.9	15.2	18.5	16.8	17.2
Use it more often than I do now	6.0	7.1	7.4	6.3	6.0	4.2	4.7	3.8	4.9	4.7	3.7	5.0	4.1	4.3	2.4	2.7	3.3	3.2	3.5	4.7	4.9	4.8	6.1	5.9	6.5	5.4	6.3	7.1
Use it less often than I do now	1.3	1.5	1.5	2.7	2.5	2.6	2.5	2.2	1.5	1.6	1.6	2.0	1.3	1.5	2.1	1.1	1.6	1.0	1.4	1.5	1.6	1.6	2.0	2.0	1.9	1.6	2.2	1.7
Don't know	8.5	8.1	6.6	6.7	6.1	5.9	6.9	6.0	6.4	6.0	6.5	6.1	6.3	5.0	5.7	6.1	6.4	5.7	7.0	7.3	7.4	7.7	7.9	7.8	8.1	7.0	7.3	7.0
Approx. N = 2600 2970 3110 3710 3280 3210 3600 3620 3300 3220 3230 3080 3330 3277 2812 2570 2515 2672 2768 2597 2574 2426 2585 2566 2285 2143 2160 2150																												

SOURCE: The Monitoring the Future Study, the University of Michigan.

FIGURE 8-1a

**Trends in Perceived Harmfulness of Marijuana Use  
for Eighth, Tenth, and Twelfth Graders**



**Eighth, Tenth, and Twelfth Graders**

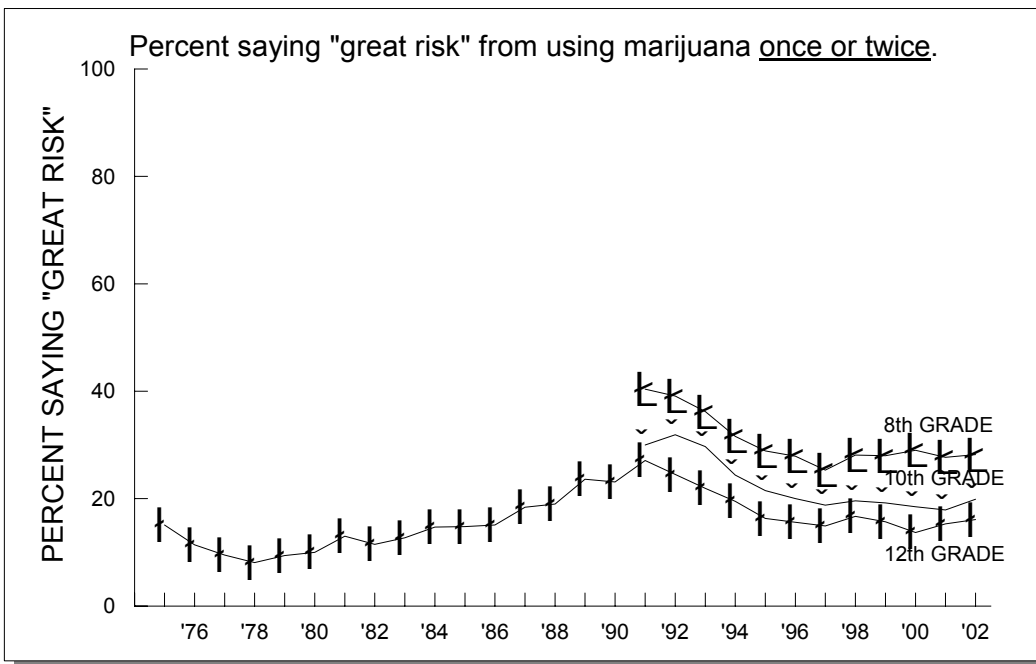
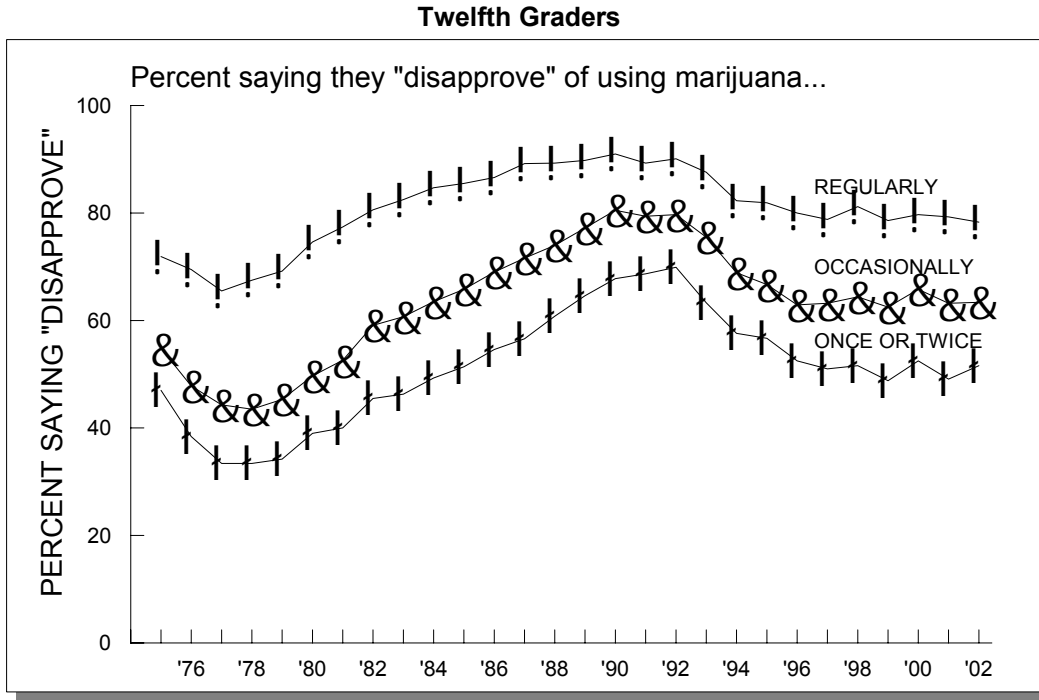


FIGURE 8-1b

**Trends in Disapproval of Marijuana Use  
for Eighth, Tenth, and Twelfth Graders**



**Eighth, Tenth, and Twelfth Graders**

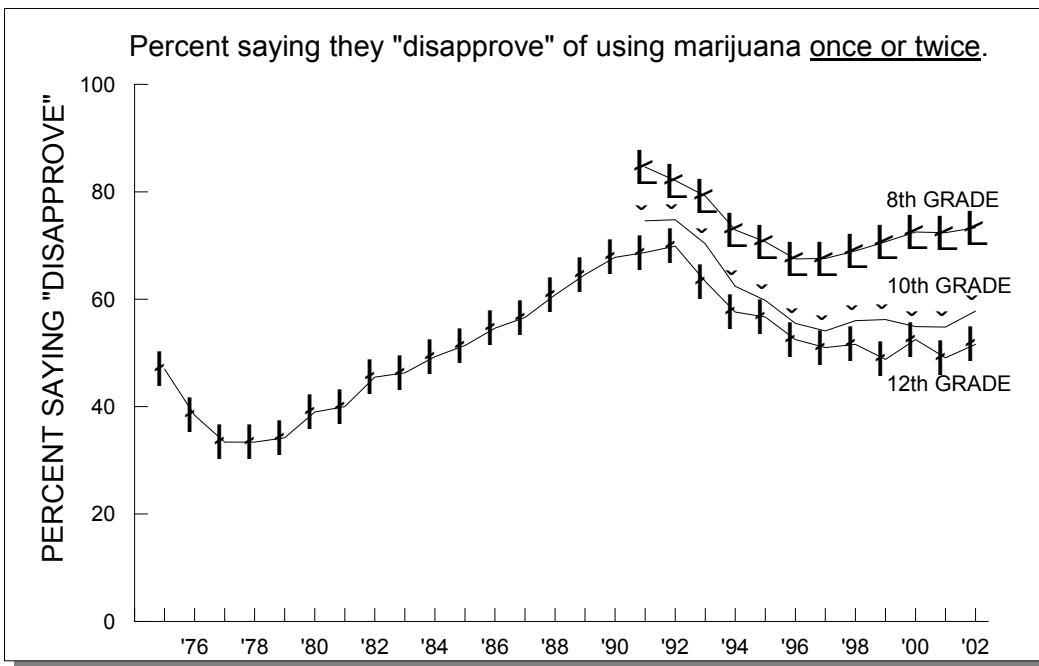
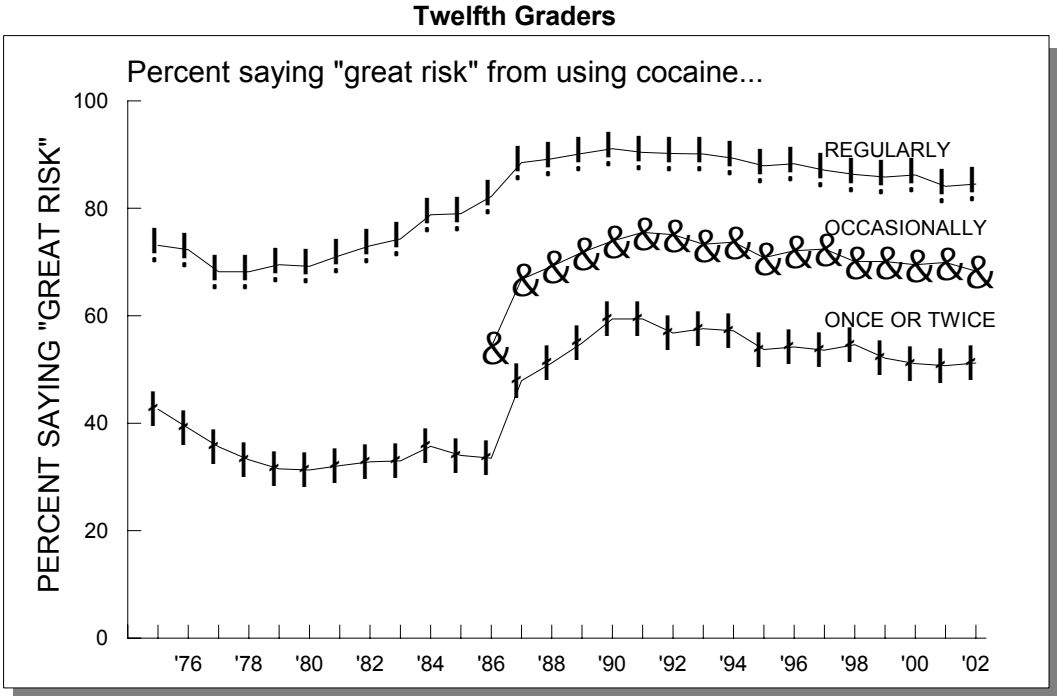


FIGURE 8-2a

**Trends in Perceived Harmfulness of Cocaine Use  
for Twelfth Graders**

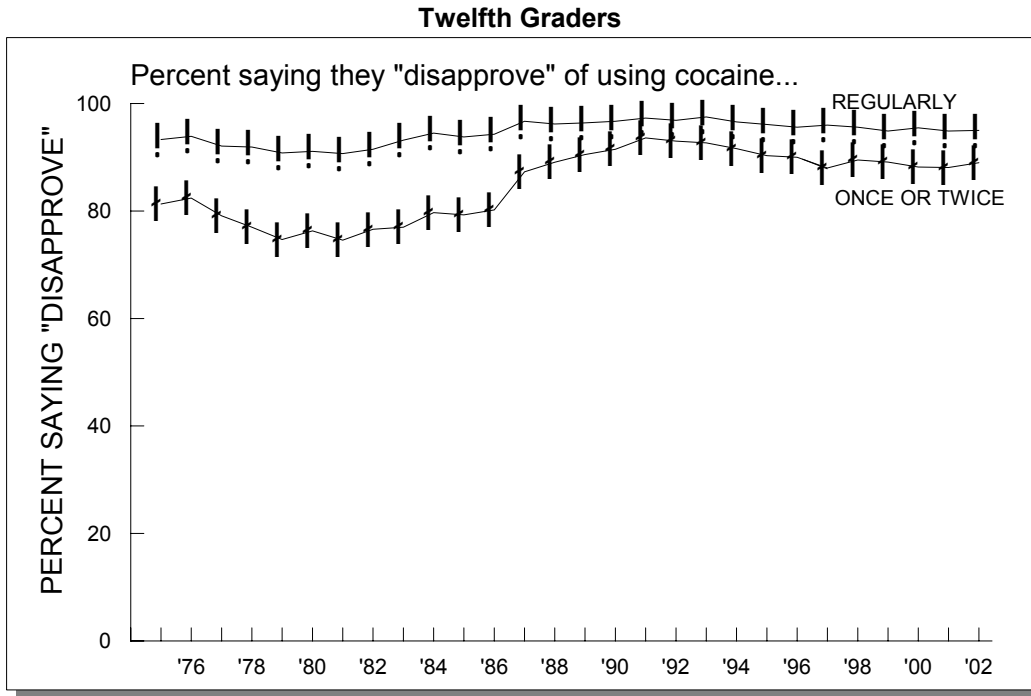


NOTE: Data not available for eighth and tenth graders.



FIGURE 8-2b

**Trends in Disapproval of Cocaine Use  
for Twelfth Graders**

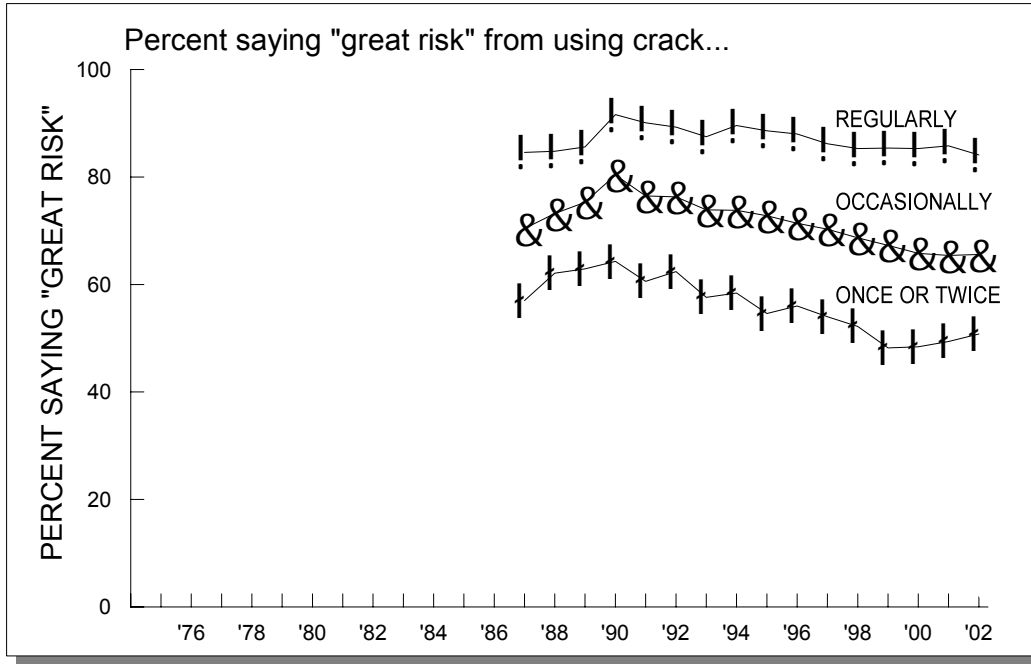


NOTE: Data not available for eighth and tenth graders.

FIGURE 8-3a

**Trends in Perceived Harmfulness of Crack Use  
for Eighth, Tenth, and Twelfth Graders**

**Twelfth Graders**



**Eighth, Tenth, and Twelfth Graders**

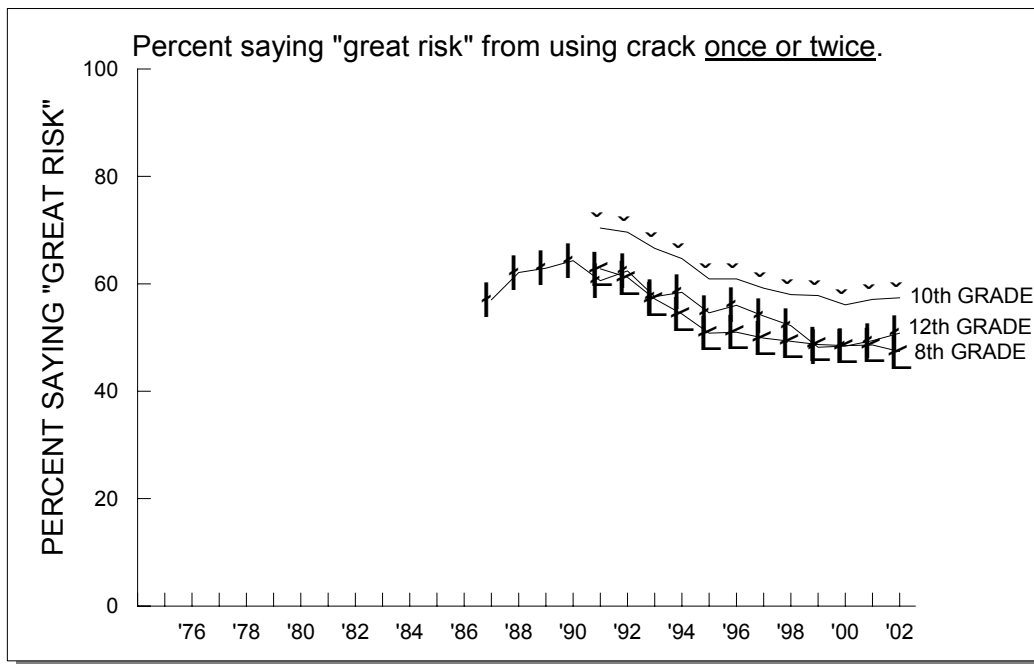
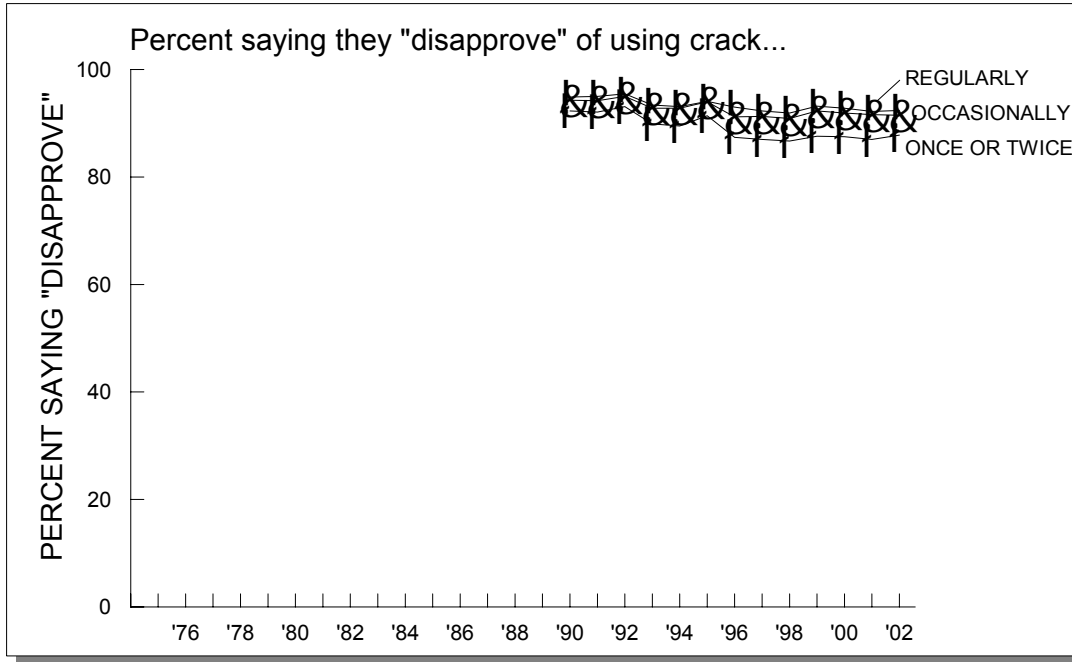


FIGURE 8-3b

**Trends in Disapproval of Crack Use  
for Eighth, Tenth, and Twelfth Graders**

**Twelfth Graders**



**Eighth, Tenth, and Twelfth Graders**

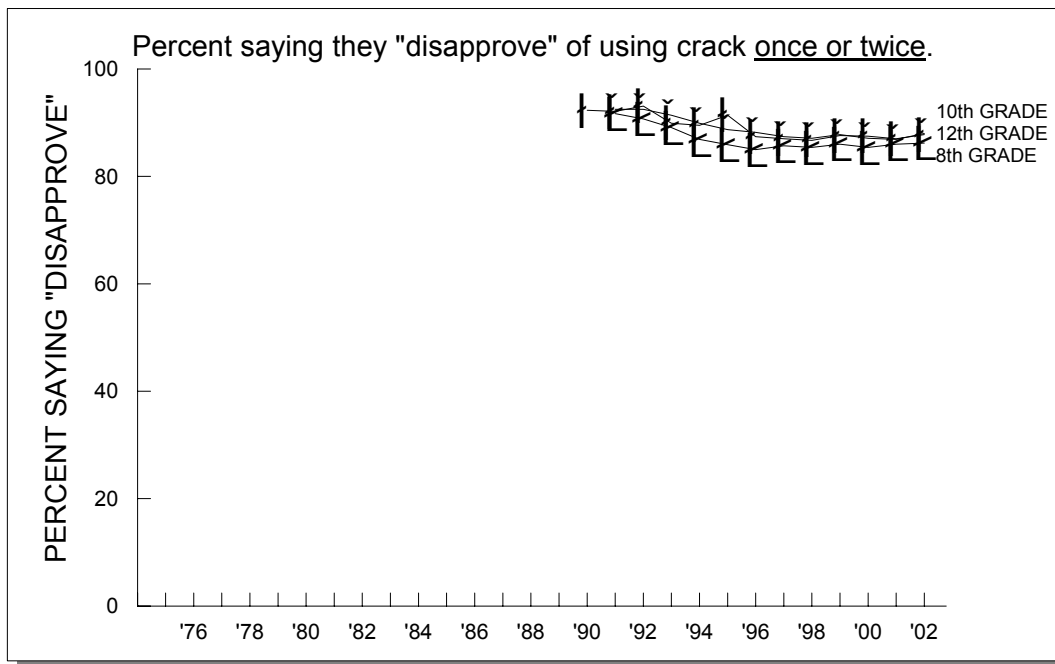


FIGURE 8-4

**Marijuana: Trends in Perceived Availability,  
Perceived Risk of Regular Use, and  
Prevalence of Use in Past 30 Days for Twelfth Graders**

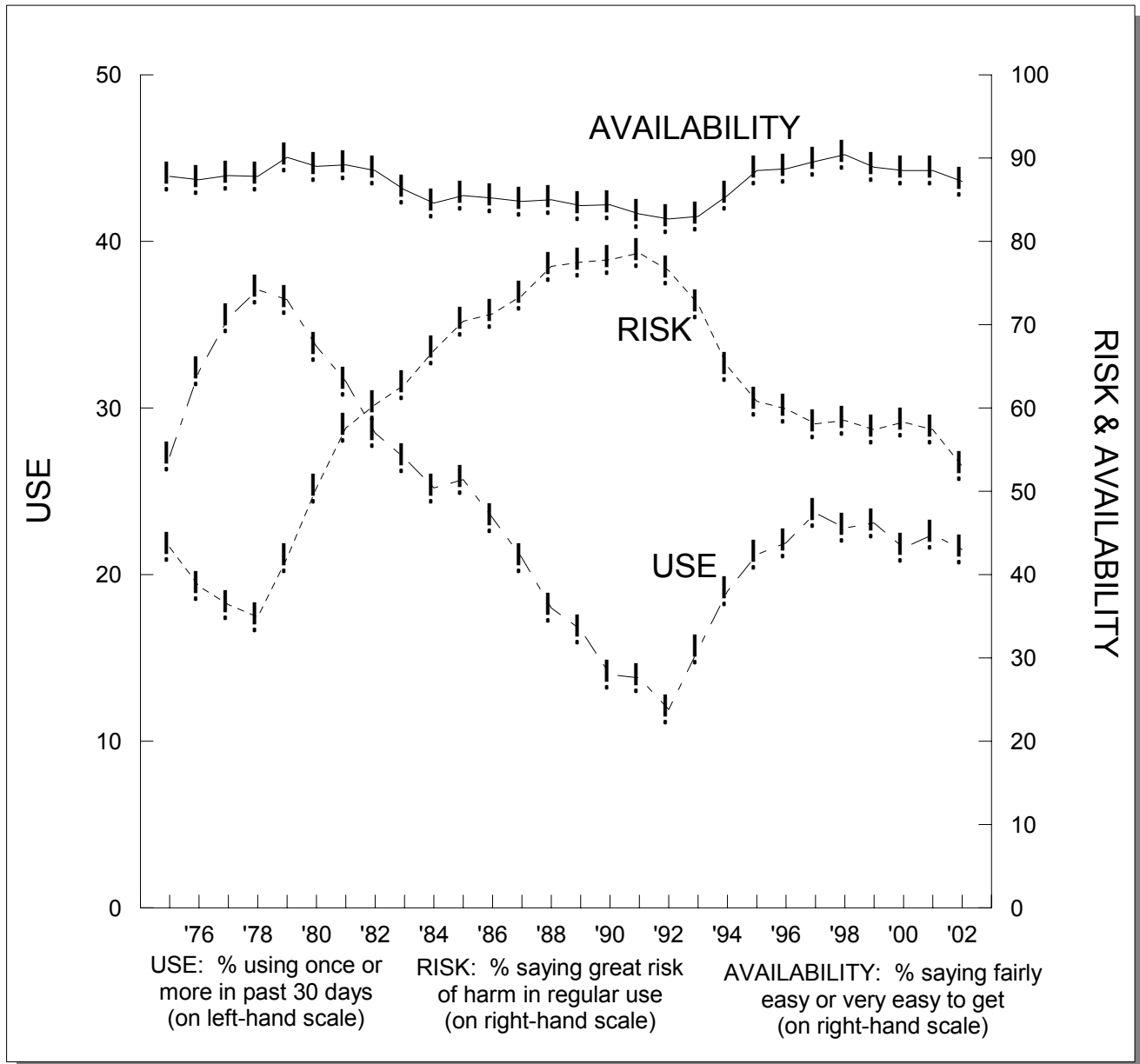


FIGURE 8-5

**Cocaine: Trends in Perceived Availability,  
Perceived Risk of Trying, and  
Prevalence of Use in Past Year for Twelfth Graders**

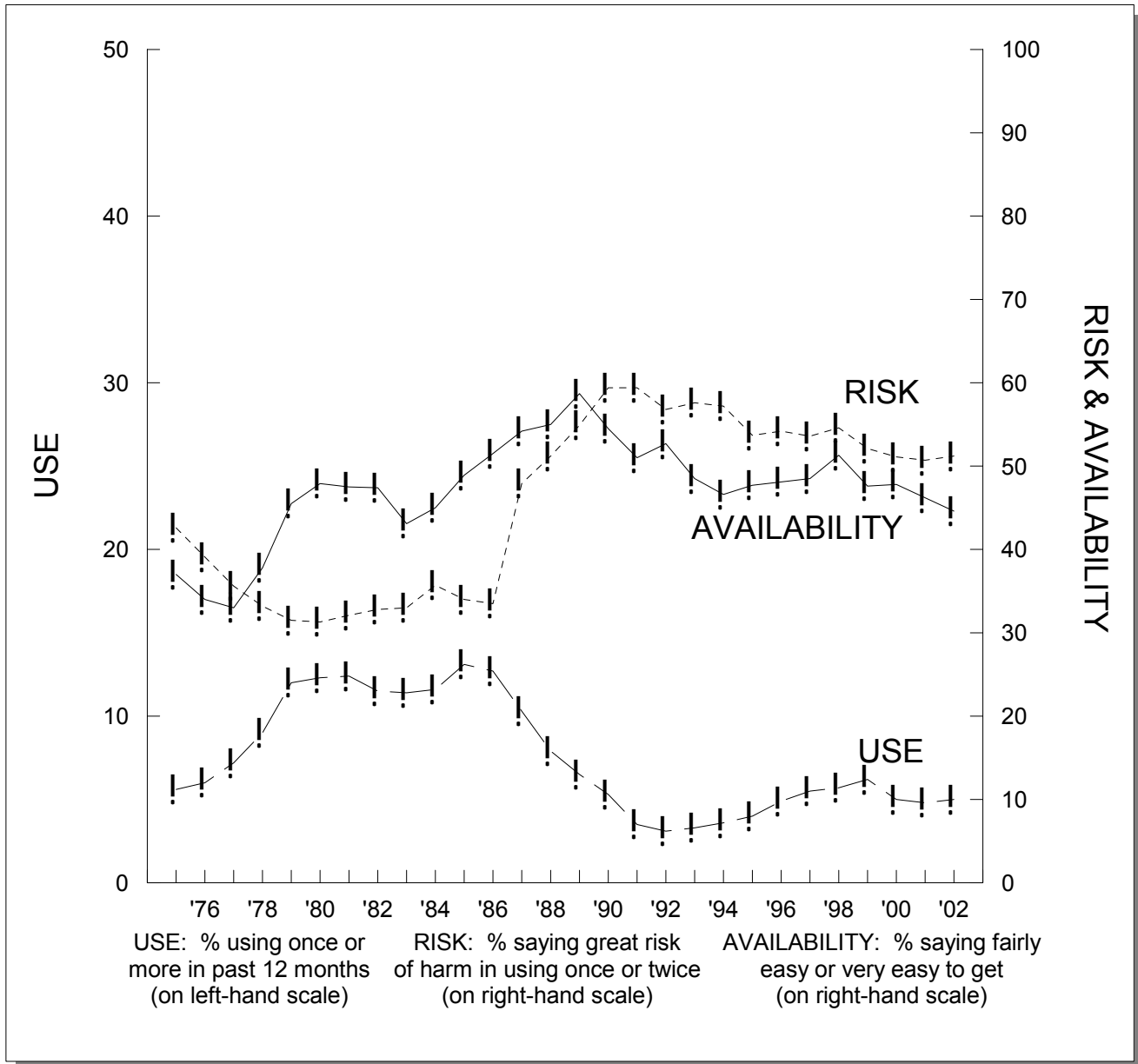
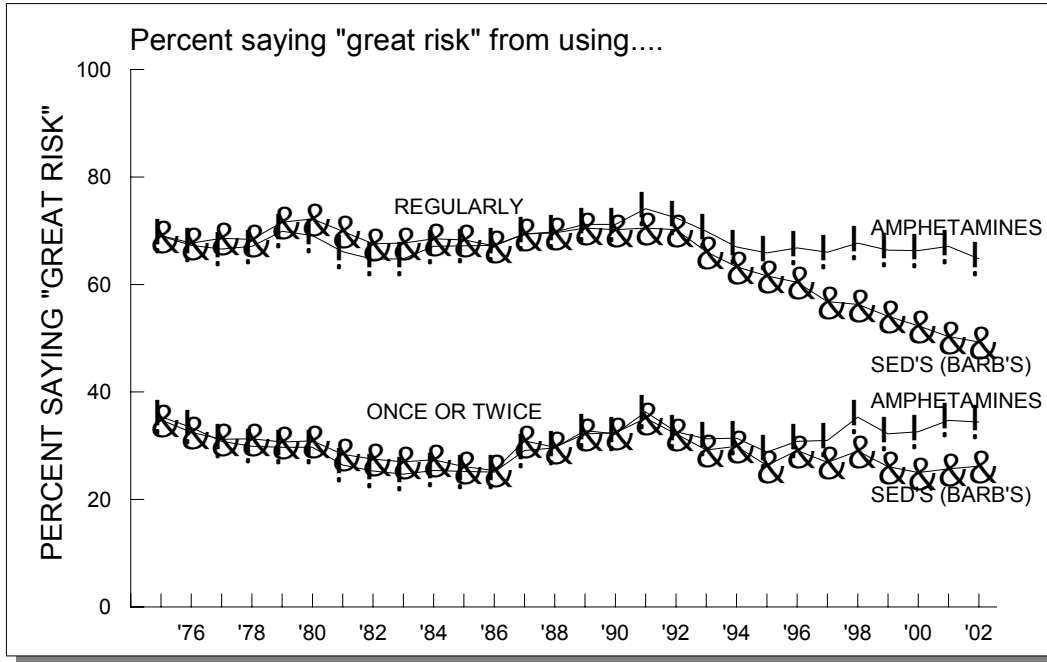


FIGURE 8-6a

**Trends in Perceived Harmfulness of Amphetamine and Sedative (Barbiturate) Use for Twelfth Graders**

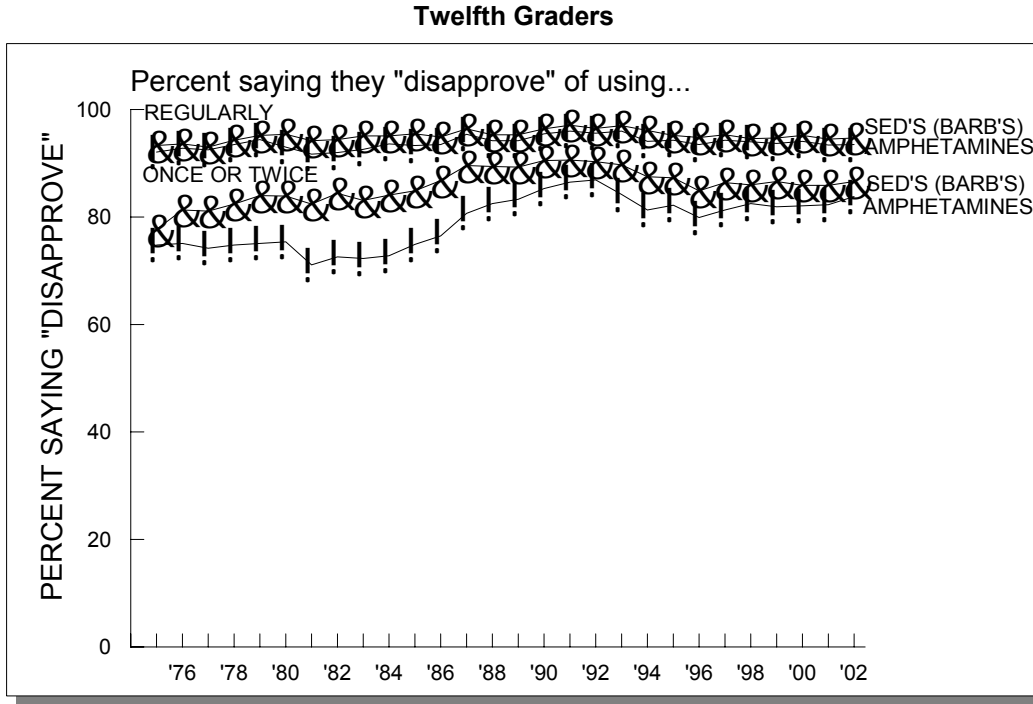
**Twelfth Graders**



NOTE: Data not available for eighth and tenth graders.

FIGURE 8-6b

**Trends in Disapproval of Amphetamine and Sedative (Barbiturate) Use for Twelfth Graders**

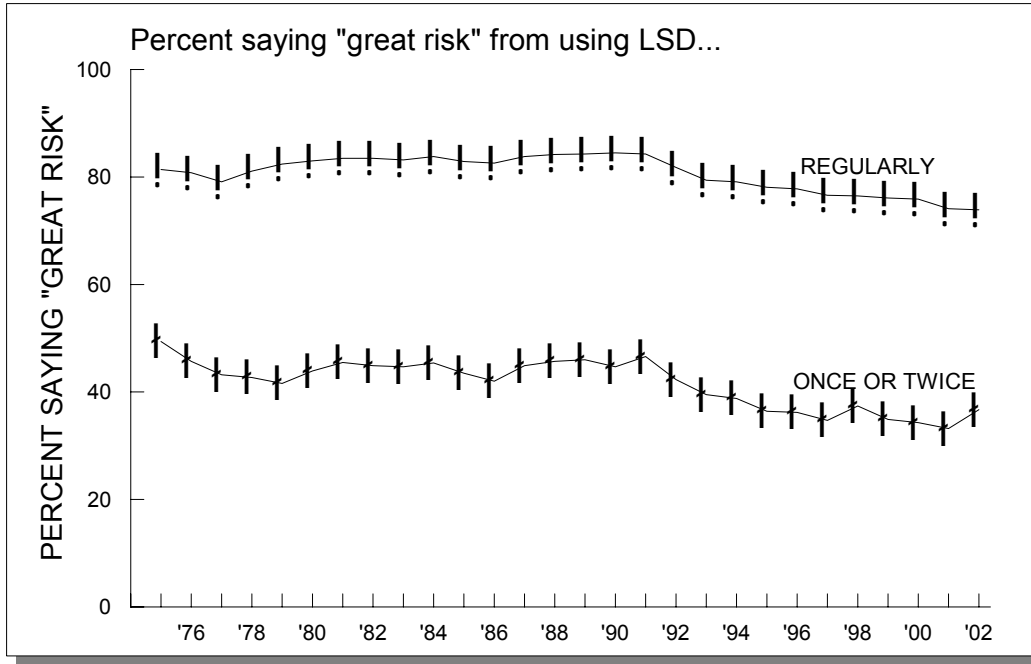


NOTE: Data not available for eighth and tenth graders.

FIGURE 8-7a

**Trends in Perceived Harmfulness of LSD Use  
for Eighth, Tenth, and Twelfth Graders**

**Twelfth Graders**



**Eighth, Tenth, and Twelfth Graders**

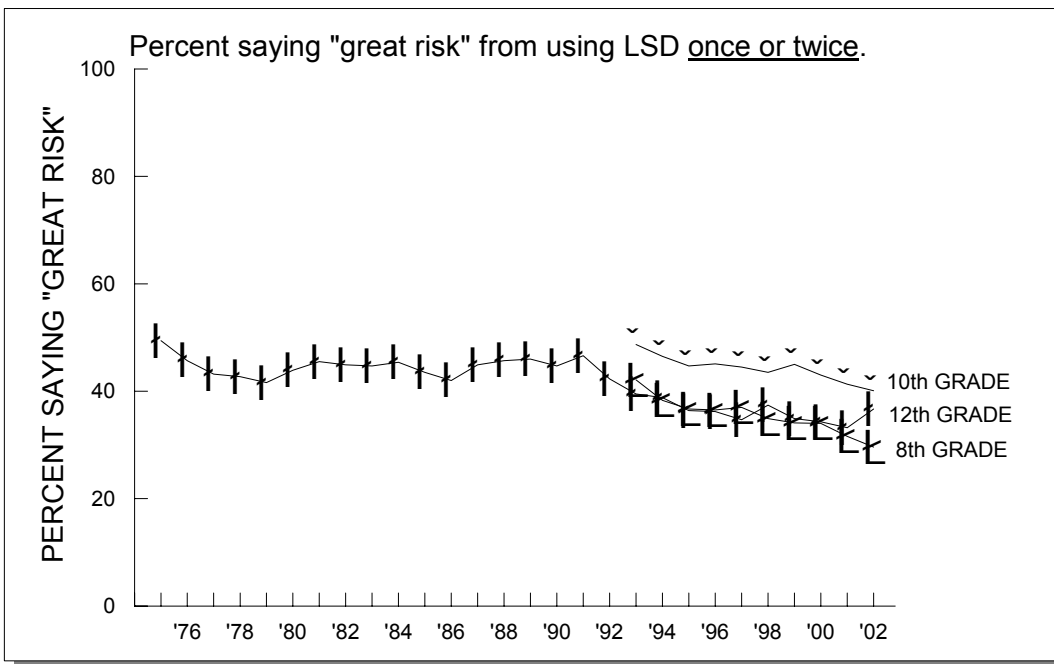
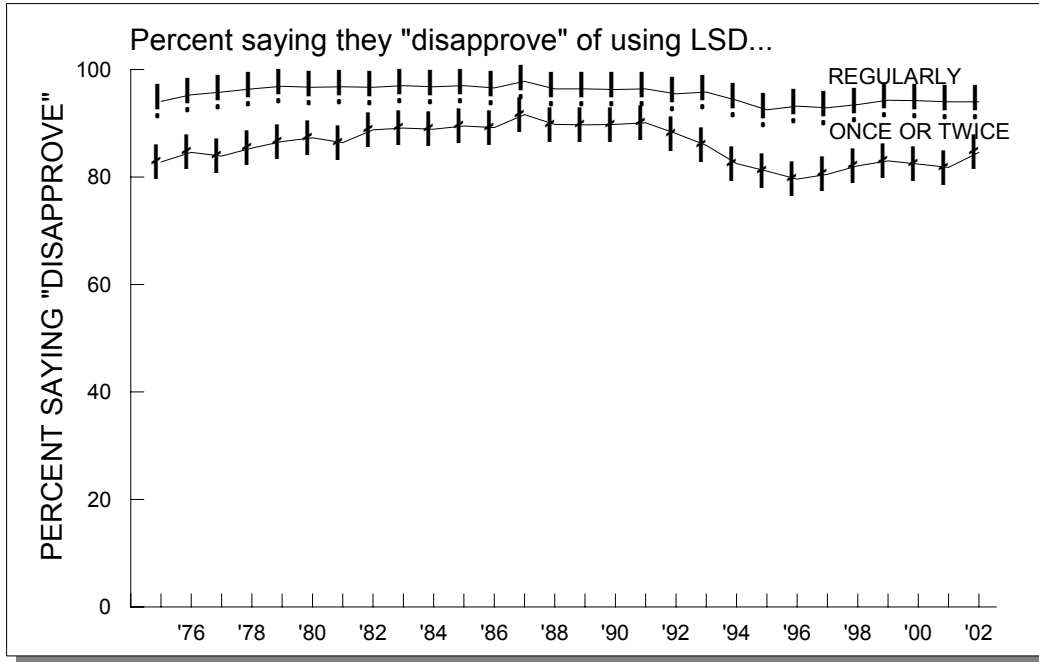




FIGURE 8-7b

**Trends in Disapproval of LSD Use  
for Eighth, Tenth, and Twelfth Graders**

**Twelfth Graders**



**Eighth, Tenth, and Twelfth Graders**

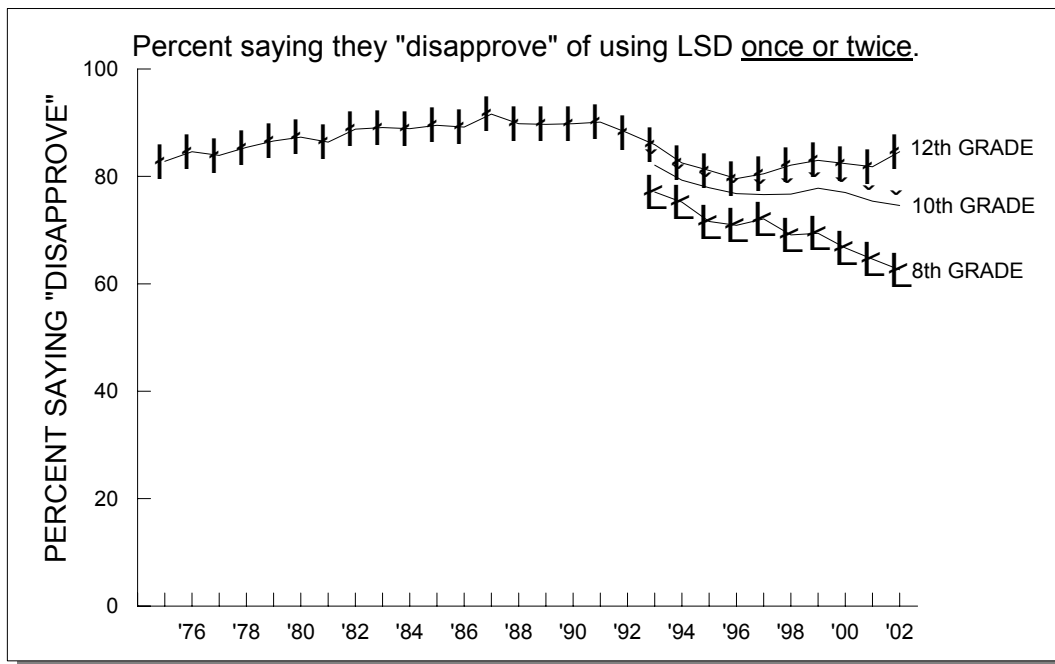
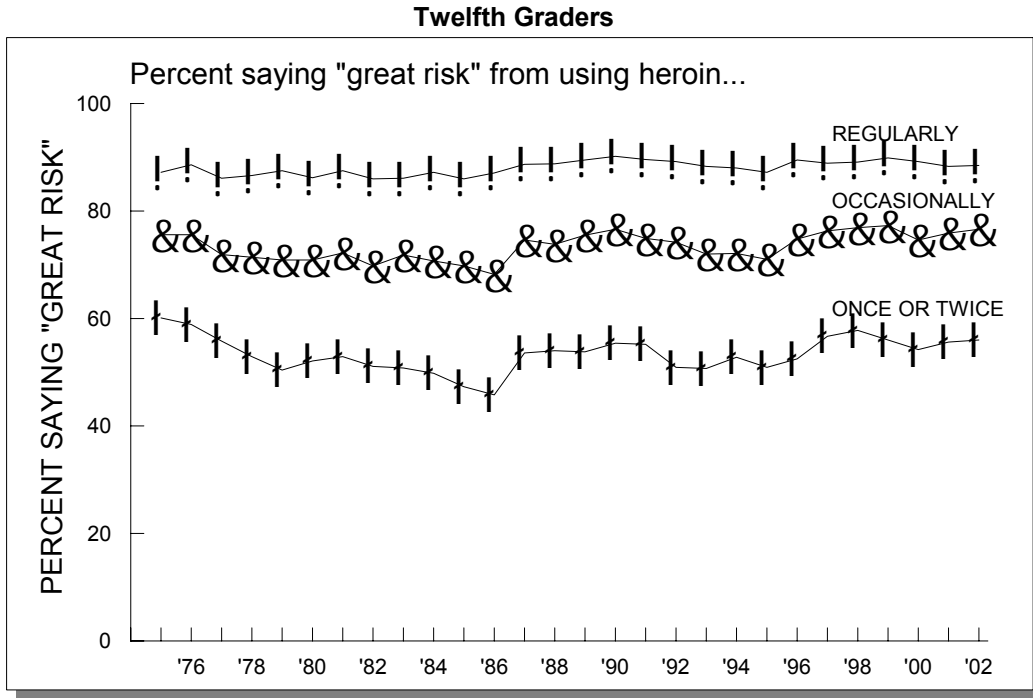


FIGURE 8-8a

**Trends in Perceived Harmfulness of Heroin Use  
for Twelfth Graders**

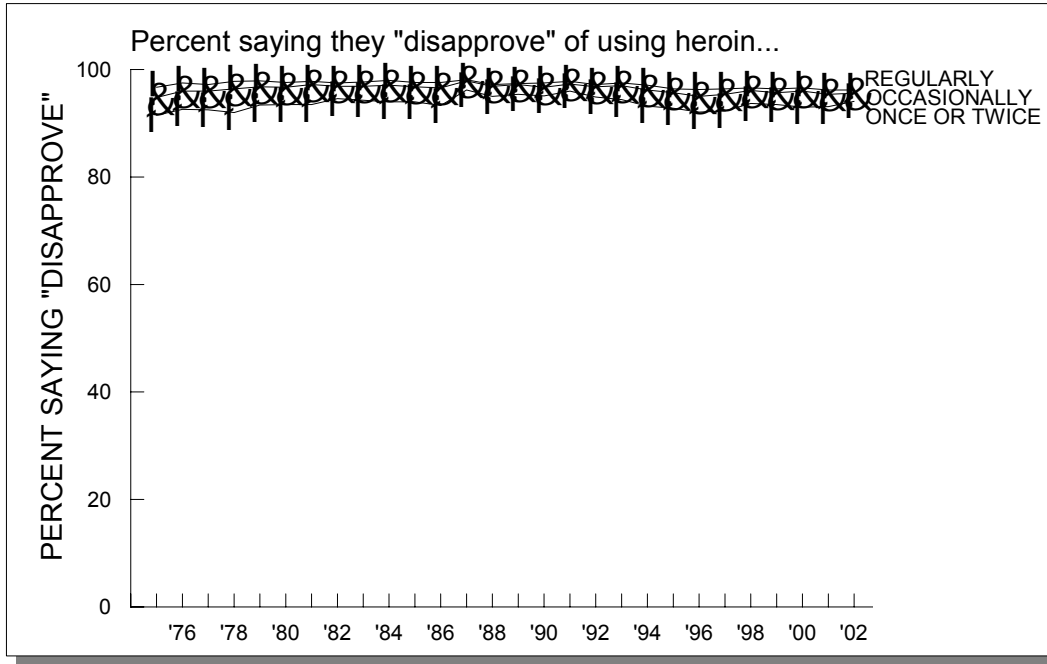


NOTE: Data not available for eighth and tenth graders.

FIGURE 8-8b

**Trends in Disapproval of Heroin Use  
for Twelfth Graders**

Twelfth Graders

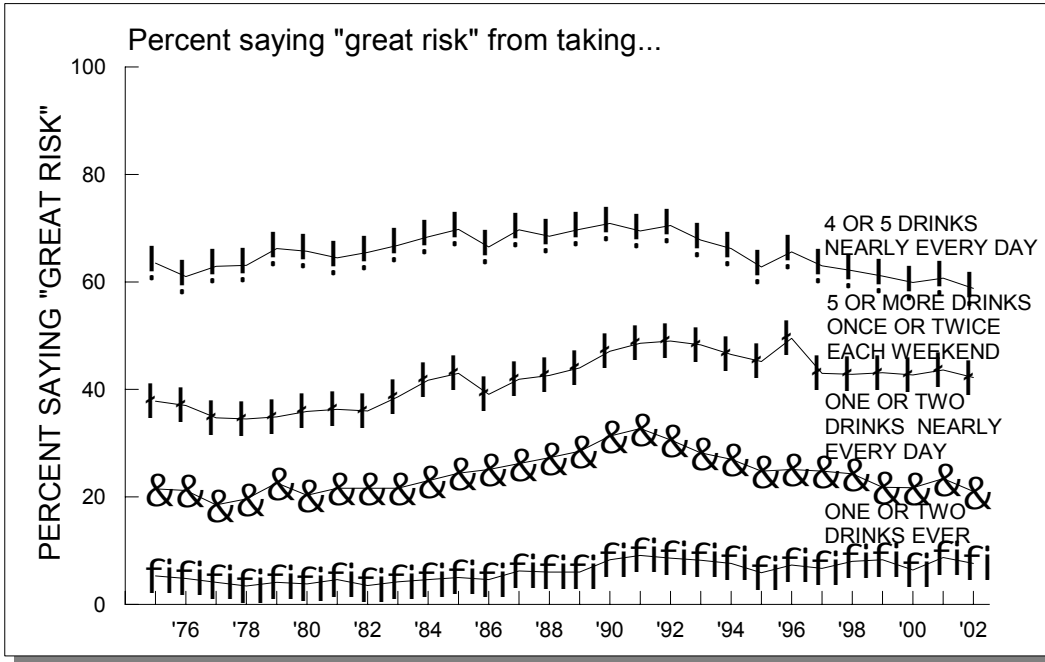


NOTE: Data not available for eighth and tenth graders.

FIGURE 8-9a

**Trends in Perceived Harmfulness of Alcohol Use  
for Eighth, Tenth, and Twelfth Graders**

**Twelfth Graders**



**Eighth, Tenth, and Twelfth Graders**

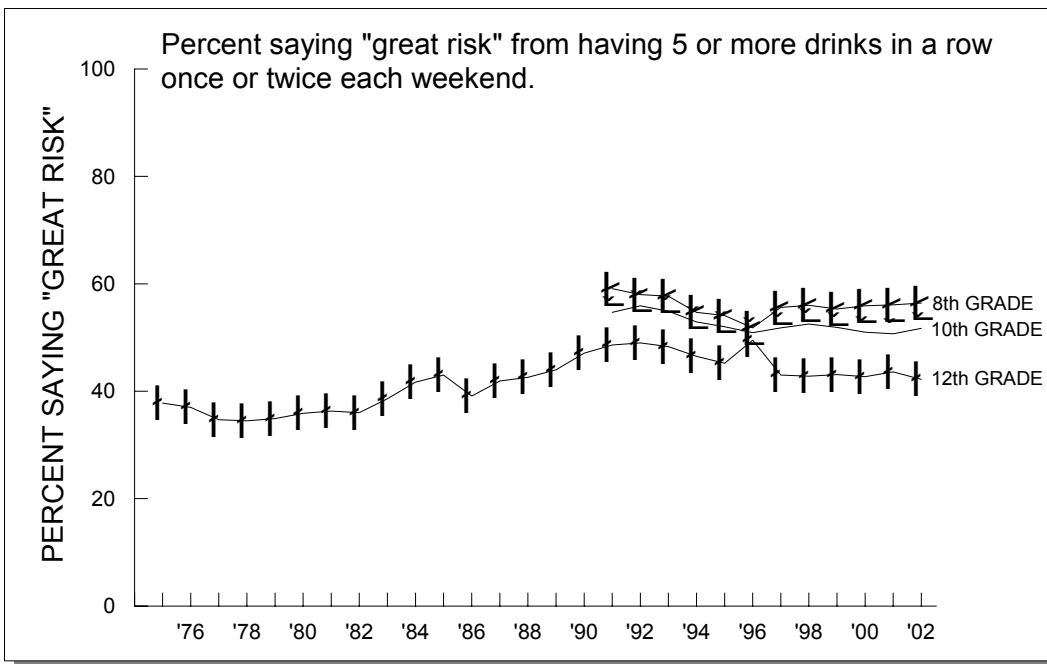
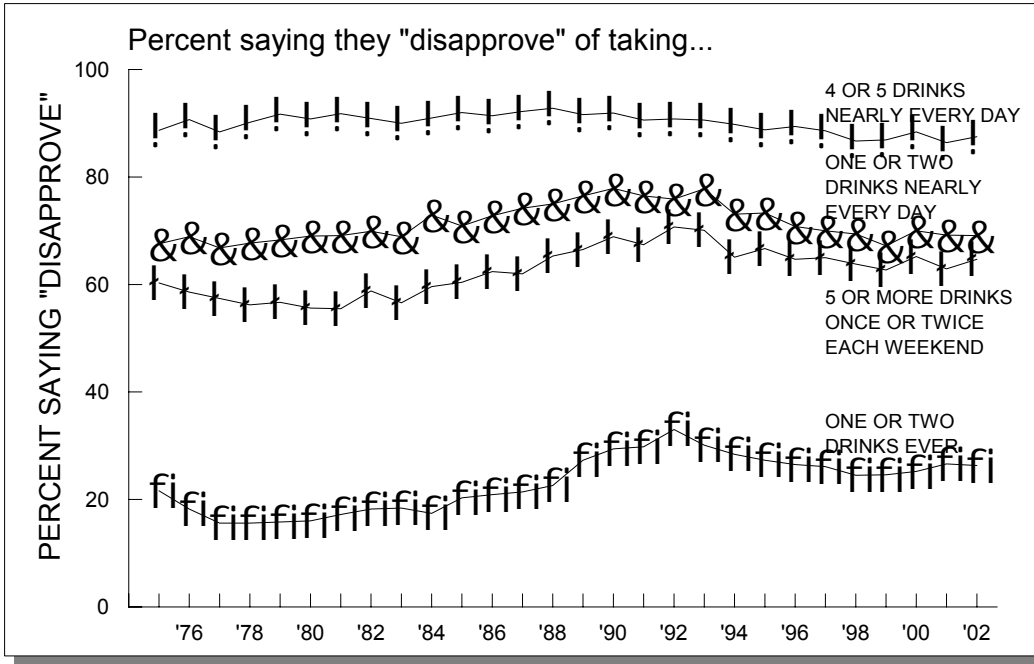


FIGURE 8-9b

**Trends in Disapproval of Alcohol Use  
for Eighth, Tenth, and Twelfth Graders**

**Twelfth Graders**



**Eighth, Tenth, and Twelfth Graders**

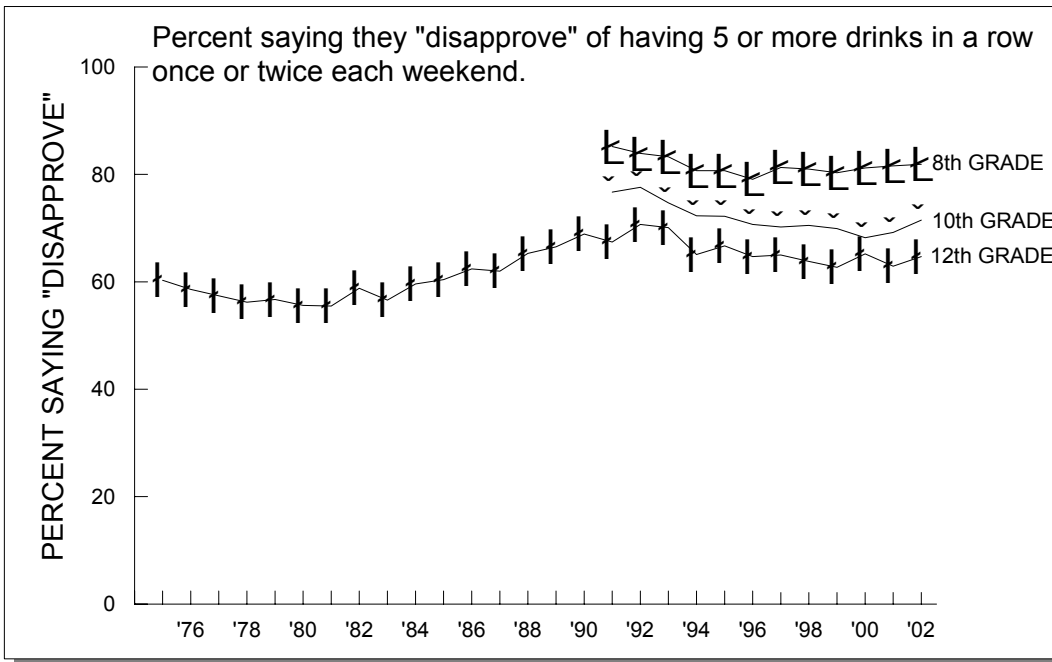


FIGURE 8-10a

**Trends in Perceived Harmfulness of Smoking One or More Packs of Cigarettes per Day for Eighth, Tenth, and Twelfth Graders**

**Eighth, Tenth, and Twelfth Graders**

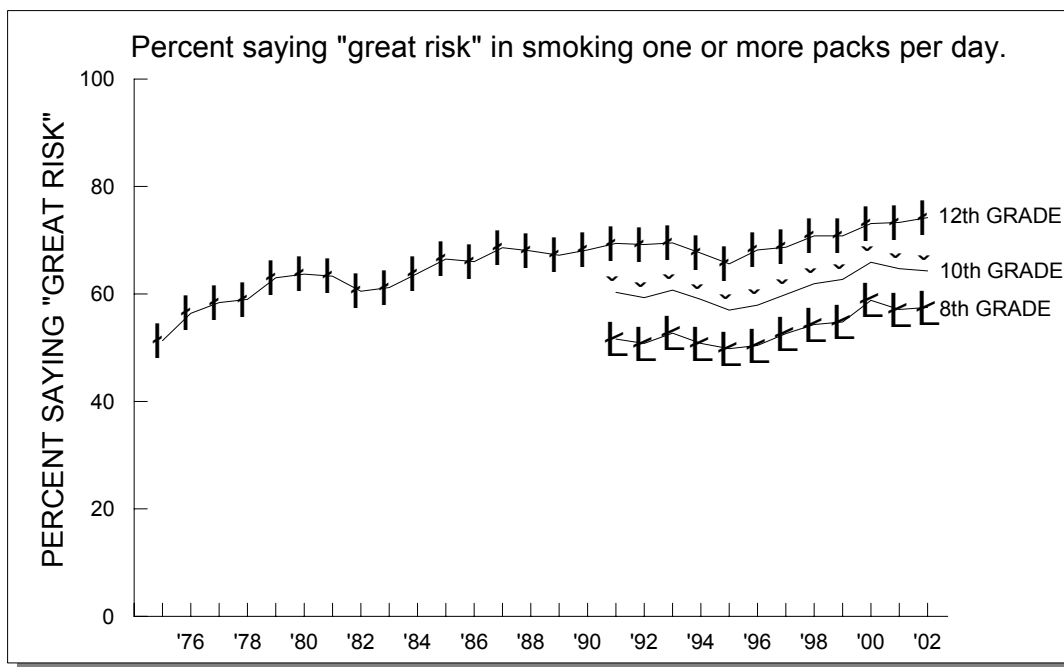


FIGURE 8-10b

**Trends in Disapproval of Smoking One or More Packs  
of Cigarettes per Day for Eighth, Tenth, and Twelfth Graders**

**Eighth, Tenth, and Twelfth Graders**

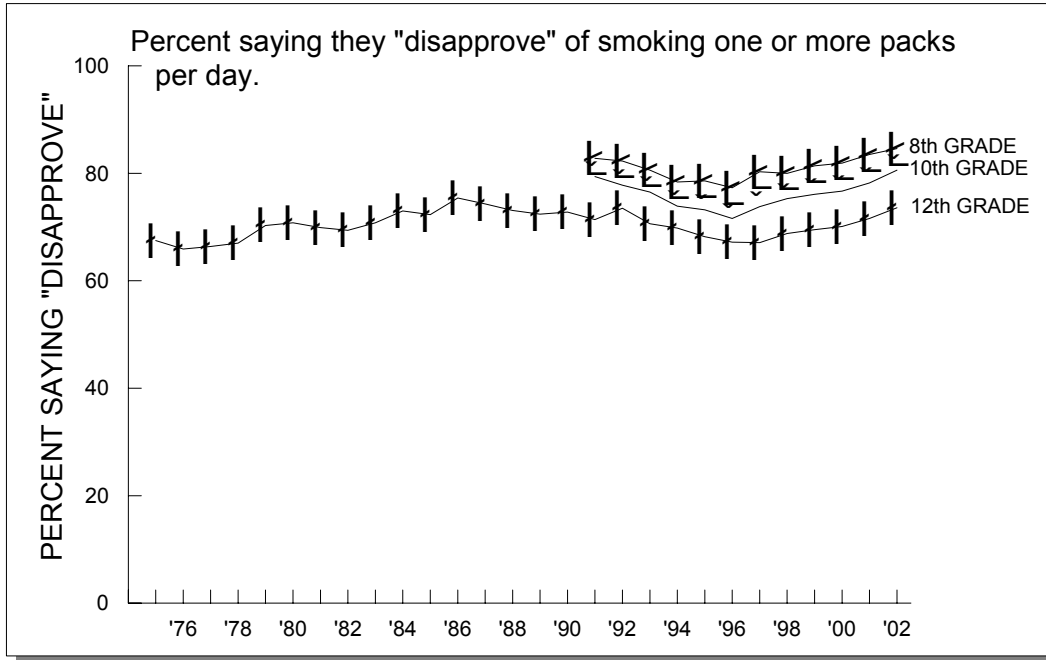


FIGURE 8-11a

**Trends in Perceived Harmfulness of Using Smokeless Tobacco Regularly for Eighth, Tenth, and Twelfth Graders**

**Eighth, Tenth, and Twelfth Graders**

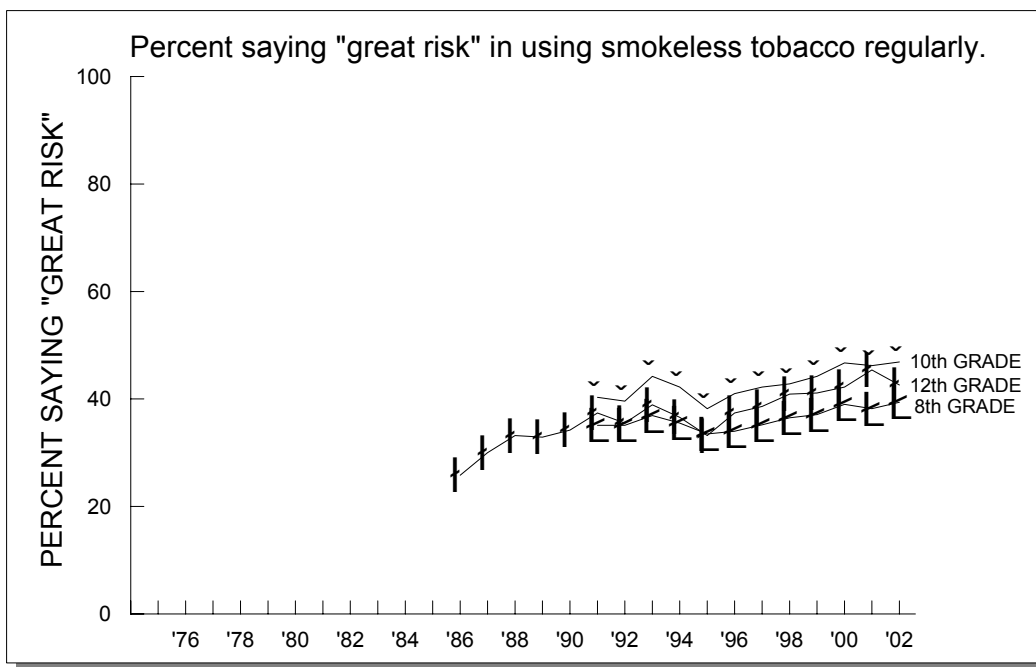
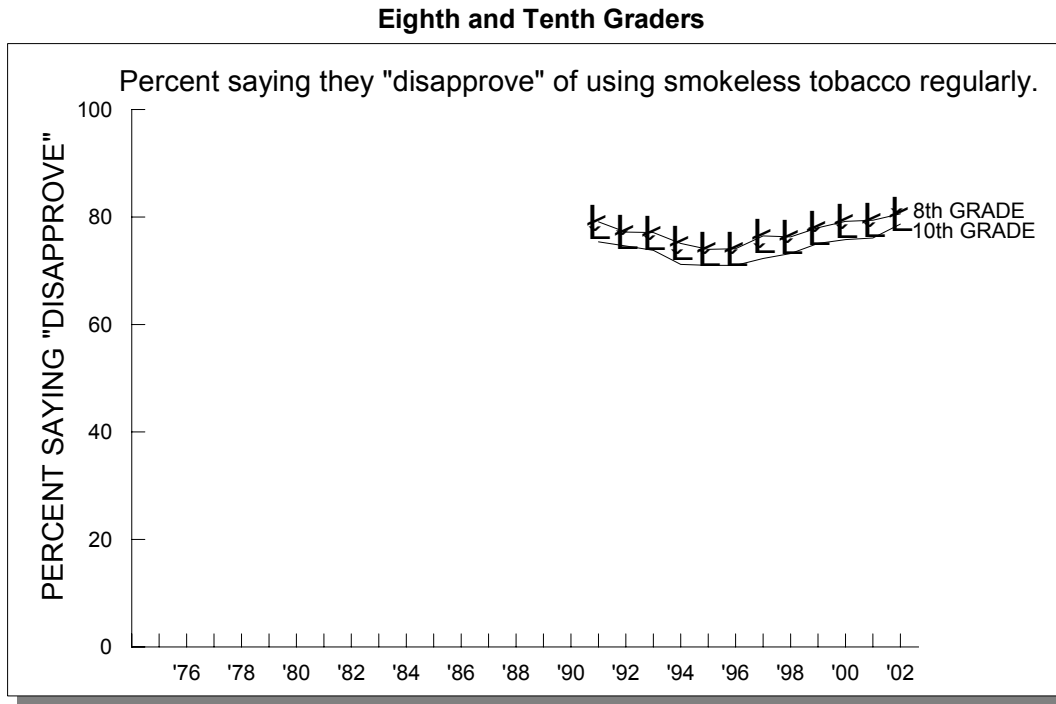




FIGURE 8-11b

**Trends in Disapproval of Using Smokeless Tobacco Regularly for Eighth and Tenth Graders**



NOTE: Data not available for twelfth graders.

## Chapter 9

### THE SOCIAL MILIEU

The previous chapter dealt with the nature of the attitudes and beliefs that young people hold in relation to a wide range of drugs, and how those attitudes and beliefs have been changing. We now turn to some forces in the social milieu that may influence those attitudes and beliefs, as well as drug use itself. It is obvious that drugs are discussed extensively in the media; they are a topic of considerable interest and conversation among young people; and they are also a matter of much concern to parents—concern that often is strongly communicated to their children. We know that young people are affected by the actual drug-taking behaviors and attitudes of their friends and acquaintances as well as by the availability of the various drugs. This section presents data on several of these relevant aspects of the social milieu.

First, we should note that measures of perceived *parental* attitudes were included near the beginning of the study, in 1975-1979, but these measures were dropped because there was little variation over time in students' responses. Thus, the data about parental attitudes presented in this chapter are based on those early results. Drug use appears to have been one area in which the perceived position of parents approached unanimity. Even at the height of the drug epidemic in 1979, a large majority of seniors reported that their parents would disapprove or strongly disapprove of their engaging in *any of the drug use behaviors* listed in Table 9-1. The relevant data on parents are displayed in Figures 9-1a, 9-1b, and 9-2 but are not discussed except in comparison to peer attitudes.

### PERCEIVED ATTITUDES OF FRIENDS: TWELFTH GRADERS

#### Perceptions of Friends' Attitudes

- Since the beginning of the study, a set of questions has asked twelfth graders to estimate their friends' attitudes about drug use (see Table 9-1). These questions ask, "*How do you think your close friends feel (or would feel) about you [taking the specified drug at the specified level]?*" (These questions parallel similar questions asked of students about their own attitudes.) In 2002, peer disapproval for experimenting with a drug was highest for trying *crack* (93%), *cocaine powder* (92%), *cocaine* (89%), *LSD* (85%), and *amphetamines* (83%). Presumably, if *heroin* or *PCP* were on the list, they, too, would receive very high peer disapproval.
- Even experimenting with *marijuana* would be viewed with disapproval by friends, according to most seniors (54%); and a large majority think their friends would disapprove if they smoked marijuana regularly (75%).
- Three quarters of all seniors think they would face peer disapproval if they smoked a *pack or more of cigarettes daily* (76%).

- While *heavy drinking on weekends* was judged by more than half (56%) to be disapproved by their friends (many of whom exhibit that behavior themselves), substantially more (72%) think consumption of *one or two drinks nearly every day* would be disapproved, and the great majority (80%) would face the disapproval of their friends if they drank *four or five drinks nearly every day*.
- In sum, peer norms among twelfth-grade students differ considerably for the various drugs and for varying degrees of involvement with those drugs, but overall they tend to be quite conservative. The great majority of seniors have friendship circles that do not condone the use of illicit drugs other than marijuana, and over half (54%) of them believe their friends would disapprove of their even trying marijuana.
- Although we did not have the space to include these questions in the eighth- and tenth-grade questionnaires, there seems little doubt that these students would have reported at least as restrictive peer norms as the twelfth graders, and quite likely more restrictive ones, based on the cross-grade comparisons in levels of personal disapproval discussed in chapter 8.

### A Comparison of the Attitudes of Parents, Peers, and Twelfth Graders

A comparison of seniors' perceptions of friends' disapproval with seniors' perceptions of parents' disapproval in the earlier years for which comparison are available (1975-1979) showed several interesting findings.

- First, there was rather little variability from year to year in students' perceptions of their parents' attitudes. Nearly *all* high school seniors said their parents would disapprove of any of the drug behaviors listed. Nor was there much variability among the different drugs in perceived parental attitudes. However, *peer* norms varied much more from drug to drug and across time. From these facts, we may conclude that peer norms have a much greater chance of explaining variability in the respondents' own individual attitudes or use than parental norms, simply because peer norms vary more. We wish to emphasize that this is quite different than saying that parental attitudes do not matter, or even that they matter less than peer attitudes.
- Despite less variability in parental attitudes, the *ordering* for disapproval of drug use behaviors was much the same as for peers. That is, among the illicit drugs asked about, the highest frequencies of perceived disapproval were for trying crack, while the lowest frequencies were for trying marijuana.
- A comparison with the seniors' own attitudes regarding drug use reveals that, on average, they are much more in accord with their peers than they were with their parents, at least in the years in which both were measured (see Figures 9-1a, 9-1b, and 9-2). The differences between seniors' own disapproval ratings in 1979 and those attributed to their parents tended to be large, with parents seen as more conservative overall in relation to *every drug*, licit or illicit. The largest difference occurred in the case of *marijuana* experimentation, of which only 34% of seniors in 1979 said they disapproved, versus

85% who said their parents would disapprove. Although seniors' own disapproval rate of experimenting with marijuana has risen considerably (it was 52% in 2002), it is likely that the greatest disparity would still remain between students' own attitudes and those of their parents (versus their peers, 54% in 2002) on the issue of such marijuana use.

### Trends in Perceptions of Friends' Attitudes

A number of important changes in twelfth graders' perceptions of their peers' attitudes have taken place. These shifts are presented graphically in Figures 9-1a, 9-1b, and 9-2. Adjusted trend lines have been used for data collected before 1980. We discovered that the deletion in 1980 of the parental attitude questions, which were located immediately preceding the questions about friends' attitudes, removed what we judged to be an artifactual depression of the ratings of friends' attitudes, a phenomenon known as a question-context effect. This effect was particularly evident in the trend lines dealing with friends' disapproval of alcohol use, where otherwise smooth trend lines showed abrupt upward shifts in 1980. It appears that when questions about parents' attitudes were present, respondents tended to understate peer disapproval in order to emphasize the *difference* between their parents' attitudes and their peers' attitudes. In the adjusted lines, we have attempted to correct for that artifactual depression in the 1975, 1977, and 1979 scores.<sup>79</sup> We think the adjusted trend lines give a more accurate picture of the change that took place then. Note that the question-context effect seems to have had more influence on the questions dealing with cigarettes and alcohol than on those dealing with illicit drugs. Aside from this change attributable to question context, a number of real and important changes have occurred in friends' disapproval.

- For each level of *marijuana* use—trying once or twice, occasional use, and regular use—there was a *drop* in perceived disapproval of both parents and friends in the late 1970s. We know from our other findings that these perceptions of peers' norms correctly reflected actual shifts in the individual attitudes of their peers—that is, disapproval of marijuana use was, in fact, decreasing among seniors (see Figure 9-1a). There is little reason to suppose such perceptions were less accurate in reflecting shifts in parents' attitudes. Therefore, we conclude that the social norms regarding marijuana use among adolescents and adults had been relaxing before 1979. However, consistent with the seniors' reports about their own attitudes, there was a sharp reversal in peer norms and peer disapproval of marijuana use increased for more than a decade, through 1992. In 1993 another sharp reversal occurred, with the percentage of seniors saying that their friends would disapprove dropping from 3 to 7 percentage points, depending on the level of use (i.e., once or twice, occasionally, or regularly). Perceived peer disapproval dropped another 9 to 14 percentage points by 1997, before beginning to turn upward again in 1998 through 2001 and then dropping 3 to 4 percentage points in 2002.

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<sup>79</sup>The correction evolved as follows: we assumed that a more accurate estimate of the true change between 1979 and 1980 could be obtained by taking an average of the changes observed in the year prior and the year subsequent, rather than by taking the observed change (which we knew to contain the effect of a change in question context). We thus calculated an *adjusted* 1979-1980 change score by taking an average of one half the 1977-1979 change score (our best estimate of the 1978-1979 change) plus the 1980-1981 change score. This estimated change score was then subtracted from the observed change score for 1979-1980, the difference being our estimate of the amount by which peer disapproval of the behavior in question was being understated because of the context in which the questions occurred prior to 1980. The 1975, 1977, and 1979 observations were then adjusted upward by the amount of that correction factor.

- From 1975 through 1980, relatively little change occurred in either self-reported attitudes or perceived peer attitudes toward trying *amphetamines* once or twice (see Figure 9-1b); then, in 1981 both measures showed significant and parallel dips in disapproval, and at the same time use rose sharply. From 1981 to 1992, disapproval rose fairly steadily as use declined. Between 1992 and 1996, both friends' disapproval and personal disapproval of experimental use decreased significantly as use increased slightly. Friends' disapproval leveled in 1997 at 80% and by 2002 was up slightly to 83% while use remained fairly level.
- Peer disapproval of *LSD* use, which had been high and relatively stable for some years, decreased steadily between 1988 and 1997 as use increased significantly (see Figure 9-1b). In 1998 peer disapproval began to increase and continued to increase into 2001 before leveling in 2002; use decreased significantly during this period.
- While perceived attitudes of friends were not asked about *barbiturate* use, it seems likely that such perceptions moved in parallel to the seniors' own attitudes, since such parallel movement has been observed for the use of virtually all other drugs (see Figures 9-1a and 9-1b).
- Seniors' own disapproval of experimental *cocaine* use dropped between 1976 and 1979 as use increased, and then it rose very gradually through 1991. Questions on friends' attitudes about cocaine use were added to the study in 1986. Between 1986 and 1992, a sharp increase in peer disapproval of experimental or occasional cocaine use was observed, with the proportion saying that their close friends would disapprove of their experimenting with cocaine rising from 80% in 1986 to 92% in 1992. This corresponds to the period in which an even larger increase in perceived risk occurred along with a precipitous drop in actual use; and we have hypothesized that the change in the perceived dangers of using cocaine contributed to changes in the acceptability of using that drug.<sup>80</sup> From 1993 through 1995, perceived friends' disapproval stabilized, followed by some decrease in 1996 and 1997. Friends' disapproval increased in 1998 but has remained quite stable since.
- With regard to *regular cigarette smoking*, the proportion of seniors saying that their friends would disapprove of them smoking a pack or more daily rose from 64% (adjusted) in 1975 to 74% in 1980 (see Figure 9-2). Use declined from 1977 to 1981. Through the next 12 years, perceived peer disapproval fluctuated by only a few percentage points and then dropped significantly between 1992 and 1995, from 76% to 69%. Use rose from 1992 to 1997. Reported peer disapproval flattened from 1995 to 1998 but has since increased by 7 percentage points to 76% in 2002; and use has been declining since 1998, including a significant decline in 2002 in daily smoking.

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<sup>80</sup>Johnston, L. D. (1991). Toward a theory of drug epidemics. In R. L. Donohew, H. Sypher, & W. Bukoski (Eds.), *Persuasive communication and drug abuse prevention* (pp. 93-132). Hillsdale, NJ: Lawrence Erlbaum.

- For alcohol, the perceived peer norms for *weekend binge drinking* generally moved in parallel with seniors' statements about their own personal disapproval. A slight decline in friends' disapproval occurred from the mid-1970s until the early 1980s, followed by a period of gradual increase between 1983 and 1992. (See Figure 9-2.) Some divergence occurred when seniors reported their own attitudes becoming less tolerant while perceived peer norms changed more slowly, suggesting some "collective ignorance" of the extent to which peers disapproved of this activity. Both measures declined some between 1992 and 1998. The proportion saying their close friends would disapprove dropped from 61% in 1992 to 56% in 1998, where it remains in 2002.
- *Heavy daily drinking* is seen by the great majority of seniors (80% in 2002) as disapproved by their peers. Little systematic change occurred for almost two decades (from 1975 to 1993), followed by a slight decline between 1993 and 1997, to 83%; it then remained fairly level through 2001 before a drop to 80% in 2002. Taking *one or two drinks nearly every day* saw some growth in peer disapproval between 1981 and 1990 (from 70% to 79%), but it has fallen back some in the years since then (to 72% in 2002).

## FRIENDS' USE OF DRUGS

It is generally acknowledged that much youthful drug use is initiated through a peer social-learning process, and research has shown a high correlation between an individual's illicit drug use and that of his or her friends. Such a correlation can, and probably does, reflect several causal patterns: (a) a person with friends who use a drug will be more likely to try the drug; (b) conversely, the individual who is already using a drug will be more likely to introduce friends to the experience; and (c) users are more likely to establish friendships with other people who use.

Given the potential importance of exposure to drug use by others, we thought it useful to monitor students' association with others taking drugs, as well as their perceptions about the extent to which their friends use drugs. Two sets of questions, each in a different questionnaire form and together covering all or nearly all of the categories of drug use treated in this report, ask seniors to indicate for each drug (a) how often during the past 12 months they were around people taking it to get high or for "kicks" and (b) what proportion of their own friends use it. (The data dealing with twelfth graders' direct exposure to people using particular drugs may be found in Table 9-2. The questions dealing with their friends' use are shown in Table 9-4.) As would be expected, respondents' answers to these two questions are highly correlated with the respondents' own drug use; thus, for example, seniors who have recently used marijuana are much more likely to report that they have been around others getting high on marijuana and that most of their friends use it. The questions on proportions of friends using the various drugs were included in the questionnaires used for eighth and tenth graders, and the results for those age groups are discussed in a separate section.

### Exposure to Drug Use by Friends and Others: Twelfth Graders

A comparison of the aggregated responses about friends' use and about being around people in the last 12 months who were using various drugs to get high reveals a high degree of correspondence between these two indicators of exposure, even though these two questions appear in separate forms of the questionnaire. For each drug, the proportion of respondents saying "none" of their friends use it is fairly close to the proportion who say that during the last 12 months they have not been around anyone who was using that drug to get high. Similarly, the proportion reporting that "most" or "all" of their friends use a given drug bears a rough similarity to the proportion saying they have "often" been around people getting high on that drug.

- As would be expected, reports of exposure and friends' use closely parallel the figures on seniors' own use (compare Figures 4-1 and 9-4). It is no surprise that the highest levels of exposure involved *alcohol*; one half (51%) said they have "often" been around people using it to get high. What may come as a surprise is that 28% of all seniors said that most or all of their friends *get drunk* at least once a week. (This *is* consistent, however, with the fact that 29% said they personally had taken five or more drinks in a row at least once during the prior two weeks.)
- After alcohol, students are exposed next most frequently to *marijuana*. Nearly three quarters of the twelfth graders (74%) reported having been around people using marijuana during the prior year. Some 31% said they have "often" been around people using it to get high, and another 23% said they have been exposed "occasionally." One fifth (21%) said that most or all of their friends smoke marijuana.
- *Amphetamines* rank next in exposure: 31% of seniors reported some exposure to use in the prior year and 34% said they have friends who use them.
- Among all seniors, 25% have been around someone using *cocaine* to get high over the past year, and more than one quarter (27%) said they have friends who use it.
- For the remaining illicit drugs, any exposure to use in the past year ranges from 26% for *hallucinogens other than LSD* down to 8.3% for *heroin*.
- Half of the seniors (51%) reported no exposure to *any of the illicit drugs other than marijuana* during the prior year, and about a quarter (24%) reported no exposure to *any illicit drug* (including marijuana) during the prior year. Thus, exposure to *marijuana* use is widespread (at 74%), and exposure to the use of *drugs other than marijuana* occurred for about half (49%).
- Nearly a quarter (23%) of seniors reported that most or all of their friends smoke *cigarettes*, and the great majority (85%) have at least *some* friends who smoke.

### Friends' Use of Drugs: Eighth and Tenth Graders

While the questions about exposure to use were not included in the questionnaires for eighth and tenth graders, the questions regarding the proportion of their friends who use each drug were.

- As would be expected, for almost all of the various drugs, eighth- and tenth-grade students are less likely to have friends who use than are twelfth graders (see Table 9-3). For example, for *marijuana*, less than half (42%) of the eighth graders and more than two thirds (70%) of the tenth graders said they have friends who use it, compared to the 79% of twelfth graders who do.
- In contrast, among eighth graders 26% said they have some friends who use *inhalants* versus 19% of the tenth graders and 21% of the twelfth graders. This is consistent with our findings that current inhalant use is more prevalent at eighth grade than in tenth or twelfth grades.
- Exposure to *alcohol* use through friends is widespread. About two thirds (68%) of the eighth graders and 89% of the tenth graders reported having friends who use alcohol. In fact, one fifth (20%) of the eighth graders and nearly one half (46%) of the tenth graders said that most or all of their friends drink, and the proportions saying that most or all of their friends *get drunk* at least once a week is one in fourteen (7.4%) in eighth grade and one in five (19.9%) in tenth grade.
- Exposure to *cigarette smoking* by friends is also very high for these young people, with more than half (59%) of the eighth graders and about three quarters (77%) of the tenth graders saying they have at least some friends who smoke.
- A quarter of the eighth graders (25%) and 42% of the tenth graders have friends who use *smokeless tobacco*.
- In sum, American adolescents—even in middle school—have a high degree of exposure to illicit drug use among their peers, whether or not they use illicit drugs themselves. They also have very high exposure to smoking, drinking, and drunkenness among their peers.

### TRENDS IN EXPOSURE TO DRUG USE AND FRIENDS' USE OF DRUGS

The extent of American adolescents' exposure to licit and illicit drug use has not been a constant; important changes have occurred over the past quarter of a century. Table 9-2 presents long-term trends in reported exposure to the use of various drugs by twelfth graders and Tables 9-3 and 9-4 present trends in reported friends' use of the various drugs for all three grades.

#### Trends in Exposure to Drug Use by Friends and Others: Twelfth Graders

- Between 1976 and 1978, seniors' reports of exposure to *marijuana* use increased in about the same proportion as did actual self-reported monthly use. Both exposure to use



and actual use stabilized in 1979, and then both dropped steadily so that the proportion saying they were “often” around people using marijuana decreased by more than half between 1979 and 1992 (from 39% to 16%). After 1992, however, there were significant *increases* in such exposure, reaching 33% in 1997, paralleling the significant rise in self-reported use. By 2002 the proportion had declined some to 31%, and use has declined a bit, as well.

- The proportion of seniors exposed to *cocaine* users showed a consistent increase from 1976 to 1979, as self-reported use also rose. Between 1979 and 1984, there was little change in exposure to use, coinciding with a period of stability in self-reported use. Then, in 1985 and 1986 there was an increase in reported exposure to use; these were the peak years in self-reported use. From 1986 through 1993, seniors’ exposure to cocaine use dropped appreciably, with the proportion saying they had any friends who used cocaine falling from 46% in 1986 to 25% in 1993 (see Table 9-4). Self-reported annual prevalence fell by three quarters during this interval. Then self-reported cocaine use doubled between 1992 and 1999, and the proportion reporting that most or all of their friends use cocaine also nearly doubled (from 1.5% to 2.9%). Both have leveled since 1999.
- The proportion having any friends who used *amphetamines* rose from 41% to 51% between 1979 and 1982, paralleling a sharp increase in self-reported use over that period. The proportion saying they were around people using amphetamines “to get high or for kicks” also jumped substantially between 1980 and 1982 (by 9 percentage points).<sup>81</sup> It then fell continually, a full 26 percentage points, between 1982 and 1992 (to 25%) as self-reported use declined quite substantially. From 1992 to 1997, both self-reported use and exposure to use increased and have leveled since then.
- Although we did not ask students about their own use of *MDMA (ecstasy)* until 1996, we did ask about friends’ use beginning in 1990. This measure stayed fairly stable at 11% to 13% between 1990, when it was first measured, and 1993. There was a substantial increase between 1993 and 1997 in the proportion of seniors reporting having at least some friends who were using ecstasy (from 13% to 28%); in 1998, there was a slight decline (to 25%). In 1999 there was a small increase (to 27%) in the proportion reporting that they had friends who used ecstasy (not as big a change as might have been expected from the sharp increase in self-reported ecstasy use that year). But in 2000, reported use by friends jumped dramatically, to 37%, coincident with a sharp further increase in self-reported use. There was another significant increase in friends’ use in 2001 (to 42%), while self-reported annual use also increased, though not significantly. In 2002, there was a significant decrease in friends’ use (to 38%), as well as a decrease in self-reported use.

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<sup>81</sup>This finding was important, since it indicated that a substantial part of the increase observed in self-reported amphetamine use was due to influences other than simply an increase in the use of over-the-counter diet pills or stay-awake pills, which presumably are not used to get high. Obviously, more young people were using stimulants for recreational purposes. Of course, the question still remains of whether the active ingredients in those stimulants really were amphetamines.

- For all of the other illicit drugs (including *inhalants*, *nitrite inhalants*, *LSD*, *other hallucinogens*, *tranquilizers*, *barbiturates*, *PCP*, and *methaqualone*) the trends in exposure and/or trends in friends' use have generally closely paralleled the trends in self-reported use.
- The proportion saying that most or all of their friends smoke *cigarettes* dropped steadily and substantially between 1976 and 1981, from 37% to 22%. During this period self-reported use dropped markedly, and more seniors perceived their friends as disapproving of regular smoking. Between 1982 and 1992, both friends' use and self-reported use remained relatively stable; in fact, in 1992 the friends' use rate was close to the 1981 rate (21% and 22%, respectively). After 1992 there was a significant increase in the proportion who said most or all of their friends smoke cigarettes, up to 34% by 1997, and self-reported smoking also increased significantly during this same period. However, 1998 was a turnaround year for the twelfth graders: smoking rates started to drop, as did reported friends' use. Both have dropped substantially in the years since, and in 2002 only 23% said that most or all of their friends smoke.
- The proportion saying most or all of their friends *get drunk* at least once a week increased between 1976 and 1979, from 27% to 32%; during the same period the prevalence of self-reported *occasional heavy drinking* rose by about the same amount. There was little change in either measure for about five years. After 1983, self-reports by seniors of their own heavy drinking began to decline, but reported heavy drinking by friends showed a later, more modest decline. Self-reported heavy drinking fell from 41% to 28% between 1983 and 1993, while reports of most or all friends getting drunk at least once a week fell only from 31% to 28%. Both measures then rose slightly for a few years but were fairly stable through 1997. Senior's self-reported heavy drinking began a very gradual decline after 1998. Reported heavy drinking by friends increased slightly from 1999 to 2001 but then decreased sharply in 2002 (to 28%).

The most impressive fact here is that more than one quarter of all high school seniors (28% in 2002) said that most or all of their friends get drunk at least once a week; this is almost the same proportion that said they personally have been binge drinking in the past two weeks (29%). Only about one in five (22%) said that *none* of their friends get drunk that often.

### Implications for Validity of Self-Reported Usage Questions

We have noted a high degree of correspondence in the aggregate-level data presented in this report among seniors' self-reports of their *own* drug use, their reports concerning *friends'* use, and their own *exposure* to such use. Drug-to-drug comparisons in any given year across these three types of measures tend to be highly parallel, as are the changes from year to year.<sup>82</sup> We take this consistency as additional evidence of the validity of the self-report data (and of trends in the self-report data), since there should be less reason to distort answers on use by unidentified

<sup>82</sup>Those minor instances of noncorrespondence may well result from the larger sampling errors in our estimates of these environmental variables, which are measured on a sample size one fifth or one sixth the size of the self-reported usage measures. They may also result, of course, from a lag between a change in the reality and students' realization of that change.

friends (or general exposure to use) than to distort reporting one's own use. Figure 9-3 illustrates the high degree of cross-time correspondence between the proportion of seniors saying they personally used marijuana in the 30 days prior to the survey and those saying most or all of their friends use marijuana.

### **Trends in Friends' Use: Eighth and Tenth Graders**

Trend data for grades 8 and 10 on friends' use have been available since 1991 (see Table 9-3). In general, they also show trends that are highly consistent with the trends in self-reported use at those grade levels. These questions are included in all eighth- and tenth-grade questionnaire forms, providing large sample sizes.

- In 1992, eighth graders showed an increase in self-reported use of a number of drugs (including *marijuana*, *inhalants*, *cocaine powder*, and *crack*), as well as increases in the proportions of their friends using them. In 1993, these trends continued among eighth graders, who were then joined by tenth and twelfth graders. By 1997, the eighth graders began to show a decline in their use of a number of drugs (including *marijuana*, *inhalants*, and *heroin*), and decreases in the reported proportions of their friends using them began a year later.
- For *marijuana*, self-reported use increased very sharply in all grades between 1992 and 1996, a change also reflected in reported use by friends. The proportions saying that any of their friends smoke marijuana rose by 10 percentage points among eighth graders and by 11 percentage points among tenth graders in 1994 alone (see Table 9-3). Between 1994 and 1996, reported friends' use in both grades rose an additional 10 percentage points. For both eighth and tenth graders, friends' use declined between 1996 and 2000, as did self-reported use. In all three grades, the proportions saying that they have friends who use *inhalants* rose consistently from 1991 through 1996. Self-reported usage rates also rose from 1991 to 1995. In 1996, use of inhalants leveled or reversed in all three grades, as did reported friends' use in 1997. For eighth and tenth graders, friends' use decreased considerably in 2002 as self-reported use continued to decrease.
- For *alcohol*, self-reported use and friends' use have also moved in parallel since 1992. Self-reported drinking in the past 30 days was fairly stable among both eighth and tenth graders between 1993 and 1996, as was the proportion that said they have any friends who drink alcohol. Through 2001, both measures declined among eighth graders, while both leveled among tenth and twelfth graders. In 2002 both measures decreased significantly for eighth and tenth graders. Self-reported *drunkenness* increased slightly in both eighth and tenth grades between 1992 and 1996, as did the proportion saying they have any friends who get drunk weekly. Here, too, both measures have since declined some among eighth graders, while there is very little difference between 1997 and 2001 among tenth and twelfth graders. In 2002 both measures decreased significantly for tenth graders. Among twelfth graders, the percent saying most or all of their friends get drunk at least once a week also decreased significantly.
- The data from eighth and tenth graders show a steadily increasing proportion of friends smoking *cigarettes* between 1991 and 1996. Self-reported smoking rates rose

considerably during the same period. In 1997, both measures showed a slight reversal in both grades—a reversal that has continued into 2002. Some 78% of eighth graders in 1996 had any friends who smoked, but by 2002 that proportion had fallen to 59%, the lowest ever recorded.

## PERCEIVED AVAILABILITY OF DRUGS

One set of questions asks respondents how difficult they think it would be to obtain each of a number of different drugs if they wanted it. The answers range across five categories from “probably impossible” to “very easy.”<sup>83</sup> We use the term “perceived availability” in discussing the responses to these questions. We recognize that availability is multidimensional, and respondents may take into consideration a variety of factors, including knowing where to get access, the difficulty of getting to an access place and, for some respondents, even possibly the monetary cost. We suspect that for most respondents, the monetary price will not be considered, and thus our measure is likely to be somewhat less general than a concept of availability that includes price.

While no systematic effort has been undertaken to assess directly the validity of these measures, it must be said that they do have a rather high level of face validity, particularly if it is the subjective reality of “perceived availability” that is purported to be measured. It also seems quite reasonable to us to assume that, to some extent, perceived availability tracks actual availability.

### Perceived Availability

- There are substantial differences in the perceived availability of the various drugs. In general, the more widely used drugs are reported to be available by higher proportions of the age group, as would be expected (see Tables 9-5 and 9-6). Also as would be expected, drugs are generally perceived to be more available by older age groups. Both associations are consistent with the notion that availability is largely attained through friendship circles. The higher the proportion of friendship circles that use a drug, the greater the proportion of students who have access to it.
- Because many *inhalants*—such as glues, butane, and aerosols—are universally available, we do not include a question about their availability.
- The availability of *cigarettes* is not asked of twelfth graders because we have assumed that they are almost universally available as well. However, eighth and tenth graders are asked about the availability of *cigarettes*, and even at these grade levels it is seen as extremely high. Some 64% of eighth graders and 83% of tenth graders thought that cigarettes would be “fairly easy” or “very easy” for them to get if they wanted some.

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<sup>83</sup>In the questionnaires used for eighth and tenth graders, an additional answer category of “can’t say, drug unfamiliar” is offered; respondents who chose this answer are included in the calculation of percentages. Generally, fewer than 20% of the respondents selected this answer.

## Monitoring the Future

- The great majority of these teens also see *alcohol* as readily available: 68% of the eighth graders, 85% of the tenth graders, and 95% of the twelfth graders said they could get it fairly easily or very easily.
- In contrast, far fewer younger students see that illicit drugs are as accessible. Even so, *marijuana* was described as “fairly easy” or “very easy” to get by almost half (47%) of the eighth graders, followed by *amphetamines* and *crack* (both 24%), *MDMA* and *cocaine powder* (both 23%), *steroids* (22%), *barbiturates* (19%), *tranquilizers* (17%), *heroin* (16%), and *LSD* (15%).
- When we compare eighth, tenth, and twelfth graders, we find that perceived availability rises sharply with grade level. For example, in 2002, 47% of eighth graders said *marijuana* would be “fairly easy” or “very easy” to get, versus 76% of tenth graders and 87% of twelfth graders. In fact, for the other drugs included in the questions, the proportion of students saying they are available to them is about twice as high among twelfth graders as among eighth graders. These differences are probably attributable to the overall differences in prevalence of use rates across these grade levels. Children in lower grades are considerably less likely to have friends who use these drugs and, thus, are less likely to have access through those friends. The differences between age groups may also reflect less willingness and/or less motivation on the part of those who deal drugs to establish contact with younger children.
- *Marijuana* appears to be available to almost all high school seniors; some 87% reported that they think it would be “very easy” or “fairly easy” for them to get it—almost twice the number who reported ever having used it (48%).
- After marijuana, twelfth-grade students indicated that *ecstasy* is among the easiest drug to obtain (59%).
- *Amphetamines* are also one of the most available drugs at 57%.
- Between 40% and 50% of the seniors perceived *hallucinogens other than LSD* (48%), *steroids* (46%), *cocaine* (45%), *narcotics other than heroin* (44%), and *cocaine powder* and *LSD* (both at 40%) as readily available.
- *Crack*, *barbiturates*, *tranquilizers*, *heroin*, *crystal methamphetamine (ice)*, and *PCP* were reported as available by substantial minorities of seniors (39%, 37%, 33%, 29%, 28%, and 26%, respectively). See Table 9-6 for the full list of drugs included in the questions for twelfth graders; a few of these were not asked of the younger students.
- Even drugs with lower usage rates, such as the *nitrite inhalants*, are seen as available by nearly one quarter of the seniors (22%).

- Of the twelfth graders who had used each drug in the past year, we have found that on average 70% or more say that it currently would be “fairly easy” or “very easy” for them to get the same drug.

### Trends in Perceived Availability for Twelfth Graders

Trend data on availability for seniors are presented in Table 9-6 and Figures 9-5a through 9-5c. A glance at those three figures will show that there have been some substantial fluctuations in the perceived availability of most drugs over the 28 years covered by the study.

- **Marijuana** has been the most consistently available illicit drug, but even it showed some small variations over the years. For the first time since the study began in 1975, marijuana showed a small but statistically significant decline in perceived availability between 1982 and 1984 (down 4 percentage points to 85%), undoubtedly due to the reduced proportion of seniors who had friends using it. There was no further change for the next four years, followed by a slight decline between 1988 and 1992. Between 1992 and 1998 there was a fair increase in availability (to 90%), corresponding to a sharp increase in the proportion of friends using it. Since 1999 availability has been steady at 89%. In 2002 availability dropped a little to 87%. What is most noteworthy, however, is how little change there has been over the years in perceived availability, as measured by how many seniors say that marijuana is “fairly” or “very” easy to get. By this measure, marijuana has been almost universally available to American high school seniors (from 83% to 90%) over at least the past 27 years.
- The perceived availability of **amphetamines** jumped 13 percentage points between 1977 and 1982 (to 71%), but it then dropped back gradually by 14 percentage points between 1982 and 1991 (to 57%). Then, between 1991 and 1995, perceived availability increased steadily, reaching 63% in 1995, followed by a significant decrease to 59% in 1996, after which it began to drift up a bit before falling some in 1999. Perceived availability of amphetamines has been fairly level, at 57% since 2000.
- The perceived availability of **barbiturates** (see Figure 9-5b) fell from 1975 to 1980 by 11 percentage points but then jumped 6 percentage points from 1980 to 1981, when “look-alikes” were common. From 1982 to 1991 a long gradual decline of 13 points occurred, parallel to a long-term drop in the number of barbiturate users. Perceived availability rose slightly, along with use, in the early 1990s; but then fell back again between 1993 and 2001, even though use continued to increase slightly through 2002.
- Between 1977 and 1980—a period of increased overall **cocaine** use—there was a substantial increase (15 percentage points) in the perceived availability of cocaine (see Table 9-6 and Figure 9-5a). Perceived availability then leveled and even dropped some in 1983, before rising sharply and steadily through 1989. After 1986, reported availability continued to rise as actual use of cocaine dropped sharply through 1993. Because there was an increase, and not a drop, in perceived availability between 1986 and 1989, we are inclined to discount reduction in supply as an explanation for the significant and important decline in use observed during that period.

Between 1989 and 1994, there was a significant decrease of 12 percentage points in perceived availability—perhaps reflecting the impact of the greatly reduced proportion of seniors who had friends using cocaine. (The percentage reporting having friends who use it dropped by 11 points during that interval.) From 1994 to 1998, the perceived availability of cocaine increased slightly, as did its use among seniors. While use continued to rise in 1999, reported availability showed a significant decline; both use and availability have declined some since 1999.

- We have asked students about the perceived availability of **crack** only since 1987; it has fluctuated between 39% and 47%, with no clear trend (see Figure 9-5a). However, availability reached its lowest level recorded so far in 2002 (39%), suggesting that a decline may be beginning.
- The use of **tranquilizers** declined fairly steadily over the 15-year interval between 1977 and 1992, and perceived availability also declined fairly steadily and quite substantially during that interval. In fact, the proportion of seniors who thought they could get tranquilizers “fairly easily” has fallen by more than half—from 72% in 1975 to 33% in 2001 and 2002. Tranquilizer *use* among twelfth graders had been slowly rising through most of the 1990s and continued to do so through 2002. This is another example where availability (which was declining) could not explain the trends in use (which were rising).
- The perceived availability of **LSD** fell sharply in the first several years covered by the study (1975-1978), perhaps reflecting the end of a longer-term steep decline (see Figure 9-5c). Perceived availability then leveled for awhile, before dropping further in the first half of the 1980s. Between 1986 and 1995, there followed a substantial increase in the perceived availability of LSD, which rose from 29% to 54% (the highest level it reached in over two decades). Since 1995, there has been some considerable falloff in perceived availability (to 40% in 2002).
- The perceived availability of **hallucinogens other than LSD** followed a very similar trajectory to that of LSD from 1975 through 1986 (see Figure 9-5c) but quite a different one thereafter. From 1987 to 1995 there was a gradual rise in availability of hallucinogens other than LSD, in contrast to the sharp rise for LSD. From 1995 to 2000, the availability of LSD showed a general decline (from 54% to 47%), while the availability of other hallucinogens changed very little (from 36% to 35%). While LSD and the other hallucinogens, taken as a set, were about equally available in the late 1970s, LSD availability was substantially higher in the 1990s. The availability of LSD declined again in 2001 (to 45%). The availability of other hallucinogens showed an apparent sharp increase in 2001, but much of the apparent increase is likely due to a question change. In 2001, the question text changed from “other psychedelics” to “other hallucinogens,” and “shrooms” was added to the list of examples. (After this change, this class of drugs is actually reported to be slightly more available than LSD.) In 2002 availability declined some from the 2001 level.
- The availability of **ecstasy (MDMA)** has risen quite dramatically during the 1990s (see Figure 9-5a). From 1989, when availability was first measured for this drug, through

1991, only 22% of twelfth graders reported easy access. Availability then rose steadily to 39% by 1997, where it remained for a couple of years. However, in 2000 it jumped dramatically to 51%. Availability of ecstasy again increased to 62% in 2001—nearly three times the 1991 level. It appears quite likely that this dramatic increase in the availability of ecstasy played an important role in the sharp increase in use after 1998. In 2002 availability of ecstasy dropped some for the first time in a long time, as did use.

- Between 1979 and 1987, self-reported use of *PCP* dropped substantially, before stabilizing at a very low level for some years. However, perceived availability rose from 23% in 1987 (when it was first measured) to 32% in 1992 and changed very little through 2002. (Self-reported use increased slightly from 1993 to 1996, leveled for several years, and has decreased some since 2000.)
- From 1975 through 1978, perceived *heroin* availability (see Figure 9-5b) declined some. Then a rather long, irregular, and gradual increase in perceived availability began and continued over 14 years, through 1992. (The 1978-1992 rise was from 16% to 35% of the seniors saying heroin would be “fairly easy” or “very easy” to get.) Despite this substantial increase in perceived availability, there was very little change in use during that period. From 1992 to 1999, perceived availability was fairly level, although use increased in that interval. Availability has declined since then and use declined after 2000 and then leveled.
- The stability of *heroin* use during the 1980s and early 1990s, despite a substantial increase in availability, is worthy of note. It suggests that availability alone is not sufficient to stimulate trial (though it may affect the consumption pattern of established users). It was not until the 1990s that word about methods for taking heroin other than by injection started to be widely diffused. The view that these methods were less dangerous than injection removed an important deterrent for at least some teenagers, we believe. Reports that the Taliban eradicated nearly all opium crops in Afghanistan in 2001 raised the possibility that there would be a significant decline in the availability of heroin in the ensuing years, because Afghanistan and Burma (Myanmar) are the two largest suppliers of heroin to the world market. The subsequent demise of the Taliban and a resurgence of opium cultivation in Afghanistan has made the situation much less certain.
- Much like heroin, *other narcotics* showed a gradual, upward shift in perceived availability, from 26% in 1978 to 38% in 1989, followed by some decline in 1991, and followed thereafter by a second period of increase from 1991 through 2000 (44%). It then fell back to 1999 levels (41%) in 2001 before returning to the 2000 level (44%) in 2002.
- Figure 9-5b shows that *heroin* and *other narcotics* have become much more accessible to young people since 1975, while *barbiturates* and *tranquilizers* have become much less so.

### Trends in Perceived Availability for Eighth and Tenth Graders

- Because information on the perceived availability of drugs was first gathered from eighth and tenth graders in 1992, we can characterize change only since then. From 1992 to



1996, eighth and tenth graders showed a rise in the availability of several illicit drugs. These data are not presented graphically but are provided in Table 9-5. Availability leveled or dropped in 1997 and since then has declined further for most of these drugs. These changes track changes in self-reported use rather well.

- **Ecstasy** use rose between 1997 and 2001; availability undoubtedly also rose, but it was not measured until 2001, so we cannot say by how much. In 2002, both use and availability declined some.
- The proportion of eighth graders seeing **marijuana** as easy to get rose sharply between 1992 and 1996, from 42% to 55%, while among tenth graders there was an even greater increase (from 65% to 81%) over the same interval. Since 1996, availability has shown declines in both grades. Among twelfth graders, availability did not tilt down until 1999.
- Between 1992 or 1993 and 1995 or 1996, the availability of several other illicit drugs (**LSD**, **PCP**, **crack**, **powdered cocaine**, **heroin**, **other narcotics**, and **amphetamines**) rose modestly among eighth and tenth graders as their use increased. (Use is not measured for PCP and other narcotics.) Both grades then showed some decline in the availability of these drugs through 1998 and most have continued to decline since. In fact, **LSD** showed a sharp decline in 2002, specifically.
- **Barbiturates** and **tranquilizers** did not show any increase in availability in the early 1990s in eighth or tenth grade, but both drugs did show a decline in availability after 1995 (or 1996, in the case of tenth graders). The decline in barbiturate and tranquilizer availability continued until about 2000 for eighth and tenth graders and then leveled.
- **Ice** is the drug that generally has been least available to eighth and tenth graders. For the eighth graders, availability was level from 1992 to 1998 but has been declining gradually since. For tenth graders, availability, which increased a bit from 1992 to 1997, has remained fairly level since. (Use of ice is not assessed among eighth and tenth graders.)
- After holding fairly steady (at very high levels) for some years, the availability of **cigarettes** to eighth and tenth graders began to decline modestly after 1996, very likely as a result of increased enforcement of laws prohibiting sales to minors under the Synar Amendment and the FDA regulations dealing with sales to minors. Those declines have continued and have been the greatest at eighth grade, where the proportion saying that they could get cigarettes fairly easily if they want them fell from 77% in 1996 to 64% in 2002. Over the same interval the decline among tenth graders was from 91% to 83%. Both grades showed their steepest decline in 2002.
- **Alcohol** has shown some rather modest declines in availability, which is down from 76% in 1992 among eighth graders to 68% in 2002. However, at tenth grade it is down only slightly, from the peak level of 90% in 1996 to 85% in 2002. Again, both grades showed their largest decline in 2002.

### The Importance of Supply Reduction Versus Demand Reduction

- Overall, it is important to note that *supply reduction*—that is, reduced availability of drugs—does not appear to have played as major a role as many had assumed in perhaps the two most important downturns in illicit drug use that have occurred to date, namely, those for *marijuana* and *cocaine* (see Figures 8-4 and 8-5). In the case of cocaine, perceived availability actually rose during much of the period of the downturn in use. (These data are corroborated by data from the Drug Enforcement Administration on trends in the price and purity of cocaine on the streets.<sup>84</sup>) In the case of marijuana, perceived availability has remained very high for twelfth graders over the last 27 years, while use dropped substantially from 1979 through 1992. Similarly, *amphetamine* use declined appreciably from 1981 to 1992, with only a modest corresponding change in perceived availability. Finally, until 1995, *heroin* use had not risen among seniors even though availability had increased substantially.
- What *did* change dramatically were young peoples' beliefs about the dangers of using *marijuana* and *cocaine*. As we have been saying for some years, we believe these changes led to a decrease in use directly through their impact on young peoples' demand for these drugs and indirectly through their impact on personal disapproval and, subsequently, peer norms. Because the perceived risk of *amphetamine* use was changing little when amphetamine use was declining substantially (1981-1986), other factors must have helped to account for the decline in demand for that class of drugs—quite conceivably some displacement by cocaine. Because the three classes of drugs (marijuana, cocaine, and amphetamines) have shown *different* patterns of change, it is highly unlikely that a general factor (e.g., a general shift against drug use) can explain their various trends.
- The increase in *marijuana* use in the 1990s among twelfth graders adds more compelling evidence to this interpretation. It was *both* preceded and accompanied by a decrease in perceived risk. (Between 1991 and 1997 there was a 21-percentage-point decline in the perceived risk of regular marijuana use.) Peer disapproval dropped sharply from 1993 through 1997, *after* perceived risk began to change, consistent with our interpretation that perceived risk can be an important determinant of disapproval. Perceived availability remained fairly constant from 1991 to 1993 and then increased 7 percentage points through 1998.
- To give availability its due, we do think that the expansion in the world supply of *heroin*, particularly in the 1990s, had the effect of dramatically raising the purity of heroin available on the streets and thus the means available for ingesting it. The advent of non-injectable forms of heroin very likely contributed to the fairly sharp increase in heroin use in the 1990s. The evidence from this study showing that a significant portion of the self-reported heroin users in recent years are using heroin by non-injectable means lends credibility to this interpretation.

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<sup>84</sup>Caulkins, J. P. (1994). *Developing price series for cocaine*. Santa Monica, CA: RAND.

- We should also note that our emphasis on attitudes and beliefs does not mean that other factors, particularly price, cannot play an important role. Analyses of data from the Monitoring the Future project have shown that price probably played an important role in the decline in marijuana use in the 1980s and in changes in cigarette use in the 1990s.<sup>85, 86</sup>

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<sup>85</sup>Pacula, R. L., Grossman, M., Chaloupka, F. J., O'Malley, P. M., Johnston, L. D., & Farrelly, M. C. (2001). Marijuana and youth. In J. Gruber (Ed.) *Risky behavior among youths: An economic analysis* (pp. 271-326). The University of Chicago Press. Also appears as Working Paper 7703, National Bureau of Economic Research, Inc. (2000).

<sup>86</sup>Tauras, J. A., O'Malley, P. M., & Johnston, L. D. (2001). *Effects of price and access laws on teenage smoking initiation: A national longitudinal analysis*. (ImpactTeen/Youth, Education, and Society Research Paper No. 2.) Chicago, IL: University of Illinois at Chicago and Ann Arbor, MI: The University of Michigan, Institute for Social Research.

**TABLE 9-1**  
**Trends in Proportion of Friends Disapproving of Drug Use**  
**Twelfth Graders**

Q. How do you think your close friends feel (or would feel) about you . . .	Percentage saying friends disapprove <sup>a</sup>																								'01-'02 change																											
	Class of:																																																			
	1975 <sup>b</sup>	1976	1977 <sup>b</sup>	1978	1979 <sup>b</sup>	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002																								
Trying marijuana once or twice	44.3	—	41.8	—	40.9	42.6	46.4	50.3	52.0	54.1	54.7	56.7	58.0	62.9	63.7	70.3	69.7	73.1	66.6	62.7	58.1	55.8	53.0	53.8	55.1	58.1	57.6	54.1	-3.5																							
Smoking marijuana occasionally	54.8	—	49.0	—	48.2	50.6	55.9	57.4	59.9	62.9	64.2	64.4	67.0	72.1	71.1	76.4	75.8	79.2	73.8	69.1	65.4	63.1	59.9	60.4	61.6	63.9	64.3	60.3	-4.0s																							
Smoking marijuana regularly	75.0	—	69.1	—	70.2	72.0	75.0	74.7	77.6	79.2	81.0	82.3	82.9	85.5	84.9	86.7	85.9	88.0	83.5	80.6	78.9	76.1	74.1	74.7	74.5	76.1	77.8	75.3	-2.5																							
Trying LSD once or twice	85.6	—	86.6	—	87.6	87.4	86.5	87.8	87.8	87.6	88.6	89.0	87.9	89.5	88.4	87.9	87.9	87.3	83.5	83.4	82.6	80.8	79.3	81.7	83.2	84.7	85.5	84.9	-0.6																							
Trying cocaine once or twice	—	—	—	—	—	—	—	—	—	—	—	79.6	83.9	88.1	88.9	90.5	91.8	92.2	91.1	91.4	91.1	89.2	87.3	88.8	88.7	90.2	89.3	89.1	-0.2																							
Taking cocaine occasionally	—	—	—	—	—	—	—	—	—	—	—	87.3	89.7	92.1	92.1	94.2	94.7	94.4	93.7	93.9	93.8	92.5	90.8	92.2	91.8	92.8	92.2	92.2	0.0																							
Trying crack once or twice	—	—	—	—	—	—	—	—	—	—	—	—	—	—	94.2	95.0	94.4	94.6	95.1	93.9	93.8	93.0	92.3	93.7	93.9	94.6	92.3	93.1	+0.8																							
Taking crack occasionally	—	—	—	—	—	—	—	—	—	—	—	—	—	—	95.7	96.5	95.7	95.9	96.4	95.3	96.1	94.7	94.8	96.2	96.0	96.9	95.0	94.7	-0.3																							
Trying cocaine powder once or twice	—	—	—	—	—	—	—	—	—	—	—	—	—	—	91.7	93.4	93.3	94.0	94.2	93.2	93.5	92.1	91.4	91.9	91.8	93.3	91.9	92.3	+0.4																							
Taking cocaine powder occasionally	—	—	—	—	—	—	—	—	—	—	—	—	—	—	94.0	95.0	94.8	94.8	95.2	94.7	95.3	93.6	93.9	94.5	94.0	96.3	93.7	93.8	+0.1																							
Trying an amphetamine once or twice	78.8	—	80.3	—	81.0	78.9	74.4	75.7	76.8	77.0	77.0	79.4	80.0	82.3	84.1	84.2	85.3	85.7	83.2	84.5	81.9	80.6	80.4	82.6	83.0	84.1	83.8	83.3	-0.5																							
Taking one or two drinks nearly every day	67.2	—	71.0	—	71.0	70.5	69.5	71.9	71.7	73.6	75.4	75.9	71.8	74.9	76.4	79.0	76.6	77.9	76.8	75.8	72.6	72.9	71.5	72.3	71.7	71.6	73.4	71.6	-1.8																							
Taking four or five drinks nearly every day	89.2	—	88.1	—	88.5	87.9	86.4	86.6	86.0	86.1	88.2	87.4	85.6	87.1	87.2	88.2	86.4	87.4	87.2	85.2	84.1	82.6	82.5	82.8	82.2	82.8	84.4	80.1	-4.4ss																							
Having five or more drinks once or twice each weekend	55.0	—	53.4	—	51.3	50.6	50.3	51.2	50.6	51.3	55.9	54.9	52.4	54.0	56.4	59.0	58.1	60.8	58.5	59.1	58.0	57.8	56.4	55.5	57.6	57.7	57.8	55.6	-2.2																							
Smoking one or more packs of cigarettes per day	63.6	—	68.3	—	73.4	74.4	73.8	70.3	72.2	73.9	73.7	76.2	74.2	76.4	74.4	75.3	74.0	76.2	71.8	72.4	69.2	69.3	68.5	69.0	71.2	72.6	74.5	75.7	+1.2																							
	Approx. N = 2488		— 2615		— 2716		2766		3120		3024		2722		2721		2688		2639		2815		2778		2400		2184		2160		2229		2220		2149		2177		2030		2095		2037		1945		1775		1862		1820	

NOTES: Level of significance of difference between the two most recent classes:  $s = .05$ ,  $ss = .01$ ,  $sss = .001$ . '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Answer alternatives were: (1) Don't disapprove, (2) Disapprove, and (3) Strongly disapprove. Percentages are shown for categories (2) and (3) combined.

<sup>b</sup>These numbers have been adjusted to correct for a lack of comparability of question context among administrations. (See text for discussion.)

**TABLE 9-2**  
**Trends in Twelfth Graders' Exposure to Drug Use**

(Entries are percentages)

Q. During the LAST 12 MONTHS how often have you been around people who were taking each of the following to get high or for "kicks"?	Class of:																							'01-'02 change					
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997		1998	1999	2000	2001	2002
Any illicit drug <sup>a</sup>	—	17.4	16.5	15.1	15.0	15.7	17.3	18.6	20.6	22.1	22.3	24.5	26.1	28.7	31.4	32.4	35.8	38.7	33.9	29.2	24.7	22.0	21.2	22.8	22.1	24.0	23.5	23.5	0.0
% saying not at all	—	34.8	39.0	40.7	40.4	36.3	36.1	31.4	29.8	28.3	27.2	26.3	23.3	20.8	22.0	20.7	18.2	18.0	24.0	29.3	32.3	33.8	34.7	33.2	35.6	32.6	33.6	32.6	-1.0
Any illicit drug <sup>a</sup> except marijuana	—	44.9	44.2	44.7	41.7	41.5	37.4	37.5	40.6	40.2	40.7	44.7	48.3	52.2	52.9	54.6	60.0	58.4	57.4	54.7	52.8	50.3	52.1	52.7	53.5	52.8	50.1	50.7	+0.6
% saying not at all	—	11.8	13.5	12.1	13.7	14.1	17.1	16.6	14.2	14.6	12.9	12.1	10.2	9.6	10.7	9.2	7.9	7.5	9.6	9.4	11.1	12.1	11.7	9.9	11.7	10.5	11.9	12.6	+0.7
Marijuana	—	20.5	19.0	17.3	17.0	18.0	19.8	22.1	23.8	25.6	26.5	28.0	29.6	33.0	35.2	36.6	40.4	43.2	39.0	32.8	27.3	24.4	23.2	24.5	24.2	26.2	25.1	25.8	+0.7
% saying not at all	—	32.5	37.0	39.0	38.9	33.8	33.1	28.0	26.1	24.8	24.2	24.0	20.6	17.9	19.5	17.8	16.0	15.6	20.9	27.6	30.7	31.8	32.9	31.4	34.4	30.3	30.8	30.7	-0.1
LSD	—	78.8	80.0	81.9	81.9	82.8	82.6	83.9	86.2	87.5	86.8	86.9	87.1	86.6	85.0	85.1	84.3	82.2	79.0	75.8	73.9	72.4	74.1	76.9	76.4	78.0	78.4	82.8	+4.4 <sub>ss</sub>
% saying not at all	—	2.2	2.0	1.8	2.0	1.4	2.0	1.9	1.4	1.5	1.3	1.6	1.8	1.6	2.2	2.6	2.9	3.0	3.9	4.2	6.1	4.7	5.1	3.2	4.1	3.3	2.8	2.6	-0.3
Other psychedelics <sup>b</sup>	—	76.5	76.7	76.7	77.6	79.6	82.4	83.2	86.9	87.3	87.5	88.2	90.0	91.0	91.2	90.6	90.6	90.3	87.9	86.0	84.2	83.4	82.2	84.1	82.3	83.7	†71.9	73.6	+1.7
% saying not at all	—	3.1	3.2	2.9	2.2	2.2	2.0	2.6	1.1	1.7	1.4	1.5	1.2	1.1	1.3	1.2	1.3	1.1	1.9	2.3	2.5	2.7	2.8	1.7	2.7	2.1	†3.6	4.5	+0.9
Cocaine	—	77.0	73.4	69.8	64.0	62.3	63.7	65.1	66.7	64.4	61.7	62.6	65.1	69.8	69.8	72.3	78.7	80.2	80.8	81.2	78.4	75.0	74.4	73.4	74.2	75.8	75.5	75.1	-0.4
% saying not at all	—	3.0	3.7	4.6	6.8	5.9	6.6	6.6	5.2	6.7	7.1	7.8	5.9	5.1	5.4	4.7	3.4	2.7	2.9	2.5	3.2	4.0	4.2	3.7	4.6	4.6	4.5	5.3	+0.8
Heroin	—	91.4	90.3	91.8	92.4	92.6	93.4	92.9	94.9	94.0	94.5	94.0	94.2	94.3	93.5	94.6	94.9	94.6	94.3	92.7	92.1	91.4	90.9	91.3	91.9	90.9	91.3	91.7	+0.3
% saying not at all	—	0.8	1.1	0.9	0.7	0.4	0.6	1.0	0.7	1.1	0.5	1.0	0.9	0.8	1.0	0.5	0.9	0.7	1.1	0.7	1.2	1.6	1.2	0.9	1.3	1.5	0.7	1.3	+0.7
Other narcotics	—	81.9	81.3	81.8	82.0	80.4	82.5	81.5	82.7	82.0	81.6	84.4	85.6	85.2	86.2	85.8	88.7	88.9	87.6	85.1	84.5	81.5	79.6	79.3	78.1	78.9	78.4	77.5	-1.0
% saying not at all	—	1.8	2.4	2.0	1.7	1.7	2.4	2.2	2.0	1.8	2.1	1.7	1.7	1.7	1.7	1.6	1.4	1.3	1.7	1.7	2.1	3.4	2.5	2.8	3.9	2.9	3.0	3.8	+0.8
Amphetamines	—	59.6	60.3	60.9	58.1	59.2	50.5	49.8	53.9	55.0	59.0	63.5	68.3	72.1	72.6	71.7	76.4	75.5	75.3	71.8	71.9	68.5	69.0	70.1	69.9	70.5	68.5	69.4	+0.8
% saying not at all	—	6.8	7.9	6.7	7.4	8.3	12.1	12.3	10.1	9.0	6.5	5.8	4.5	4.1	4.7	4.1	3.1	3.0	3.9	4.1	4.5	5.6	5.2	4.7	6.3	4.4	6.0	6.4	+0.4
Barbiturates	—	69.0	70.0	73.5	73.6	74.8	74.1	74.3	77.5	78.8	81.1	84.2	86.9	87.6	88.2	86.7	90.0	89.8	88.1	87.0	85.5	84.5	83.9	83.9	82.9	83.7	82.9	82.3	-0.6
% saying not at all	—	4.5	5.0	3.4	3.3	3.4	4.0	4.3	3.0	2.7	1.7	2.1	1.5	1.4	1.7	1.7	1.2	1.1	1.6	1.7	2.0	2.9	2.5	2.7	3.8	2.7	2.7	4.6	+1.9 <sub>ss</sub>
Tranquilizers <sup>b</sup>	—	67.7	66.0	67.5	67.5	70.9	71.0	73.4	76.5	76.9	76.6	80.4	81.6	81.8	84.9	83.7	85.8	87.3	86.2	83.5	84.3	82.1	81.1	82.7	81.8	82.3	†76.2	77.3	+1.2
% saying not at all	—	5.5	6.3	4.9	4.3	3.2	4.2	3.5	2.9	2.9	2.2	2.5	2.6	2.2	2.1	1.9	1.4	1.9	1.7	1.8	2.3	3.5	3.2	2.8	3.7	3.5	†4.9	5.8	+0.9
Alcoholic beverages	—	6.0	5.6	5.5	5.2	5.3	6.0	6.0	6.0	6.0	6.0	5.9	6.1	6.9	7.7	6.4	8.3	9.4	8.2	10.0	8.8	8.5	8.6	7.8	8.2	9.3	9.2	10.5	+1.4
% saying not at all	—	57.1	60.8	60.8	61.2	60.2	61.0	59.3	60.2	58.7	59.5	58.0	58.7	56.4	55.5	56.1	54.5	53.1	51.9	54.0	54.0	54.5	53.9	54.5	53.5	50.2	52.7	50.8	-2.0
Approx. N =	—	2950	3075	3682	3253	3259	3608	3645	3334	3238	3252	3078	3296	3300	2795	2556	2525	2630	2730	2581	2608	2407	2595	2541	2312	2153	2147	2162	

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available.

† indicates some change in the question.

Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>These estimates were derived from responses to the questions listed. "Any illicit drug" includes all drugs listed except alcohol.

<sup>b</sup>In 2001 the question text was changed from "other psychedelics" to "other hallucinogens" and "shrooms" was added to the list of examples. For tranquilizers, Xanax was added to the list of examples. These changes likely explain the discontinuity in the 2001 results.

**TABLE 9-3**

**Trends in Friends' Use of Drugs as Estimated by Eighth and Tenth Graders, 1991-2001**

(Entries are percentages)

Q. How many of your friends would you estimate . . .	<u>8th Grade</u>												<u>10th Grade</u>													
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	'01-'02 change	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	'01-'02 change
Smoke marijuana																										
% saying any	21.9	25.1	30.8	41.1	46.1	50.8	50.8	46.7	44.4	42.6	46.1	42.3	-3.8s	48.3	45.9	52.7	63.4	68.5	73.5	73.4	70.4	70.5	70.6	72.8	69.6	-3.2
% saying most or all	3.3	4.1	6.0	10.5	12.7	15.2	13.8	12.6	12.1	10.4	11.4	10.0	-1.4	7.9	8.0	11.2	18.0	21.3	26.4	25.0	23.5	23.3	22.4	23.8	23.3	-0.5
Use inhalants																										
% saying any	20.5	23.1	26.3	29.2	32.1	32.3	32.9	31.9	31.0	29.0	29.3	25.7	-3.6s	17.3	17.8	21.1	23.6	25.3	25.7	23.7	22.8	21.4	20.6	21.4	19.3	-2.1
% saying most or all	2.4	2.9	3.7	4.2	5.0	5.2	4.8	4.5	4.7	4.0	3.9	3.4	-0.5	1.4	1.5	1.8	2.0	2.1	2.2	2.2	2.5	2.1	2.2	1.8	2.1	+0.3
Take crack																										
% saying any	8.6	10.9	12.5	15.2	17.7	18.5	19.3	19.2	18.5	18.1	18.9	17.4	-1.5	13.2	13.2	15.1	17.3	19.8	21.4	22.0	22.2	21.2	21.1	21.4	21.0	-0.4
% saying most or all	0.9	1.0	1.3	1.6	1.6	2.0	1.8	1.9	1.9	1.6	2.0	1.6	-0.4	0.8	0.7	0.9	1.0	1.2	1.2	1.5	1.7	1.6	1.5	1.5	1.8	+0.3
Take cocaine powder																										
% saying any	8.4	10.7	12.1	14.3	16.2	17.4	17.6	17.1	16.7	16.1	16.3	14.8	-1.5	14.7	14.1	15.4	17.3	19.7	21.7	22.5	23.0	21.0	21.2	20.9	20.5	-0.4
% saying most or all	0.9	1.1	1.3	1.7	1.6	1.7	1.6	2.0	1.8	1.6	1.8	1.7	-0.2	0.8	0.8	0.8	1.1	1.3	1.4	1.7	2.0	1.9	1.7	1.5	2.0	+0.5
Take heroin																										
% saying any	6.1	7.3	8.9	10.3	11.6	12.0	12.2	11.8	11.4	10.9	11.2	10.5	-0.7	7.8	8.1	9.3	10.5	11.1	11.7	11.8	11.5	10.7	10.1	11.4	10.3	-1.1
% saying most or all	0.7	0.9	0.9	1.3	1.3	1.4	1.2	1.3	1.3	1.1	1.4	1.3	-0.1	0.6	0.6	0.7	0.6	0.8	0.7	0.9	1.0	1.0	0.8	0.9	1.2	+0.3
Drink alcoholic beverages																										
% saying any	72.1	76.4	75.7	77.0	75.9	77.1	75.8	74.6	73.4	72.7	72.3	68.1	-4.2s	92.9	91.3	91.8	92.8	92.2	92.4	92.2	91.4	91.4	92.0	91.3	89.4	-1.9ss
% saying most or all	21.0	23.7	25.5	27.4	27.5	28.8	25.9	25.0	24.9	23.6	22.7	20.1	-2.6	49.6	48.2	49.9	50.3	50.7	53.4	50.7	50.1	50.3	52.0	50.2	45.7	-4.5ss
Get drunk at least once a week																										
% saying any	42.8	48.0	48.0	50.3	48.7	51.2	48.3	47.6	48.7	46.6	45.5	42.3	-3.2	75.1	72.6	74.5	76.9	75.3	76.7	76.2	74.9	75.9	77.3	76.4	73.1	-3.3s
% saying most or all	7.2	8.4	9.0	10.6	9.9	10.9	9.3	8.8	9.6	9.1	8.6	7.4	-1.2	19.3	18.6	20.2	20.3	20.6	23.1	21.8	21.2	22.8	23.5	22.4	19.9	-2.5
Smoke cigarettes																										
% saying any	67.7	72.4	73.8	76.1	76.1	78.1	76.9	75.2	70.9	67.9	64.2	58.6	-5.6s	81.2	82.0	85.4	86.3	88.0	89.3	88.1	87.1	85.4	84.6	82.7	77.2	-5.5sss
% saying most or all	11.8	14.4	16.7	19.0	20.5	22.5	19.7	19.4	16.4	13.0	10.6	9.0	-1.7	18.2	18.7	22.8	24.7	27.8	32.8	29.3	27.8	25.9	21.2	19.3	15.8	-3.5ss
Use smokeless tobacco																										
% saying any	36.5	37.5	37.3	38.6	37.8	37.9	34.5	32.7	30.0	28.0	27.3	24.5	-2.8	53.1	53.1	57.5	58.4	57.9	55.0	52.0	47.5	44.8	42.3	45.5	41.8	-3.7
% saying most or all	3.8	4.2	3.8	4.8	4.7	5.1	3.5	3.5	3.5	2.6	2.9	2.5	-0.5	7.5	7.3	7.7	7.6	7.3	6.0	6.4	5.8	4.7	4.6	5.2	5.2	0.0
Approx. N (in thousands) =	16.0	16.6	16.5	15.8	15.3	16.1	16.1	16.0	10.1	10.0	9.7	9.2	14.3	14.0	14.6	15.0	16.1	14.8	14.7	14.4	8.7	9.1	9.0	9.1		

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available.  
 Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.  
 In 2000, this set of questions was removed from one of the four forms that had contained it, which resulted in a slight adjustment in the average change scores that year. To correct for this, although this set of questions was asked in all four forms in 1999, the data presented here for 1999 are from only the three forms in which the questions are still asked.

SOURCE: The Monitoring the Future Study, the University of Michigan.

**TABLE 9-4**  
**Long-Term Trends in Friends' Use of Drugs as Estimated by Twelfth Graders**

(Entries are percentages)

Q. How many of your friends would you estimate . . .	Class of:																							'01-'02 change					
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997		1998	1999	2000	2001	2002
Take any illicit drug <sup>a</sup>																													
% saying any	85.8	84.6	86.9	87.5	89.0	87.5	85.4	86.3	82.6	81.0	82.4	82.2	81.7	79.1	76.9	71.0	69.1	67.3	71.0	78.3	78.6	80.6	83.4	84.6	82.0	82.0	82.8	81.8	-1.0
% saying most or all	31.9	31.7	33.2	36.3	37.0	32.5	29.8	26.5	23.8	20.9	22.7	21.5	18.6	15.8	15.7	11.6	11.7	12.0	15.5	20.3	21.7	23.8	23.7	25.9	25.5	24.5	25.2	23.1	-2.1
Take any illicit drug <sup>a</sup> other than marijuana																													
% saying any	66.7	55.5	57.5	56.4	61.3	62.4	63.3	64.7	61.2	61.3	61.8	63.3	62.4	56.5	56.2	50.1	46.3	47.1	48.7	53.7	53.7	54.5	55.1	55.6	51.2	52.5	55.0	54.3	-0.8
% saying most or all	10.6	8.9	7.7	8.5	10.4	11.1	11.9	10.9	11.0	10.3	10.4	10.3	9.2	6.9	7.7	5.1	4.6	5.3	7.1	7.1	7.7	8.9	7.0	8.9	7.4	7.4	7.0	6.1	-0.9
Smoke marijuana																													
% saying any	83.0	82.9	85.9	86.1	87.6	86.4	83.0	84.4	80.3	77.7	79.5	79.2	78.4	75.3	72.5	68.3	65.8	63.1	67.4	75.6	76.1	78.0	81.4	83.2	80.7	80.5	81.2	79.4	-1.8
% saying most or all	30.3	30.6	32.3	35.3	35.5	31.3	27.7	23.8	21.7	18.3	19.8	18.2	15.8	13.6	13.4	10.1	10.0	10.3	13.9	18.9	20.7	22.2	22.5	23.8	24.2	23.2	24.0	21.4	-2.7
Use inhalants																													
% saying any	24.3	18.6	18.9	20.0	19.1	17.8	16.5	18.4	16.1	19.3	21.2	22.4	24.7	20.8	22.1	20.0	19.2	22.2	23.7	26.5	27.5	27.2	27.4	25.9	21.6	23.5	22.2	21.0	-1.3
% saying most or all	1.1	1.1	1.0	1.1	1.1	1.2	0.9	1.3	1.1	1.1	1.5	2.0	1.9	1.2	1.9	1.0	0.7	1.8	1.8	2.0	2.0	2.4	1.9	2.7	1.8	1.4	1.4	1.2	-0.2
Use nitrites																													
% saying any	—	—	—	—	21.6	19.0	17.4	17.5	14.5	15.0	15.6	18.0	18.3	13.6	13.3	10.4	8.9	9.0	10.7	10.0	10.7	11.2	11.9	12.9	10.9	11.0	11.9	11.2	-0.7
% saying most or all	—	—	—	—	1.9	1.3	1.2	0.9	0.7	1.2	1.0	1.2	1.3	0.7	0.9	0.6	0.4	0.7	0.7	0.8	0.8	0.8	0.7	1.0	0.7	1.0	0.6	0.8	+0.1
Take LSD																													
% saying any	36.5	30.6	31.9	29.9	28.9	28.1	28.5	27.8	24.0	23.9	24.4	24.5	25.3	24.1	25.2	25.0	23.4	28.1	31.3	34.1	36.9	37.9	36.5	36.8	32.2	31.9	32.2	28.6	-3.6
% saying most or all	2.7	2.8	3.0	2.0	1.9	1.8	2.2	2.4	1.4	2.0	1.5	1.8	1.6	1.5	2.4	1.9	1.7	2.4	3.8	4.2	4.8	5.0	3.7	4.7	3.9	3.1	2.9	1.7	-1.2s
Take other psychedelics/hallucinogens <sup>b</sup>																													
% saying any	41.2	30.3	31.4	29.2	28.2	28.2	26.3	25.6	22.1	21.3	22.0	22.3	21.7	17.8	18.1	15.9	15.1	17.0	19.3	21.4	23.8	26.4	26.3	27.4	22.5	24.0	35.4	33.6	-1.8
% saying most or all	4.7	3.0	2.8	2.0	2.2	2.2	2.1	1.9	1.6	1.9	1.4	1.3	1.2	0.9	1.4	1.0	0.8	1.0	1.7	2.2	2.2	2.3	2.6	3.1	2.4	2.4	2.9	2.3	-0.7
Take PCP																													
% saying any	—	—	—	—	27.8	22.2	17.2	17.3	14.2	14.2	15.9	16.1	15.5	13.5	14.7	13.0	12.0	12.7	15.6	15.5	18.3	20.3	19.7	20.2	16.8	17.5	19.1	17.2	-1.9
% saying most or all	—	—	—	—	1.7	1.6	0.9	0.9	1.1	1.1	1.2	1.2	1.1	0.8	1.2	0.5	0.5	0.9	1.9	1.2	1.2	1.3	1.4	1.6	1.5	1.7	1.3	1.0	-0.3
Take MDMA (Ecstasy)																													
% saying any	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	12.4	11.9	10.7	12.8	15.9	20.7	24.2	27.7	24.5	26.7	37.3	41.9	38.0	-3.9s
% saying most or all	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.2	1.7	2.1	1.2	1.7	2.8	3.0	2.6	2.5	2.7	4.8	5.2	3.7	-1.6
Take cocaine																													
% saying any	33.6	28.8	30.1	33.2	38.9	41.6	40.1	40.7	37.6	38.9	43.8	45.6	43.7	37.7	37.4	31.7	26.8	26.3	24.5	26.1	24.8	28.1	28.5	31.2	27.8	27.2	27.1	26.8	-0.3
% saying most or all	3.4	3.2	3.6	4.0	6.0	6.1	6.3	4.9	5.1	5.1	5.8	6.2	5.1	3.4	3.7	2.1	1.5	1.5	2.1	1.5	2.0	2.2	2.0	3.2	2.9	2.0	1.7	1.7	-0.1
Take crack																													
% saying any	—	—	—	—	—	—	—	—	—	—	—	—	27.4	25.4	26.1	19.2	17.6	17.8	17.9	20.0	19.2	21.6	22.2	24.4	19.0	21.4	23.4	21.5	-1.9
% saying most or all	—	—	—	—	—	—	—	—	—	—	—	—	2.2	1.1	2.1	0.6	0.6	0.7	0.9	1.0	1.1	0.9	1.1	1.7	1.5	1.4	0.8	0.8	0.0
Take cocaine powder																													
% saying any	—	—	—	—	—	—	—	—	—	—	—	—	—	—	25.3	24.6	19.8	19.7	18.1	20.7	19.2	22.8	24.8	22.9	22.0	21.3	20.1	22.4	+2.3
% saying most or all	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.3	2.5	1.8	2.0	1.6	1.9	1.7	1.9	2.0	1.9	1.9	1.8	1.5	1.9	+0.4

(Table continued on next page)

**TABLE 9-4 (cont.)**  
**Long-Term Trends in Friends' Use of Drugs as Estimated by Twelfth Graders**

Q. How many of your friends would you estimate . . .	Class of:																							'01-'02 change						
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997		1998	1999	2000	2001	2002	
Take heroin																														
% saying any	15.2	13.6	12.9	14.3	12.9	13.0	12.5	13.2	12.0	13.0	14.5	15.3	13.9	12.4	14.0	11.4	11.4	13.2	13.3	14.3	14.5	15.6	15.6	16.5	12.7	14.9	13.1	12.9	-0.2	
% saying most or all	0.7	0.8	0.7	0.9	0.5	1.0	0.5	0.7	0.8	0.8	0.9	1.1	0.9	0.7	1.1	0.4	0.4	0.7	1.1	1.0	1.1	0.9	0.8	1.3	1.0	1.1	0.9	0.7	-0.1	
Take other narcotics																														
% saying any	28.8	24.1	23.7	23.2	23.1	22.4	23.1	23.9	20.8	21.4	22.8	21.8	23.2	19.2	19.2	17.2	13.7	14.9	16.1	18.5	19.5	21.8	22.2	24.8	22.9	23.1	24.0	27.5	+3.5s	
% saying most or all	2.1	2.2	1.7	1.4	1.5	1.7	1.5	1.4	1.4	1.6	1.4	1.8	1.4	1.2	1.4	0.9	0.5	1.1	1.2	1.0	1.6	1.5	1.4	2.9	1.8	2.0	2.0	2.1	+0.1	
Take amphetamines																														
% saying any	51.0	42.2	41.3	40.7	40.7	43.9	48.8	50.6	46.1	45.1	43.3	41.8	39.5	33.4	33.5	28.7	24.3	24.3	27.5	28.1	30.3	32.2	32.7	33.8	30.8	32.9	33.2	34.4	+1.2	
% saying most or all	5.9	5.6	4.1	4.7	4.3	4.8	6.4	5.4	5.1	4.5	3.4	3.4	2.6	1.9	2.6	1.9	1.3	1.3	2.0	1.8	2.0	2.8	2.4	3.4	2.8	3.1	2.2	2.4	+0.1	
Take crystal meth. (ice)																														
% saying any	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9.1	10.2	8.9	9.4	11.8	12.9	15.9	18.6	16.8	15.7	16.9	17.0	17.5	+0.5	
% saying most or all	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.7	1.0	1.5	1.2	1.5	1.7	1.5	2.3	2.1	1.1	2.0	1.6	2.0	+0.4	
Take barbiturates																														
% saying any	45.0	36.3	34.7	32.5	30.7	30.5	31.1	31.3	28.3	26.6	27.1	25.6	24.3	19.7	20.3	17.4	14.8	16.4	17.8	18.2	17.8	21.6	20.4	22.8	20.9	21.6	22.1	25.3	+3.2	
% saying most or all	4.3	3.5	3.0	2.3	2.1	2.6	2.1	1.8	1.7	1.7	1.6	1.4	1.1	1.1	1.4	0.6	0.5	0.6	1.0	1.1	1.4	1.6	1.1	2.5	1.4	1.7	1.1	1.7	+0.5	
Take quaaludes																														
% saying any	31.7	27.0	28.3	27.0	27.7	32.5	35.0	35.5	29.7	26.1	26.0	23.5	22.0	17.1	16.6	14.3	12.0	13.1	14.2	14.2	15.5	18.1	16.1	17.4	15.5	16.2	17.8	18.0	+0.2	
% saying most or all	3.0	1.8	2.9	2.2	2.8	3.6	3.6	2.6	2.6	1.7	1.3	1.6	1.0	1.0	1.3	0.8	0.5	0.8	1.1	1.1	1.3	1.7	1.1	2.0	1.4	1.4	1.2	1.2	-0.1	
Take tranquilizers																														
% saying any	45.6	36.3	37.8	34.8	32.0	29.7	29.5	29.9	26.7	26.6	25.8	24.2	23.3	19.9	18.0	14.9	13.5	14.6	15.5	16.5	15.8	18.1	17.9	19.7	16.4	19.4	18.6	21.2	+2.6	
% saying most or all	3.5	3.1	2.7	1.8	2.0	1.9	1.4	1.1	1.2	1.5	1.2	1.3	1.0	0.7	1.5	0.5	0.4	0.7	0.9	0.9	1.1	1.4	0.8	2.3	1.3	2.1	1.3	1.6	+0.3	
Drink alcoholic beverages																														
% saying any	96.7	95.1	94.4	94.9	95.4	96.1	94.7	95.7	95.5	94.6	94.6	95.6	95.4	95.7	95.1	92.0	91.2	90.5	88.9	90.1	90.9	89.6	90.7	91.2	90.2	89.8	89.2	88.0	-1.1	
% saying most or all	68.4	64.7	66.2	68.9	68.5	68.9	67.7	69.7	69.0	66.6	66.0	68.0	71.8	68.1	67.1	60.5	58.6	56.9	57.0	59.6	56.4	56.4	60.9	61.0	58.2	57.2	59.2	53.7	-5.5ss	
Get drunk at least once a week																														
% saying any	82.4	80.7	81.0	82.0	83.3	83.1	81.8	83.1	83.9	81.5	82.5	84.7	85.6	84.4	82.8	79.2	79.8	79.9	79.2	81.4	78.9	78.5	82.4	81.1	81.5	79.5	79.6	78.3	-1.3	
% saying most or all	30.1	26.6	27.6	30.2	32.0	30.1	29.4	29.9	31.0	29.6	29.9	31.8	31.3	29.6	31.1	27.5	29.7	28.6	27.6	28.4	27.4	29.0	30.9	31.7	30.1	32.4	32.7	28.3	-4.4s	
Smoke cigarettes																														
% saying any	95.2	93.7	93.7	93.1	92.1	90.6	88.5	88.3	87.0	86.0	87.0	87.8	88.3	87.7	86.5	84.9	85.7	84.4	84.8	88.1	87.9	88.3	89.9	89.5	89.3	87.2	86.8	85.4	-1.4	
% saying most or all	41.5	36.7	33.9	32.2	28.6	23.3	22.4	24.1	22.4	19.2	22.8	21.5	21.0	20.2	23.1	21.4	21.8	21.4	25.0	25.3	27.5	30.4	34.4	33.9	31.1	28.2	25.0	23.0	-2.1	
Take steroids																														
% saying any	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	25.9	24.7	21.5	19.0	18.1	19.5	17.9	18.9	18.3	20.0	19.8	21.7	21.6	-0.1	
% saying most or all	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.8	1.0	1.7	0.9	1.2	1.3	0.8	1.7	1.4	0.9	1.9	1.2	1.5	+0.3	
	Approx. N =	2640	2697	2788	3247	2933	2987	3307	3303	3095	2945	2971	2798	2948	2961	2587	2361	2339	2373	2410	2337	2379	2156	2292	2313	2060	1838	1923	1968	

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available.

† indicates some change in the question. See relevant footnote.

Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.

SOURCE: The Monitoring the Future Study, the University of Michigan.

\*These estimates were derived from responses to the questions listed. "Any illicit drug" includes all of the drugs listed except MDMA (Ecstasy), cocaine powder, crystal methamphetamine (ice), alcohol, get drunk, cigarettes, and steroids. PCP and the nitrites were not included in 1975 through 1978. Crack was not included in 1975 through 1986.

†In 2001 the question text was changed from "other psychedelics" to "other hallucinogens" and "shrooms" was added to the list of examples. These changes likely explain the discontinuity in the 2001 results.



**TABLE 9-5**

**Trends in Perceived Availability of Drugs by Eighth and Tenth Graders, 1992–2002**

Q.  
How difficult do you think it would be for you to get each of the following types of drugs, if you wanted some?

Percentage saying “fairly easy” or “very easy” to get<sup>a</sup>

	<u>8th Grade</u>											<u>10th Grade</u>												
	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>'01-'02 change</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>'01-'02 change</u>
Marijuana	42.3	43.8	49.9	52.4	54.8	54.2	50.6	48.4	47.0	48.1	46.6	-1.4	65.2	68.4	75.0	78.1	81.1	80.5	77.9	78.2	77.7	77.4	75.9	-1.5
LSD	21.5	21.8	21.8	23.5	23.6	22.7	19.3	18.3	17.0	17.6	15.2	-2.4	33.6	35.8	36.1	39.8	41.0	38.3	34.0	34.3	32.9	31.2	26.8	-4.4
PCP <sup>b</sup>	18.0	18.5	17.7	19.0	19.6	19.2	17.5	17.1	16.0	15.4	14.1	-1.4	23.7	23.4	23.8	24.7	26.8	24.8	23.9	24.5	25.0	21.6	20.8	-0.8
MDMA (Ecstasy) <sup>b</sup>	—	—	—	—	—	—	—	—	—	23.8	22.8	-1.0	—	—	—	—	—	—	—	—	—	41.4	41.0	-0.4
Crack	25.6	25.9	26.9	28.7	27.9	27.5	26.5	25.9	24.9	24.4	23.7	-0.7	33.7	33.0	34.2	34.6	36.4	36.0	36.3	36.5	34.0	30.6	31.3	+0.7
Cocaine powder	25.7	25.9	26.4	27.8	27.2	26.9	25.7	25.0	23.9	23.9	22.5	-1.5	35.0	34.1	34.5	35.3	36.9	37.1	36.8	36.7	34.5	31.0	31.8	+0.9
Heroin	19.7	19.8	19.4	21.1	20.6	19.8	18.0	17.5	16.5	16.9	16.0	-0.9	24.3	24.3	24.7	24.6	24.8	24.4	23.0	23.7	22.3	20.1	19.9	-0.3
Other narcotics <sup>b</sup>	19.8	19.0	18.3	20.3	20.0	20.6	17.1	16.2	15.6	15.0	14.7	-0.3	26.9	24.9	26.9	27.8	29.4	29.0	26.1	26.6	27.2	25.8	25.4	-0.4
Amphetamines	32.2	31.4	31.0	33.4	32.6	30.6	27.3	25.9	25.5	26.2	24.4	-1.8	43.4	46.4	46.6	47.7	47.2	44.6	41.0	41.3	40.9	40.6	39.6	-1.0
Crystal meth. (ice) <sup>b</sup>	16.0	15.1	14.1	16.0	16.3	15.7	16.0	14.7	14.9	13.9	13.3	-0.6	18.8	16.4	17.8	20.7	22.6	22.9	22.1	21.8	22.8	19.9	20.5	+0.6
Barbiturates	27.4	26.1	25.3	26.5	25.6	24.4	21.1	20.8	19.7	20.7	19.4	-1.2	38.0	38.8	38.3	38.8	38.1	35.6	32.7	33.2	32.4	32.8	32.4	-0.4
Tranquilizers	22.9	21.4	20.4	21.3	20.4	19.6	18.1	17.3	16.2	17.8	16.9	-0.9	31.6	30.5	29.8	30.6	30.3	28.7	26.5	26.8	27.6	28.5	28.3	-0.2
Alcohol	76.2	73.9	74.5	74.9	75.3	74.9	73.1	72.3	70.6	70.6	67.9	-2.8	88.6	88.9	89.8	89.7	90.4	89.0	88.0	88.2	87.7	87.7	84.8	-2.9
Cigarettes	77.8	75.5	76.1	76.4	76.9	76.0	73.6	71.5	68.7	67.7	64.3	-3.5	89.1	89.4	90.3	90.7	91.3	89.6	88.1	88.3	86.8	86.3	83.3	-3.1
Steroids	24.0	22.7	23.1	23.8	24.1	23.6	22.3	22.6	22.3	23.1	22.0	-1.2	37.6	33.6	33.6	34.8	34.8	34.2	33.0	35.9	35.4	33.1	33.2	0.0
<i>Approx. N = 8355 16775 16119 15496 16318 16482 16208 15397 15180 14804 13972</i>												<i>7014 14652 15192 16209 14887 14856 14423 13112 13690 13518 13694</i>												

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. ‘—’ indicates data not available.  
Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.  
SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Answer alternatives were: (1) Probably impossible, (2) Very difficult, (3) Fairly difficult, (4) Fairly easy, (5) Very easy and (6) Can't say, drug unfamiliar.

<sup>b</sup>Beginning in 1993, data based on one of two forms; N is one-half of N indicated.

**TABLE 9-6**  
**Long-Term Trends in Perceived Availability of Drugs by Twelfth Graders**

Q. How difficult do you think it would be for you to get each of the following types of drugs, if you wanted some?	Percentage saying "fairly easy" or "very easy" to get <sup>a</sup>																									'01-'02 change				
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999		2000	2001	2002	
Marijuana	87.8	87.4	87.9	87.8	90.1	89.0	89.2	88.5	86.2	84.6	85.5	85.2	84.8	85.0	84.3	84.4	83.3	82.7	83.0	85.5	88.5	88.7	89.6	90.4	88.9	88.5	88.5	87.2	-1.3	
Amyl/butyl nitrites	—	—	—	—	—	—	—	—	—	—	—	—	23.9	25.9	26.8	24.4	22.7	25.9	25.9	26.7	26.0	23.9	23.8	25.1	21.4	23.3	22.5	22.3	-0.2	
LSD	46.2	37.4	34.5	32.2	34.2	35.3	35.0	34.2	30.9	30.6	30.5	28.5	31.4	33.3	38.3	40.7	39.5	44.5	49.2	50.8	53.8	51.3	50.7	48.8	44.7	46.9	44.7	39.6	-5.1	
Some other psychedelic/hallucinogen <sup>b</sup>	47.8	35.7	33.8	33.8	34.6	35.0	32.7	30.6	26.6	26.6	26.1	24.9	25.0	26.2	28.2	28.3	28.0	29.9	33.5	33.8	35.8	33.9	33.9	35.1	29.5	34.5	48.5	47.7	-0.8	
PCP	—	—	—	—	—	—	—	—	—	—	—	—	22.8	24.9	28.9	27.7	27.6	31.7	31.7	31.4	31.0	30.5	30.0	30.7	26.7	28.8	27.2	25.8	-1.4	
MDMA (Ecstasy)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	21.7	22.0	22.1	24.2	28.1	31.2	34.2	36.9	38.8	38.2	40.1	51.4	61.5	59.1	-2.4	
Cocaine	37.0	34.0	33.0	37.8	45.5	47.9	47.5	47.4	43.1	45.0	48.9	51.5	54.2	55.0	58.7	54.5	51.0	52.7	48.5	46.6	47.7	48.1	48.5	51.3	47.6	47.8	46.2	44.6	-1.6	
Crack	—	—	—	—	—	—	—	—	—	—	—	—	41.1	42.1	47.0	42.4	39.9	43.5	43.6	40.5	41.9	40.7	40.6	43.8	41.1	42.6	40.2	38.5	-1.7	
Cocaine powder	—	—	—	—	—	—	—	—	—	—	—	—	52.9	50.3	53.7	49.0	46.0	48.0	45.4	43.7	43.8	44.4	43.3	45.7	43.7	44.6	40.7	40.2	-0.5	
Heroin	24.2	18.4	17.9	16.4	18.9	21.2	19.2	20.8	19.3	19.9	21.0	22.0	23.7	28.0	31.4	31.9	30.6	34.9	33.7	34.1	35.1	32.2	33.8	35.6	32.1	33.5	32.3	29.0	-3.3	
Some other narcotic (including methadone)	34.5	26.9	27.8	26.1	28.7	29.4	29.6	30.4	30.0	32.1	33.1	32.2	33.0	35.8	38.3	38.1	34.6	37.1	37.5	38.0	39.8	40.0	38.9	42.8	40.8	43.9	40.5	44.0	+3.5	
Amphetamines	67.8	61.8	58.1	58.5	59.9	61.3	69.5	70.8	68.5	68.2	66.4	64.3	64.5	63.9	64.3	59.7	57.3	58.8	61.5	62.0	62.8	59.4	59.8	60.8	58.1	57.1	57.1	57.4	+0.3	
Crystal meth. (Ice)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	24.1	24.3	26.0	26.6	25.6	27.0	26.9	27.6	29.8	27.6	27.8	28.3	28.3	0.0	
Barbiturates	60.0	54.4	52.4	50.6	49.8	49.1	54.9	55.2	52.5	51.9	51.3	48.3	48.2	47.8	48.4	45.9	42.4	44.0	44.5	43.3	42.3	41.4	40.0	40.7	37.9	37.4	35.7	36.6	+0.9	
Tranquilizers	71.8	65.5	64.9	64.3	61.4	59.1	60.8	58.9	55.3	54.5	54.7	51.2	48.6	49.1	45.3	44.7	40.8	40.9	41.1	39.2	37.8	36.0	35.4	36.2	32.7	33.8	33.1	32.9	-0.2	
Alcohol	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	95.0	94.8	94.3	94.7	+0.4
Steroids	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	46.7	46.8	44.8	42.9	45.5	40.3	41.7	44.5	44.6	44.8	44.4	45.5	+1.1	
	Approx. N =	2627	2865	3065	3598	3172	3240	3578	3602	3385	3269	3274	3077	3271	3231	2806	2549	2476	2586	2670	2526	2552	2340	2517	2520	2215	2095	1850	2138	

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available.

‡ indicates some change in the question. See relevant footnote.

Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.

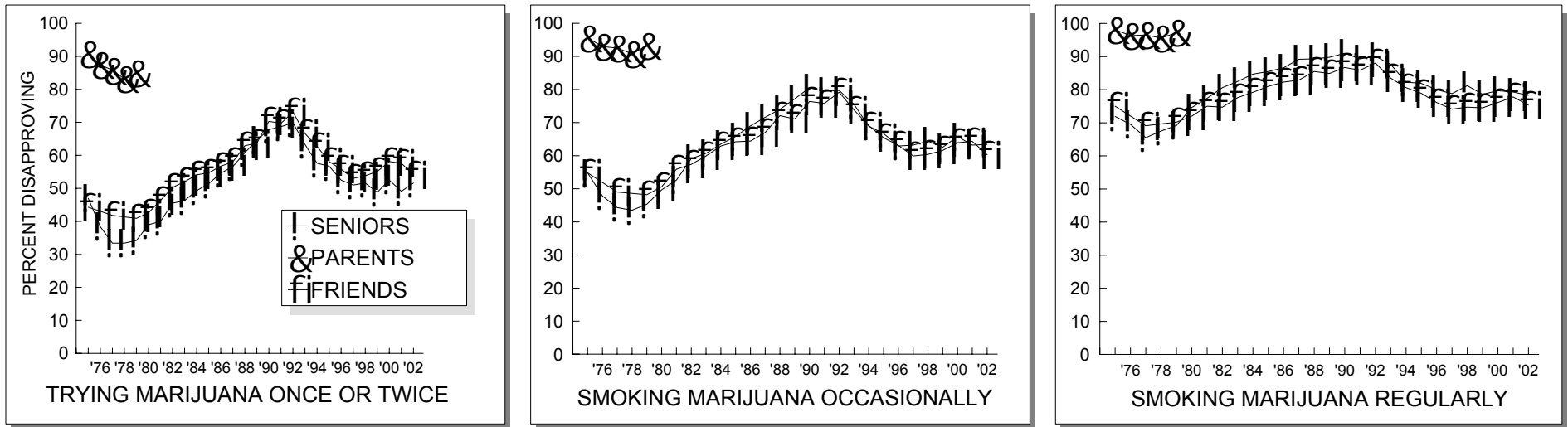
SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Answer alternatives were: (1) Probably impossible, (2) Very difficult, (3) Fairly difficult, (4) Fairly easy, and (5) Very easy.

<sup>b</sup>In 2001, the question text was changed from "some other psychedelic" to "some other hallucinogen" and "shrooms" was added to the list of examples. These changes likely explain the discontinuity in the 2001 results.

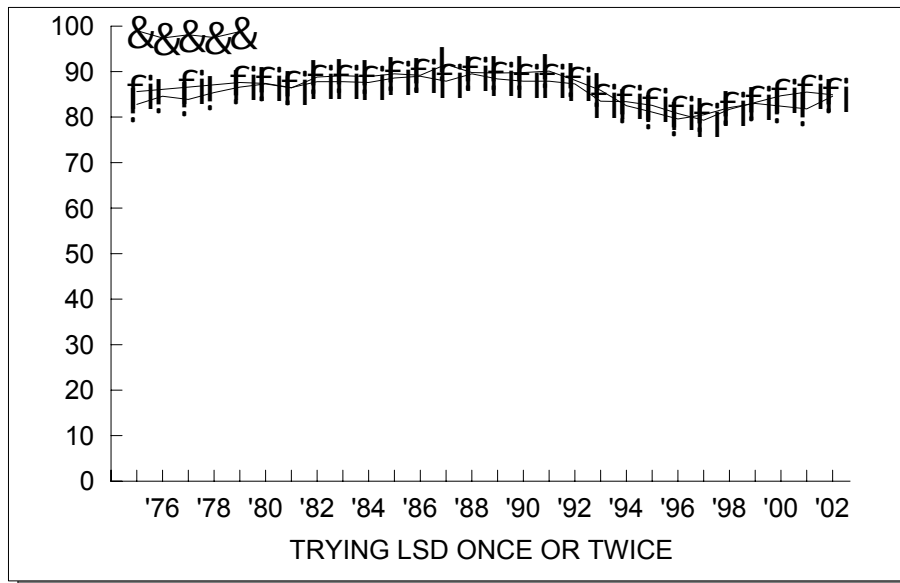
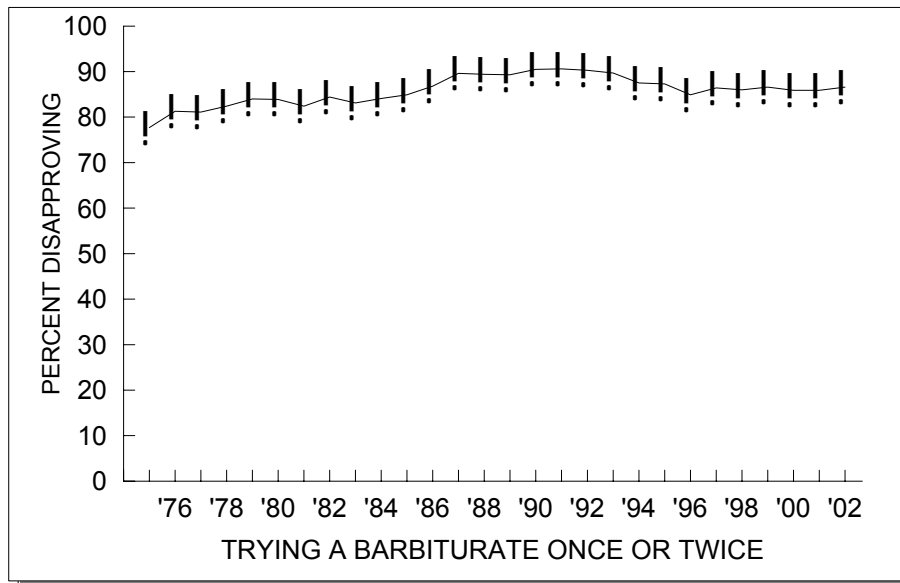
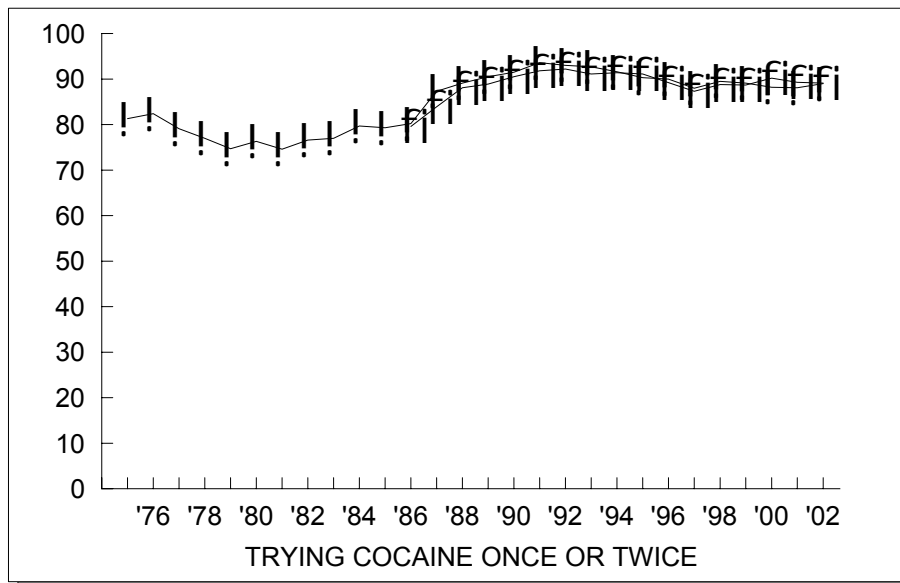
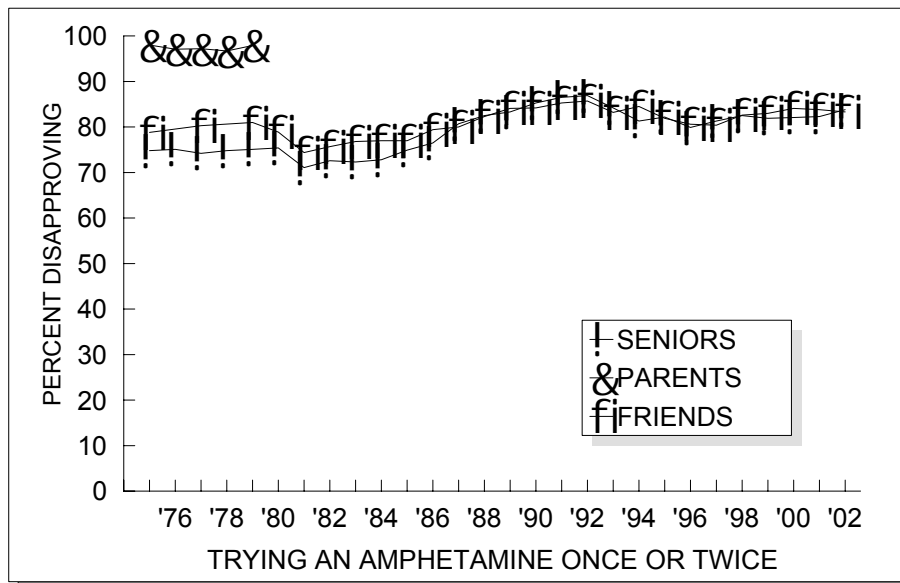
FIGURE 9-1a

**Trends in Disapproval of Illicit Drug Use**  
Twelfth Graders, Parents, and Peers



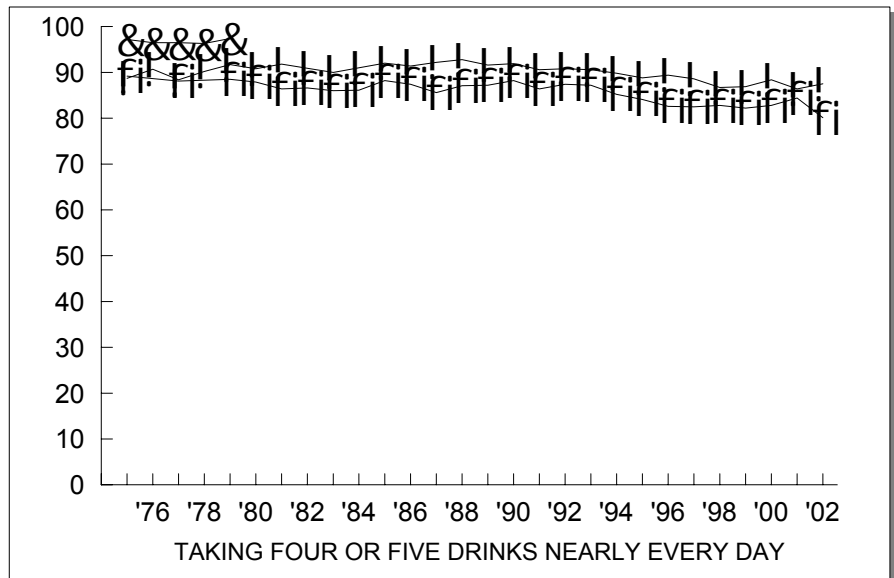
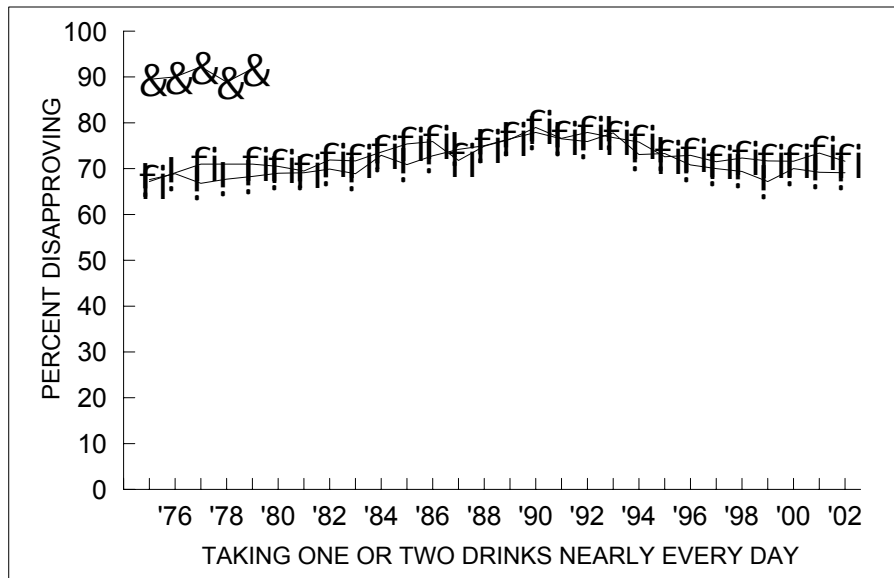
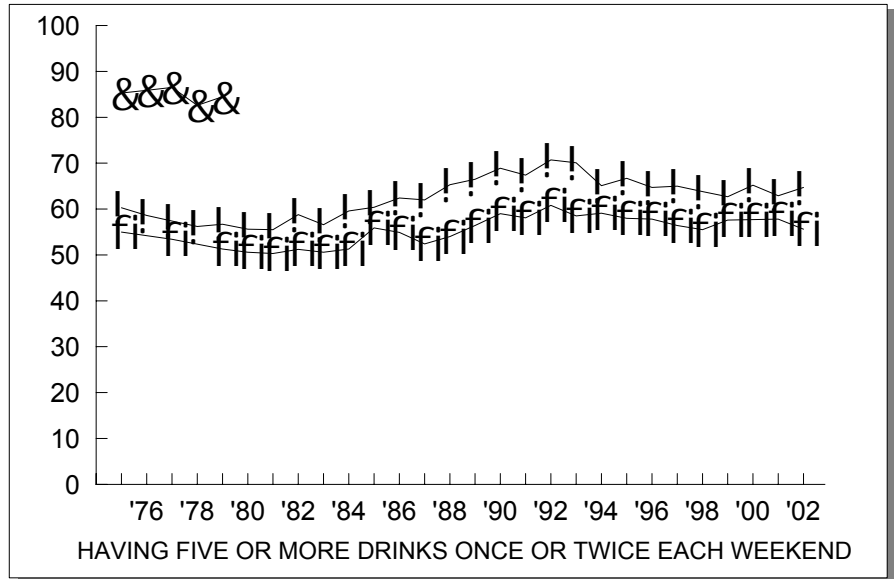
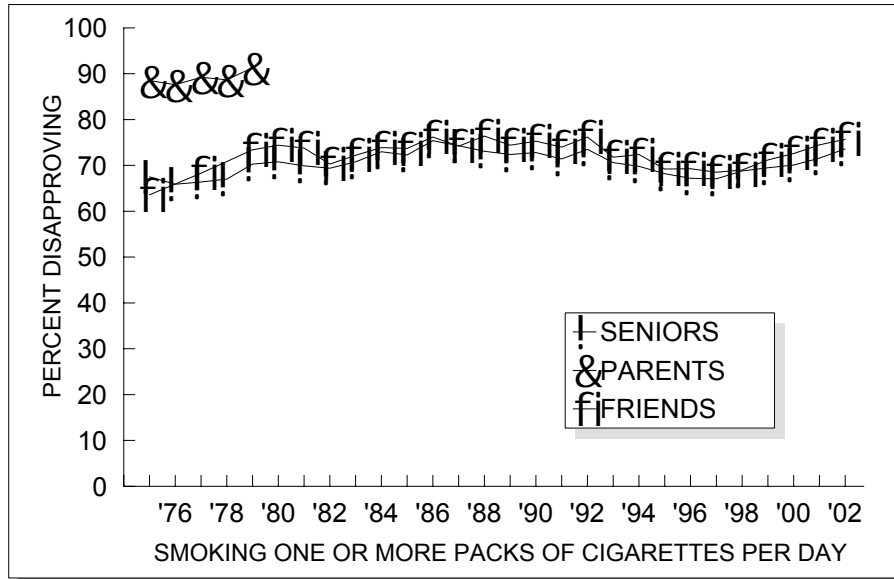
NOTE: The 1975, 1977, and 1979 points indicating the percentage of seniors who said their friends would disapprove have been adjusted to compensate for lack of comparability of question-context between administration years. (See text for discussion.)

FIGURE 9-1b  
**Trends in Disapproval of Illicit Drug Use**  
 Twelfth Graders, Parents, and Peers



NOTE: The 1975, 1977, and 1979 points indicating the percentage of seniors who said their friends would disapprove have been adjusted to compensate for lack of comparability of question-context between administration years. (See text for discussion.)

FIGURE 9-2  
**Trends in Disapproval of Licit Drug Use**  
 Twelfth Graders, Parents, and Peers



NOTE: The 1975, 1977, and 1979 points indicating the percentage of seniors who said their friends would disapprove have been adjusted to compensate for lack of comparability of question-context between administration years. (See text for discussion.)

FIGURE 9-3

**Trends in 30-Day Prevalence of Marijuana Use and Friends' Use of Marijuana for Twelfth Graders**

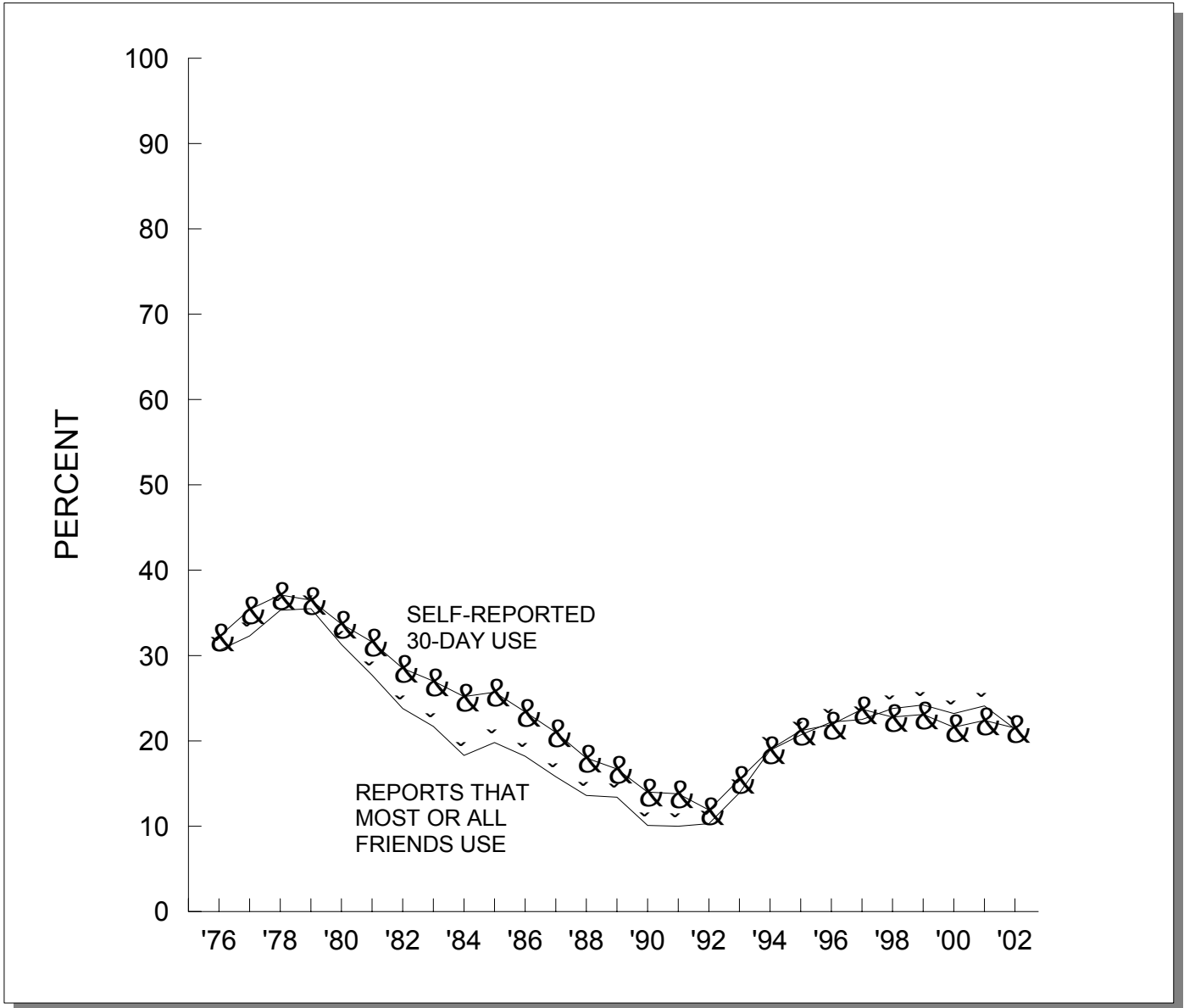
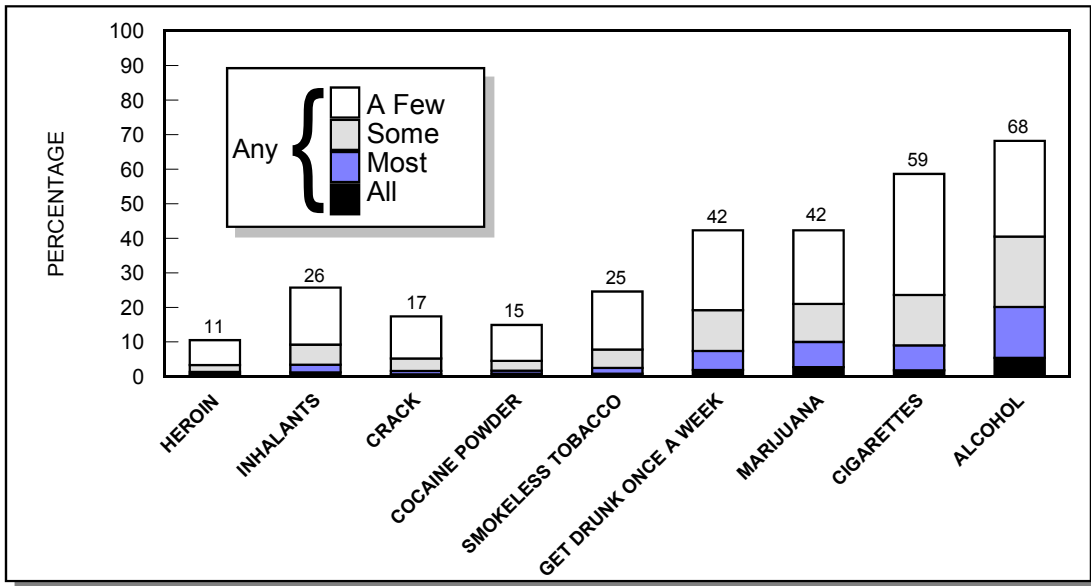


FIGURE 9-4

**Proportion of Friends Using Each Drug  
as Estimated by Eighth, Tenth, and Twelfth Graders, 2002**

**Eighth Graders**



**Tenth Graders**

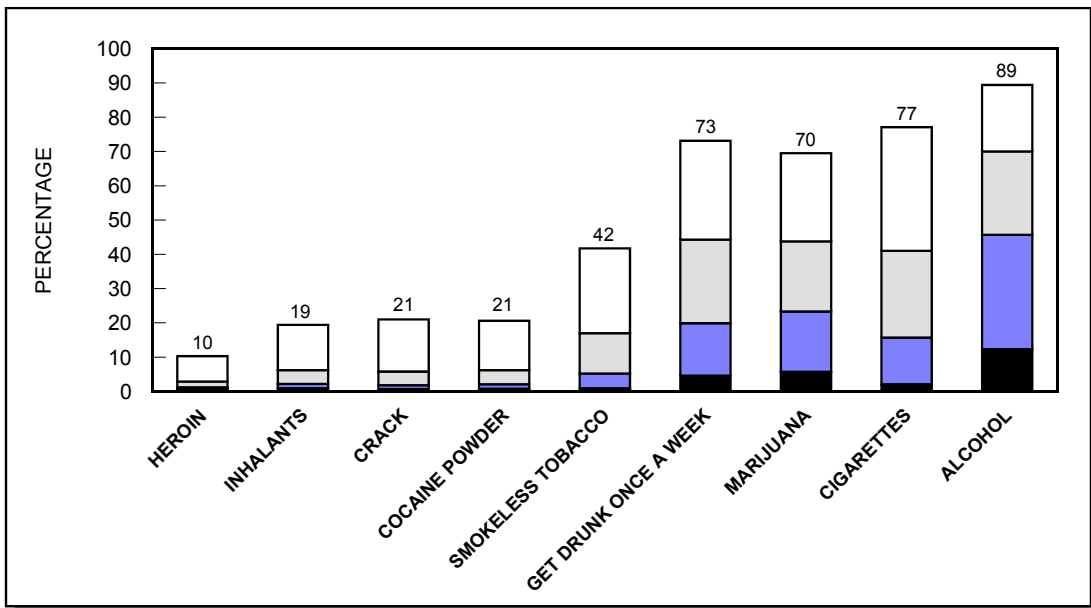


FIGURE 9-4 (cont.)

**Proportion of Friends Using Each Drug  
as Estimated by Eighth, Tenth, and Twelfth Graders, 2002**

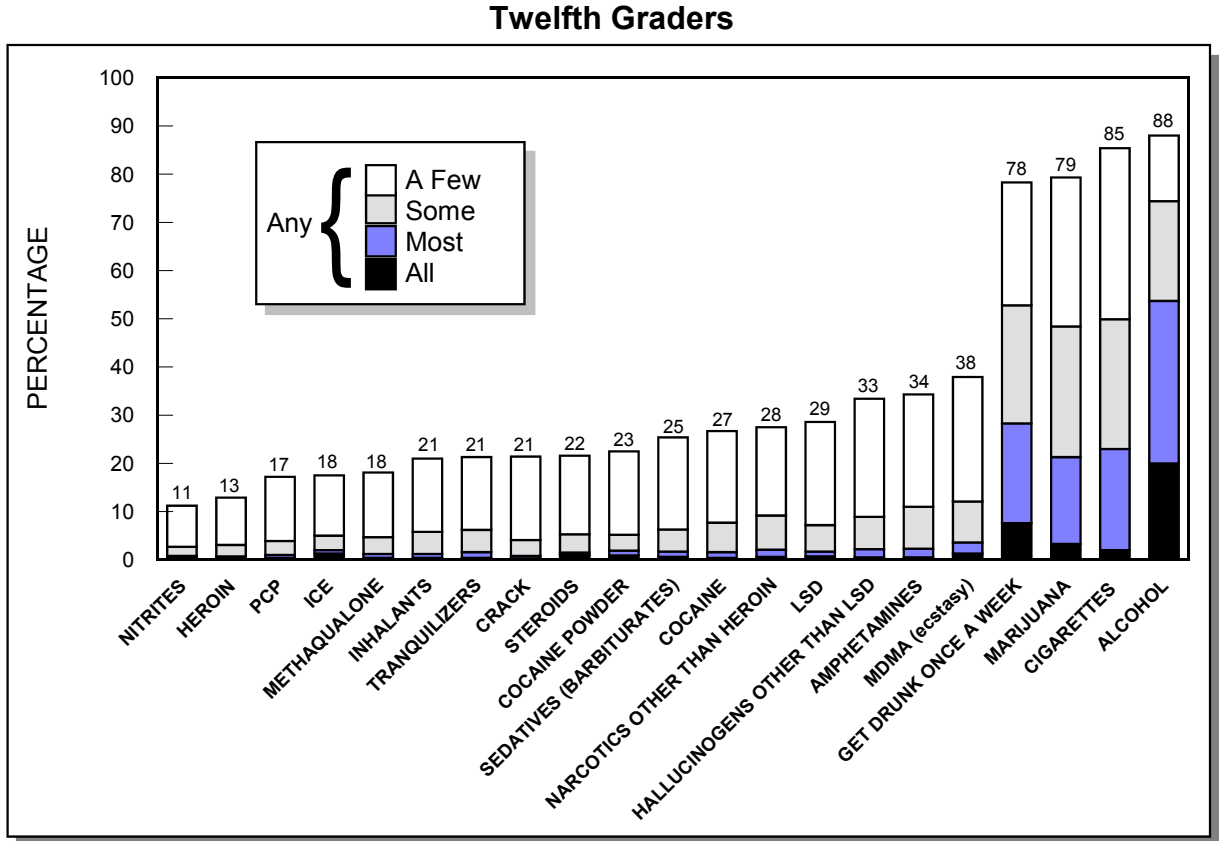




FIGURE 9-5a

Trends in Perceived Availability of Drugs for Twelfth Graders

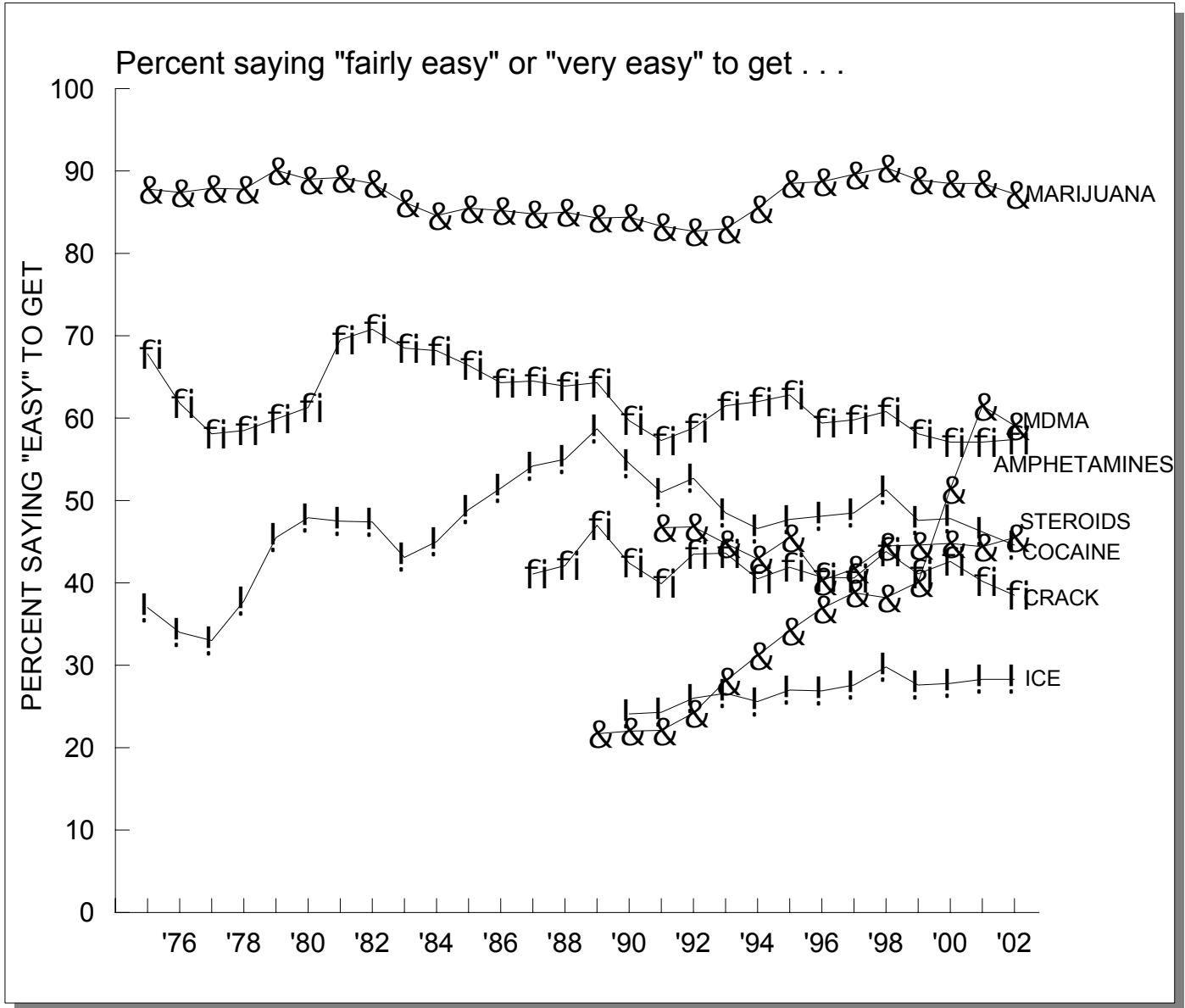


FIGURE 9-5b

Trends in Perceived Availability of Drugs for Twelfth Graders

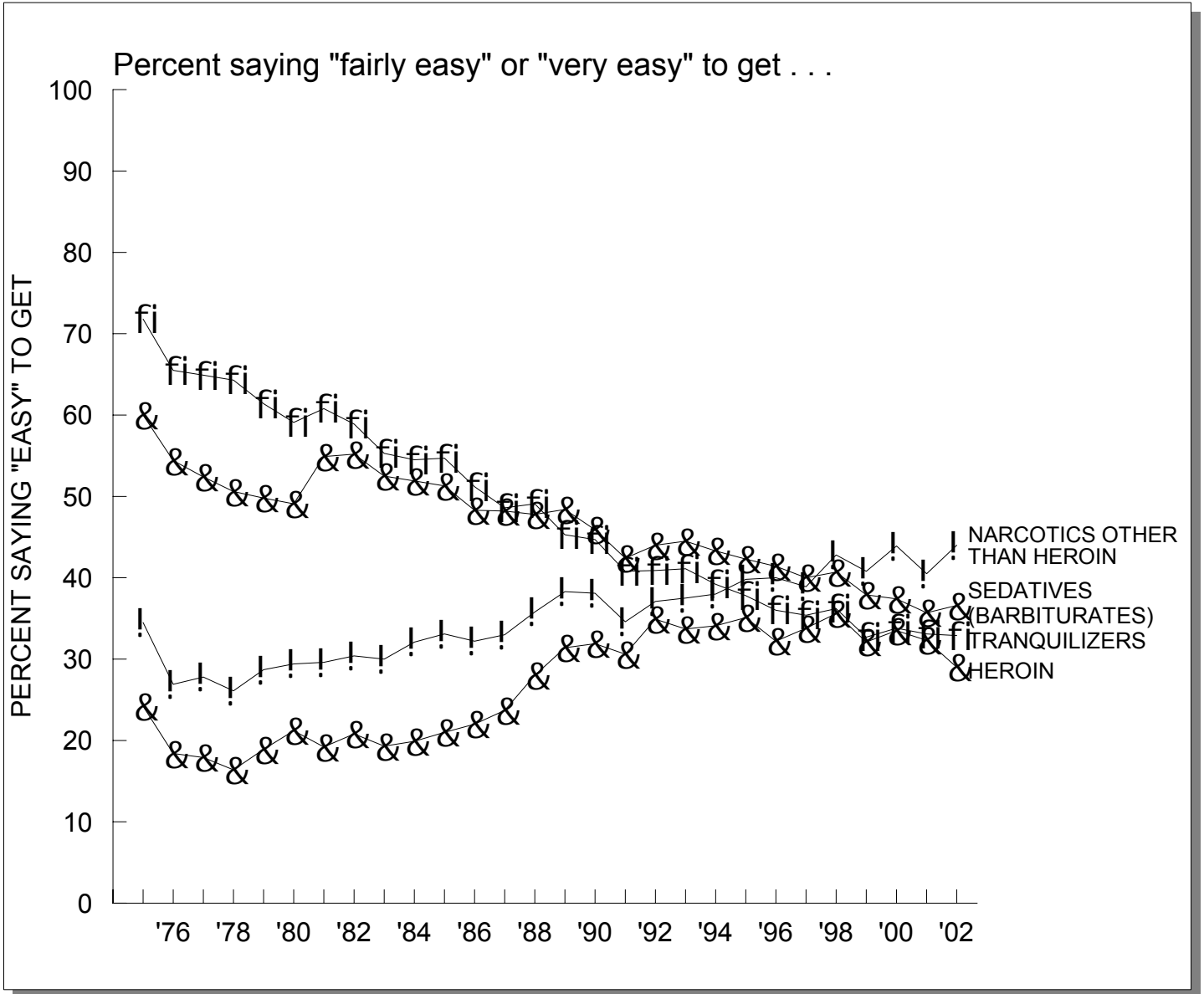
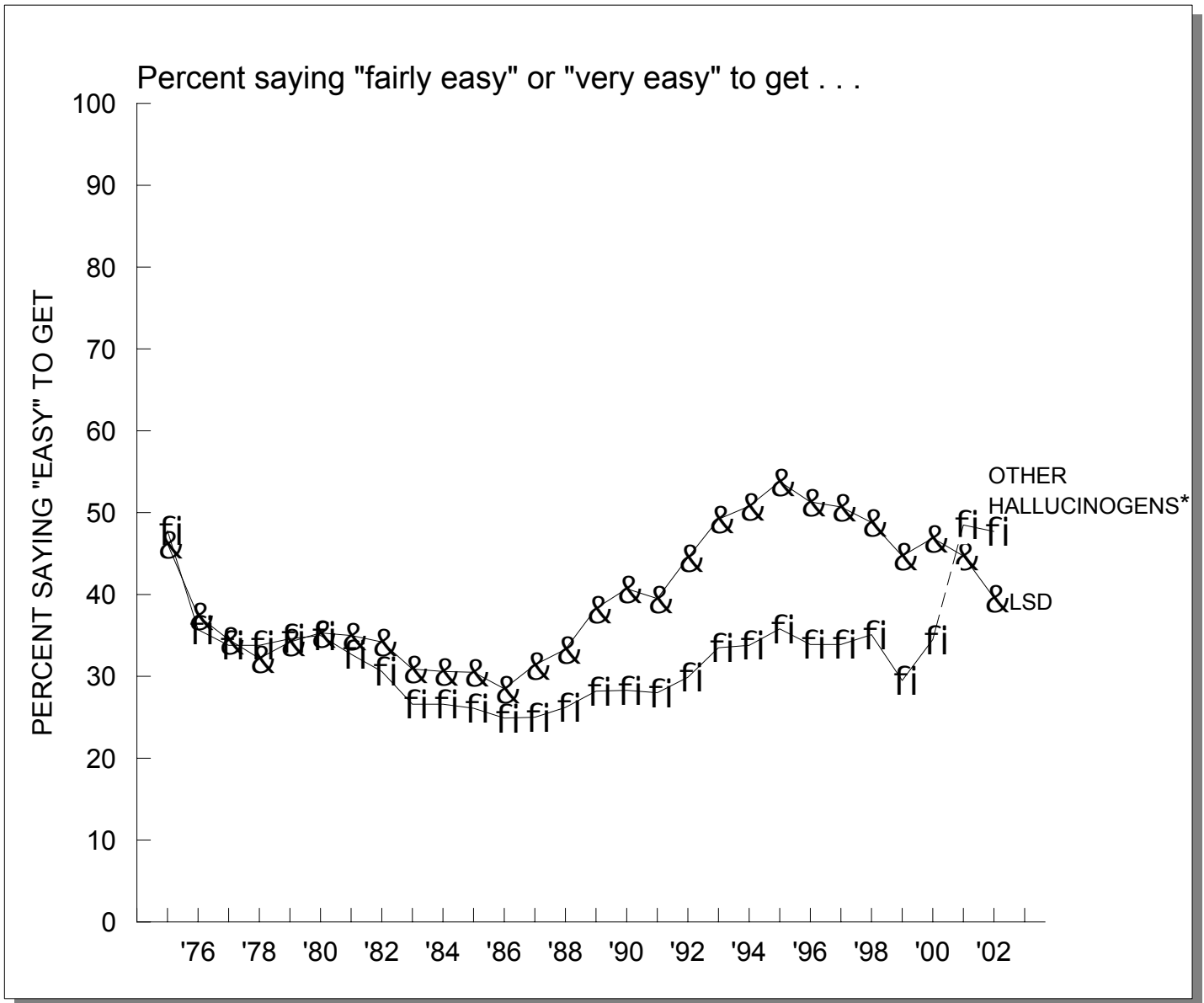


FIGURE 9-5c

Trends in Perceived Availability of Drugs for Twelfth Graders



\*NOTE: In 2001 the question text was changed from "other psychedelics" to "other hallucinogens," and "shrooms" was added to the list of examples. These changes likely explain the discontinuity in the 2001 results.

## Chapter 10

### OTHER FINDINGS FROM THE STUDY

In addition to the data presented in the preceding chapters, the Monitoring the Future study includes many other data dealing with substance use. In this section we present findings on the use of nonprescription stimulants and the daily use of marijuana. Both represent original analyses not reported elsewhere. They are followed by synopses of some findings that have been presented elsewhere during the past year or so.

#### THE USE OF NONPRESCRIPTION STIMULANTS

As is discussed in other chapters of this report, between 1979 and 1981 we observed a substantial increase in reported stimulant use by high school seniors. We had reason to believe that a fair part of that increase was attributable to the use of nonprescription stimulants of two general types—"look-alike" drugs (pseudo-amphetamines, usually sold by mail order, which look like and often have names that sound like real amphetamines) and over-the-counter stimulants (primarily diet pills and stay-awake pills). These drugs usually contained caffeine, ephedrine, and/or phenylpropanolamine as their active ingredient(s).

Prompted by this development, in 1982 we introduced new questions in some of the twelfth-grade questionnaire forms in order to assess more accurately the use of amphetamines and the use of the "look-alikes," diet pills, and stay-awake pills of the nonprescription variety. For example, in one of the twelfth-grade questionnaire forms, beginning in 1982, respondents were asked to indicate on how many occasions (if any) they had taken nonprescription diet pills such as Dietac, Dexatrim, and Prolamine (a) in their lifetime, (b) in the prior 12 months, and (c) in the prior 30 days. (These correspond to the standard usage questions asked for all drugs.) Similar questions were asked about the use of nonprescription stay-awake pills (such as No-Doz, Vivarin, Wake, and Caffedrine) and the "look-alike" stimulants. (The latter are described at some length in the actual question.)

In three of the five twelfth-grade questionnaire forms in 1982 and 1983 (and in all questionnaire forms thereafter) respondents were also asked about their use of prescription amphetamines outside of medically prescribed use, with explicit instructions to exclude the use of over-the-counter and "look-alike" drugs. These data have been collected only from twelfth-grade respondents.

#### Prevalence of Use in 2002 Among Seniors

- Tables 10-1a, 10-1b, and 10-1c contain the prevalence of use levels for these various classes of stimulants in 2002. As can be seen, a substantial proportion of twelfth-grade students (21.0%) have used over-the-counter *diet pills* and 9.2% have used them in just the past month. Some 1.8% of seniors reported using them daily.

- Based on the data presented earlier in this report, we know that very similar proportions are using actual *amphetamines* outside of medically prescribed use: twelfth graders' self-reported prevalence rates in 2002 were 16.8% lifetime, 5.5% monthly, and 0.7% daily use.
- Currently, *stay-awake pills* are the most widely used type of stimulant, with 22.5% lifetime, 5.8% monthly, and 0.7% daily prevalence rates.
- Somewhat fewer students knowingly used the "*look-alikes*" than used diet pills or amphetamines (adjusted), with 9.6% lifetime, 2.8% monthly, and 0.4% daily prevalence rates. Of course, it is probable that some proportion of those who thought they were getting real amphetamines were actually sold look-alikes, which are far cheaper for drug dealers to purchase.
- In 1983, the newly revised question on *amphetamine* use yielded prevalence estimates about one quarter to one third lower than those yielded by the original version of the question, indicating that, indeed, some distortion in the unadjusted estimates occurred as a result of respondents including some nonprescription stimulant use. However, we believe that there should be little or no such distortion in recent years, primarily due to improvement in the questions but also to the considerable decline in use of diet pills and look-alikes, as is discussed later.

### Subgroup Differences

- Tables 10-1a through 10-1c show the prevalence figures for these drug classes for *males and females* separately. It can be seen that the use of *diet pills* is dramatically higher among females than males. In fact, the absolute prevalence levels for twelfth-grade females are impressively high; 29% reported some experience with them and 12%—or about one in every eight females—reported use in just the last month. For all other types of stimulants, the prevalence rates for both sexes are fairly close.
- A similar comparison between those planning four years of college (referred to here as the "college-bound") and those who are not has shown some differences in use of nonprescription stimulants in the past (Tables 10-2a through 10-2c). The results generally have shown little difference between these two groups in their use of *stay-awake pills*: the annual prevalence rate in 2002 is 16% for the noncollege-bound versus 14% for the college-bound. Use of *diet pills* is higher among the noncollege-bound (18% versus 14% among the college-bound in 2002). The use of "*look-alikes*" is higher among the noncollege-bound (8.7% versus 5.7%).
- There are some modest regional differences in annual prevalence of *diet pills*, with the Northeast and South regions at 17%, the North Central region at 14%, and the West at 12%. For *stay-awake pills*, the North Central has the highest prevalence rate at 19%, with the other regions ranging from 13% to 14%. The "*look-alikes*" show little regional differences, ranging from 5.9% to 7.3%.

- With regard to community size, annual prevalence of *diet pills*, “*look-alikes*,” and *stay-awake pills* currently is highest in the nonmetropolitan areas.
- Consistent with racial/ethnic differences observed on nearly all other drugs, African American students are substantially lower in their use of all three types of over-the-counter stimulants than are Whites, and they have been for a long time (Tables 10-2a through 10-2c). Hispanics have tended to be in the middle.
- The use of all of the nonprescription stimulants (i.e., *diet pills*, *stay-awake pills*, and “*look-alikes*”) is substantially higher among those who have used illicit drugs than among those who have not, and it is highest among those who have become most involved with illicit drugs (see Table 10-3). For example, only 2.3% of twelfth graders who have abstained from any illicit drug use report ever having used a “*look-alike*” stimulant, compared to 6.4% of those who report having used only marijuana and 26.2% of those who report having used some illicit drug other than marijuana (usually in addition to marijuana). We already know that use of all of the illicit drugs is correlated with two legal drugs—alcohol and cigarettes. These findings show that the constellation of correlated substance-using behaviors also includes the use of the over-the-counter psychoactive substances.

### Trends in Use Among Seniors

- The questions on amphetamine use were revised in 1982 to eliminate the inappropriate reporting of the use of nonprescription stimulants. It is worth noting that the 1982 figures for the use of *amphetamines adjusted* (i.e., excluding the use of nonprescription stimulants) were higher than the *unadjusted* figures for all years prior to 1980. (See Tables 5-1 through 5-4 in chapter 5.) This suggests that amphetamine use indeed increased between 1979 and 1982—or at least increased in the use of what, to the best of the respondents’ knowledge, were amphetamines. Not all of the increase in amphetamine use was artifactual. The data presented earlier on the proportion of seniors who were around people using amphetamines to “get high” support this conclusion (see chapter 9).
- The longer-term trends for the “*look-alikes*” seem to parallel fairly closely the long-term trends for illicit drug use. There was a decline in annual prevalence from 10.8% in 1982 to 5.2% in 1991, followed by some increase (to 6.8% in 1995) and then some falloff (to 5.8% in 2000). In 2001 annual prevalence rose to 7.1% and then declined a bit to 6.6% in 2002. Most of the initial decline in rate of use occurred among those who had used illicit drugs other than marijuana—the group primarily involved in the use of look-alikes. Further, that group was a shrinking proportion of the total (see Table 10-1c).
- The use of *diet pills* decreased even more substantially, in this case between 1983 and 1993. Over that interval, annual prevalence fell from 20.5% to 8.0%. This was a positive finding, because nearly all of them contained phenylpropanolamine, which the Food and Drug Administration has since determined to have health risks for the user.<sup>87</sup> Nearly all

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<sup>87</sup>We expressed our concern some years ago about the fact that such a large proportion of the adolescent female population was taking this drug, about which so little was known.

the decline occurred among the group who had used illicit drugs other than marijuana. After 1991, use rose some (to 10% in 1995), and it has continued to rise (reaching 15% in 2002; see Table 10-1a). The jump in 2002 was substantial (up 3.3 percentage points) and may presage another period of growth in the use of these substances.

- Unlike the use of other nonprescription stimulants, the use of *stay-awake pills* increased substantially in the early to mid-1980s (see Table 10-1b). The annual prevalence of use increased from 12% in 1982 (when use was first measured) to 26% in 1988, dropped back somewhat to 20% by 1992, and remained fairly level for several years before dropping back to 15% in 2000, where it remains in 2002. (Both the increase and decrease were observed most strongly among those who had used illicit drugs.)

### Trends in Subgroup Differences

- All subgroups (defined by gender, college plans, region of the country, population size, parental education, and race/ethnicity) showed similarly large increases from 1982 to 1988 in their use of *stay-awake pills*. All subgroups' annual prevalence of use decreased between 1988 and 1992 with the exception of one of the parental education groups, though there was rather little decrease in the North Central region. After 1992, use stabilized in virtually all subgroups until the 1999 decline, which also occurred broadly.
- For *diet pills*, trends for subgroups parallel the overall trends across time for the most part. In 2002 there were significant increases in the use of diet pills overall, as well as for females, those not planning to complete four years of college, those living in the South or nonmetropolitan areas, two of the parental education groups, and Hispanics.
- Subgroup differences in trends in the use of "*look-alikes*" also generally reflect the overall trends.

### PERFORMANCE-ENHANCING SUBSTANCES: "ANDRO" AND CREATINE

In seeking a better understanding of the increase in recent years of teen steroid use, we added a single "tripwire" question about the frequency of use in the past year of *androstenedione* (a precursor that the body can convert to anabolic steroids), since presumably it is used for many of the same purposes as anabolic steroids. As is discussed in chapter 4, a minority of those reporting steroid use in the prior 12 months also report androstenedione (andro) use in that same period, and a minority of those reporting andro use also report anabolic steroid use. This overlap introduces the possibility of some double counting of events in the two questions; but the majority of use is not overlapping. The 2002 annual prevalence rates for andro are 1.2%, 1.9%, and 2.5% in grades 8, 10, and 12. However, since use tends to be concentrated among males, their prevalence is higher: 1.7%, 2.2%, and 4.7% in grades 8, 10, and 12, respectively, compared with 0.8%, 1.6%, and 0.4% for females in those same grades. In other words, a significant number of American males today take andro during their school years.

Because andro is often taken for performance enhancement and physical enhancement, we decided to examine teens' use of another substance that is used for the same purposes—*creatine*.

This substance is not a hormone or drug, but a nutrient found in the skeletal muscle of most animals. Creatine is used to enhance performance capacity and reduce the recovery time of muscles, as well as to increase muscle mass. It is readily available over the counter, which undoubtedly helps to explain the high levels of use we found among teens. The annual prevalence of use in 2002 was 2.3%, 7.6%, and 8.5% in grades 8, 10, and 12, respectively. Again, the use rates are substantially higher for males: 3.9%, 13.1%, and 16.8% in those three grades, versus 0.9%, 2.1%, and 1.5% for females. In other words, a sixth of all twelfth-grade boys have used creatine in just the prior 12 months—which seems a very high prevalence, considering that the long-term effects of this substance apparently have not been well researched.

As we suspected, there is a strong association between andro use and creatine consumption. The great majority of andro users in the prior 12 months indicate that they also used creatine in the same period: 83%, 81%, and 80% in grades 8, 10, and 12, respectively. The association is asymmetric, however, because there are many more creatine users than andro users. Of those reporting creatine use in the prior 12 months, the proportions reporting andro use in the same interval were 43%, 21%, and 23% in grades 8, 10, and 12.

The self-reported use of steroids is likewise associated with creatine use. Of those using steroids in the prior 12 months, the proportions also reporting creatine use were 49%, 58%, and 52% in the three grades. Conversely, the proportions of creatine users in the past 12 months reporting steroid use in that interval were 28%, 17%, and 12%. Thus, relatively few creatine users are using steroids in these populations and more of them are taking andro. However, the great majority of andro users are also taking creatine, while roughly half of the anabolic steroid users are.

Table 10-4 presents trend data on the use of andro and creatine since these substances were first included in 2001. None of the one-year changes in the use of andro is significant, though the direction of change in the two upper grades is downward. Creatine, on the other hand, does show a significant decline among twelfth graders, but the declines in the lower two grades do not reach significance. Subgroup data on prevalence and trends are given in Table 10-4, as well.

## THE USE OF MARIJUANA ON A DAILY BASIS

In much earlier reports in this series, we summarized a number of findings regarding daily marijuana users, including what kind of people they are, how use changes after high school for different subgroups, and what daily users see as the negative consequences of their use.<sup>88</sup> In 1982, a special question segment was introduced in one twelfth-grade questionnaire form to secure more detailed measurement of individual patterns of daily marijuana use. More specifically, respondents were asked (a) whether at any time during their lives they had ever used marijuana on a daily or near-daily basis for at least a month and, if so, (b) how recently they had

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<sup>88</sup>For the original reports see the following, which are available from the author: Johnston, L. D. (1981). Frequent marijuana use: Correlates, possible effects, and reasons for using and quitting. In R. DeSilva, R. Dupont, & G. Russell (Eds.), *Treating the marijuana dependent person* (pp. 8-14). New York: The American Council on Marijuana. Also see Johnston, L. D. (1982). A review and analysis of recent changes in marijuana use by American young people. In *Marijuana: The national impact on education* (pp. 8-13). New York: The American Council on Marijuana.



done so, (c) when they first had done so, and (d) how many total months they had smoked marijuana daily, cumulating over their whole lifetime. The results of our analyses of those data follow.

### **Lifetime Prevalence of Daily Marijuana Use Among Seniors**

- ***Current daily marijuana use***, defined as use on 20 or more occasions in the past 30 days, has fluctuated widely since the study began, as we know from the trend data presented in chapter 5. Among twelfth-grade respondents, it rose from 6.0% in 1975 to 10.7% in 1978, declined to 1.9% by 1992, and then began to increase again. In 1999, it stood at 6.0%, the highest prevalence rate since 1982, and it remains at 6.0% in 2002.
- Using the questions on duration of daily use, we have found that, since 1982, the ***lifetime prevalence of daily marijuana use for a month or more*** has been far higher than current daily marijuana use—for example, at 16% in 2002 (one in every six seniors) versus 6% for current daily use. In other words, the proportion who described themselves as having been daily or near-daily users at some time in their lives is nearly three times as high as the proportion who described themselves as current daily users.

However, we believe it very likely that this ratio has changed dramatically over the life of the study as a result of the large secular trends in daily use. Therefore, it would be inaccurate to extrapolate, for example, that the lifetime prevalence of daily use for the class of 1978 was three to four times their 10.7% current use figure for that year. (An investigation of data from a follow-up panel of the class of 1978 confirms this assertion.)

Utilizing data collected in 1989 from follow-up panels from the graduating classes of 1976 through 1988 combined, we found that the lifetime prevalence of daily marijuana use for these graduates (ranging in age from about 19 to 31) was 20%. Approximately one fourth of the older portion of that group—graduates from the classes of 1976 through 1979—indicated having been daily marijuana users for a month or more at some time in their lives. Thus, experience with daily use of marijuana was a widespread phenomenon in the cohorts of Americans who passed through late adolescence in the peak years of the drug epidemic. In 2002 these cohorts would be in the approximate age range of 41 to 44. Volume II provides more detailed information on the drug use history of these and other adult age groups.

### **Grade of First Daily Marijuana Use**

- Daily marijuana use can begin at quite a young age. Of the 2002 seniors who reported being daily marijuana users at some time in their lives (i.e., 16% of the sample), nearly two thirds (65%) of all daily users, or 10% of all seniors, began that pattern of use *before* tenth grade. We are confident that different graduating classes show disparate age-associated patterns of onset, depending on the secular trends and, to a lesser degree, cohort effects. The percentages of all seniors in 2002 who started daily marijuana use in each grade level are presented in Table 10-5. It shows that a substantial proportion began such daily marijuana use in grades 7 through 9 (9.7% of all males and 6.2% of all females).

### Recency of Daily Marijuana Use by Seniors

- Nearly three quarters (74%) of those twelfth graders who reported *ever* having been daily marijuana users (for at least a one-month interval) have used marijuana that frequently in the past year. One quarter (26%) of them said they last used the drug that frequently “about two years ago” or longer.
- More than one third (35%) of all seniors who said they have ever been daily marijuana users for a month or more classified themselves as having used it daily or almost daily “during the past month” (5.5% of the entire sample). Our operational definition of current daily users on the standard prevalence and frequency of use questions—20 or more uses in the last 30 days—yields a 6.0% rate in 2002, very close to the 5.5% rate based on the respondents’ own definition. In fact, these two rates generally have been quite close across the years.

### Duration of Daily Marijuana Use by Seniors

- It seems likely that the most serious long-term health consequences associated with marijuana use will be directly related to the duration of heavy use, and in the late 1970s there was considerable concern that a large population of chronic heavy users would evolve. Thus, a question was introduced asking respondents to estimate the *cumulative* number of months they have smoked marijuana daily or nearly daily. While hardly an adequate measure of the many possible cross-time patterns of use, this question does provide a gross measure of the total length of exposure to heavy use.
- Table 10-4 gives the distribution of answers to this question. It shows that of the 16% of 2002 seniors with any daily marijuana use experience lasting a month or more, more than half (56%) reported that their intervals of daily use totaled “about one year” or less. (One quarter, or 25%, used marijuana daily less than three months cumulatively.) Slightly more than a third (36%, or 5.6% of *all* seniors) used marijuana daily “about two years” or more cumulatively. About one percent (1.0%) reported daily use of the drug for a total of six years or longer. *The striking fact that 1 in every 18 seniors today has smoked marijuana daily (or almost daily) for at least two years may come as a surprise to many.*

### Subgroup Differences

- There is some *gender difference* in the proportion of seniors having ever been a daily marijuana user (17% for males and 12% for females), and the cumulative duration of daily use is somewhat longer for males. (The gender differences have been larger in many previous years.)
- Whether or not the student has *college plans* is strongly related to lifetime prevalence of daily marijuana use, as well as to current prevalence. Of those seniors planning four years of college, 12% had used marijuana daily compared with 21% of those without such plans. In addition, the college-bound users show a distinctly shorter cumulative duration of use, and a lower proportion of them used marijuana daily during the past month. Among those in each group who did use the drug daily, the age-at-onset is younger for the noncollege-bound (see Table 10-5).

- At present there are some **regional differences** in lifetime prevalence of daily marijuana use. The West is lowest (at 12%), followed by the South (15%), the North Central (16%), and the Northeast (21%).
- The differences in lifetime daily marijuana use associated with **urbanicity** are modest (as is true for current daily use). Lifetime prevalence of daily marijuana use is 15% in the large cities and smaller cities and 17% in the nonurban areas.

### **Trends in Use of Marijuana on a Daily Basis**

- Table 10-6a presents trend data on the lifetime prevalence of **daily marijuana** use for a month or more. It shows a large decline from 1982, when this measure was first used, through 1992—from 21% to 8%. By 1997 it had risen substantially to 19%, before declining a bit to 18% in 2001 and then to 16% in 2002.
- Between 1982 and 1992, the decline in lifetime prevalence of **daily marijuana** use was slightly stronger among males (from 20% to 8%) than among females (from 18% to 8%); the absolute drop was larger among the noncollege-bound (23% to 11%) than among the college-bound (14% to 6%), although the proportional drop was not. In the turnaround that began in 1993, most of the increase appears to have occurred among the males and the noncollege-bound (who are now at 17% and 21%, respectively).
- Lifetime prevalence of **daily marijuana** use had dropped in all four regions of the country. Between 1982 and 1992, it dropped in the Northeast, North Central, and South, and between 1982 and 1990, it dropped in the West. The decline was greatest in the Northeast, where it dropped from 25% in 1982 to 9% in 1992. A turnaround occurred in all regions after 1991 or 1992, with steady increases through 1997 (and possibly later in the South). A leveling and possible decline was observable in all regions since, with the West showing a large and significant drop in 2002.
- All three population density levels exhibited long-term declines in **lifetime daily marijuana use** from 1982 to 1992, and all showed an increase thereafter, until 1998, when a leveling or decline was observed in all three strata.
- **Daily prevalence of marijuana use prior to tenth grade** declined from 13% in the class of 1982 to 5% in the class of 1993. (This corresponds to people who were ninth graders between 1979 and 1990.) The decline in earlier use halted among the twelfth graders surveyed in 1993, and prevalence then began to climb through 2001. It declined some in 2002. Subgroup trends may be examined in Table 10-6b.

## OTHER PUBLICATIONS FROM THE STUDY

A number of other publications emanate from the Monitoring the Future study each year. Further details, as well as a more complete listing, may be found on the project's Web site: [www.monitoringthefuture.org](http://www.monitoringthefuture.org).

### **Unsafe Driving by High School Seniors<sup>89</sup>**

This article reports trends from 1976 to 2001 in the number of tickets or warnings that high school seniors receive, the number of vehicle accidents in which they are drivers, and the number of these events that occur after use of alcohol, marijuana, or other illegal drugs (each taken separately). Results demonstrate that the problem of unsafe or inappropriate driving among American youth is of considerable magnitude, although there has been a downward trend, when adjusted for number of miles driven. One interesting finding was that the difference in frequency of tickets or accidents that occurred after use of alcohol as compared to after use of marijuana diminished markedly over the interval from 1976 to 2001. The similarity in driving inappropriately after alcohol or marijuana reflects the similarity in the frequency with which seniors actually drive after use of alcohol or marijuana. New questions about driving after use of marijuana were added to the 2001 survey of seniors, and results show that 16% reported having driven at least once in the past two weeks after drinking alcohol, compared to 15% after smoking marijuana. It was concluded that despite the decline in the number of accidents and tickets occurring after drinking or using illicit drugs, aggressive policies are still needed to deter such behavior among youth.

### **Relationship Between Student Illicit Drug Use and School Drug-Testing Policies<sup>90</sup>**

This report provides information about drug testing by American secondary schools, based on results from national surveys. The study provides descriptive information on drug-testing practices by schools from 1998 to 2001 and examines the association between drug testing by schools and reported drug use by students. The work for this study and the collection of school-level data on drug testing were supported through the Youth, Education, and Society study, funded by the Robert Wood Johnson Foundation; the student-level survey data were obtained from the same schools participating in the Monitoring the Future study funded by the National Institute on Drug Abuse. A relatively small percentage of the nation's secondary schools (about 18%) reported testing students for drug use, with more high schools than middle schools reporting drug testing. Drug testing was not associated with students' reported illicit drug use or with rate of use among experienced marijuana users. Drug testing of athletes was not associated with illicit drug use among male high school athletes. It was concluded that drug testing of students does not appear to be an effective policy at this time. It was noted, however, that relatively few schools had implemented extensive random drug testing.

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<sup>89</sup>O'Malley, P. M., & Johnston, L. D. (2003). Unsafe driving by high school seniors: National trends from 1976 to 2001 in tickets and accidents after use of alcohol, marijuana, and other illegal drugs. *Journal of Studies on Alcohol, 64*, 305-312.

<sup>90</sup>Yamaguchi, R., Johnston, L. D., & O'Malley, P. M. (2003). Relationship between student illicit drug use and school drug-testing policies. *Journal of School Health, 73*(4), 159-164.

### **Gender and Ethnic Differences in Smoking, Drinking, and Illicit Drug Use Among American Eighth, Tenth, and Twelfth Grade Students<sup>91</sup>**

This paper examines ethnic differences in licit and illicit drug use among American eighth, tenth and twelfth grade students, with a particular focus on females. The study utilized Monitoring the Future data but examined ethnic differences in greater detail than reported in the present volume. Data were combined across several years in order to obtain sufficient numbers of cases for some groups. The data show that use has generally been highest among Native American females; somewhat lower among White, Hispanic/Latina, and African American females; and lowest among Asian American females. (This pattern is similar to that for males.) Trend data suggest that there have been important changes in girls' drug use over time and that females' and males' drug use patterns are converging.

### **Tobacco, Alcohol, and Illicit Drug Use: Racial and Ethnic Differences Among U.S. High School Seniors<sup>92</sup>**

This article examines differences in adolescents' use of tobacco, alcohol, and illicit drugs by racial and ethnic groups, using data collected by the Monitoring the Future study between 1976 and 2000. The results show that, on average, American Indian seniors showed the highest levels of tobacco, alcohol, and illicit drug use. Cuban American and White seniors also tended to have relatively high levels of substance use, followed by Mexican American and Puerto Rican seniors. Other Latin American, African American, and Asian American seniors reported the lowest levels of drug use. Most of these differences are longstanding, but some have widened and others narrowed during the past 25 years. It was concluded that significant differences exist in adolescent use of tobacco, alcohol, and illicit drugs by racial and ethnic groups, and these differences have changed over time.

### **Effect of School-Level Norms on Student Substance Use<sup>93</sup>**

This study examines the relationship between school norms of substance use disapproval (disapproval by the student body) and students' use of cigarettes, alcohol, and marijuana. The work on this article was supported in part by the Youth, Education, and Society study, using data from students surveyed in the Monitoring the Future project in 1999. Measures of school norms of substance use disapproval were obtained by aggregating students' personal disapproval of daily cigarette use, heavy drinking, and marijuana use within each school. Analysis using logistic nonlinear hierarchical models indicated that, in general, school-level disapproval lowered the probability of students' use of these substances, controlling for their own disapproval and for student and school demographic characteristics. The beneficial effect of school-level disapproval of cigarette and marijuana use on eighth-grade students' probability of daily cigarette use and marijuana use was significantly higher than it was for the twelfth-grade students. The effect of school-level disapproval of heavy drinking on the probability of students' drinking was not significantly different across the three grades. Further, a school environment of disapproval was

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<sup>91</sup>Wallace, J. M., Jr., Bachman J. G., O'Malley, P. M., Schulenberg, J. E., Cooper, S. M., & Johnston, L. D. (2003). Gender and ethnic differences in smoking, drinking, and illicit drug use among American 8th, 10th, and 12th grade students, 1976-2000. *Addictions*, 98, 225-234.

<sup>92</sup>Wallace, J. M., Jr., Bachman J. G., O'Malley, P. M., Johnston, L. D., Schulenberg, J. E., & Cooper, S. M. (2002). Tobacco, alcohol, and illicit drug use: Racial and ethnic differences among U.S. high school seniors, 1976-2000. *Public Health Reports*, 117 (Supplement 1), S67-S75.

<sup>93</sup>Kumar, R., O'Malley, P. M., Johnston, L. D., Schulenberg, J. E., & Bachman, J. G. (2002). Effect of school-level norms on student substance use. *Prevention Science*, 3, 105-124.

also found to create a protective environment for those students in the eighth and tenth grades who were themselves not disapproving of daily cigarette use. These results argue for prevention programs that include creation of an overarching environment of peer disapproval of substance use in schools, and they indicate that students coming to school with the least anti-drug attitudes will be the ones most affected by these norms.

### **How Academic Achievement, Attitudes, and Behaviors Relate to the Course of Substance Use During Adolescence<sup>94</sup>**

This article utilized self-report data regarding alcohol, cigarette, and marijuana use, collected biennially from age 14 to 20 (1991 to 1999) in a nationally representative panel sample of adolescents ( $N = 1,897$ ) from the Monitoring the Future study. Growth curve analyses were performed using hierarchical linear modeling to consider psychosocial background, motivation and school attitudes, and parental and peer influences at age 14 as predictors of concurrent substance use and change in substance use. Results indicated that school misbehavior and peer encouragement of misbehavior were positively associated with substance use at age 14 and with *increased* use over time. School bonding, school interest, school effort, academic achievement, and parental help with school were negatively associated with use at age 14 and with changes in use over time. The protective effects of positive school attitudes and perceptions of high status connected to academics were stronger for low-achieving compared to high-achieving youth. Implications for a developmental perspective on substance use etiology and prevention are discussed.

### **Other Adolescent Risk Behaviors and Substance Use, and the Role of Risk Perceptions in Substance Use<sup>95</sup>**

This chapter is part of a volume dealing with a range of risk behaviors in which adolescents engage, including risky sexual behaviors, gambling, suicide attempts, smoking, drinking, and drug use. Reporting findings from Monitoring the Future on the various forms of substance use, the author documents the high degree of positive association in the use of many (mostly psychoactive) substances. Among those discussed are tobacco, alcohol, a large number of illegal and controlled drugs, inhalants, steroids, and even substances such as over-the-counter sleep aids, stay-awake pills, and “look-alike” drugs. The structure of associations of these behaviors with other classes of risk behaviors, including delinquent acts and dangerous driving, is considered, as are some possible common personality determinants.

The parallel association of a large number of these risk behaviors with several environmentally-related risk factors is also documented, along with evidence from Monitoring the Future of the consistency of these risk factors over a long historical period. The author judges it not insignificant that these factors—religiosity, academic performance, truancy from school, and number of evenings spent outside the parental home—measure attachment to responsible, adult-run institutions.

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<sup>94</sup>Bryant, A. L., Schulenberg, J. E., O'Malley, P. M., Bachman, J. G., & Johnston, L. D. (in press, 2003). How academic achievement, attitudes, and behaviors relate to the course of substance use during adolescence: A six-year multi-wave national longitudinal study. *Journal of Research on Adolescence*.

<sup>95</sup>Johnston, L. D. (2003). Alcohol and illicit drugs: The role of risk perceptions. In Dan Romer (Ed.), *Reducing adolescent risk: Toward an integrated approach* (pp. 56-74). Thousand Oaks, CA: Sage.

The author illustrates the role of perceived risk in influencing trends in adolescent use of several licit and illicit drugs, pointing out that these beliefs are not common determinants of multiple types of drug use, but rather parallel determinants. Such understanding is important for purposes of intervention since changing the perceived risk associated with using one drug is unlikely to influence the use of other drugs. Therefore, the beliefs must be modified drug by drug. Finally, the modeling behavior of popular role model groups in the larger culture is considered as a potentially important class of cultural determinants of adolescent drug-using behavior.

### **National Trends in Treatment and Counseling for Adolescent Substance Abuse<sup>96</sup>**

This paper was an invited presentation to a conference of treatment service providers in New York State. A number of findings from *Monitoring the Future* were discussed, but emphasis was given to the levels and trends in substance abuse treatment reported by the nationally representative samples of students in the study. Based on data from the combined surveys of 1989 through 2001, it was reported that approximately 3% of eighth graders, 3.5% of the tenth graders, and 4% of the high school seniors have received counseling and/or treatment for substance abuse problems at some time in their lives. There was a modest increase over the historical interval in the percent receiving treatment, no doubt reflecting the considerable increases in substance use that occurred earlier in the decade. Seniors, who were asked to differentiate between residential treatment and non-residential treatment or counseling, reported non-residential contact being about three times as prevalent as residential treatment (not counting multiple episodes of either type for the same person.) A considerably more in-depth journal article on this subject is planned.

### **Aims and Objectives of Monitoring the Future**

Every few years the investigators on this study update an extensive description of the many aims and objectives of the study and provide a synopsis of progress that has been made on them. The latest such publication is an occasional paper in the *Monitoring the Future Occasional Paper* series.<sup>97</sup> In addition, it contains a summary of the theoretical perspectives that have guided the design and development of the study over the years. As might be guessed, no one theory was considered sufficiently comprehensive to guide all of the effort; thus several perspectives have been used. This publication is available from the project in hard copy or may be downloaded from the study Web site at [www.monitoringthefuture.org](http://www.monitoringthefuture.org). Look under "Publications" and then under "Occasional Papers" for Occasional Paper No. 52.

### **Design and Procedures of the Study**

Another publication periodically updated in the same series (Occasional Paper No. 54) provides a more detailed description of the *Monitoring the Future* study design and the many field and other procedures that are used to implement that design. These descriptions go well beyond the level of detail contained in the current monographs. The latest one in this series was published

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<sup>96</sup>Johnston, L. D. (2002, October) *National trends in treatment and counseling for adolescent substance abuse*. Invited presentation delivered to the Sixth Annual Statewide Conference of the Alcoholism & Substance Abuse Providers of New York State (ASAP), Syracuse, NY.

<sup>97</sup>Johnston, L. D., O'Malley, P. M., Schulenberg, J. E., & Bachman, J. G. (2001). *The aims and objectives of the Monitoring the Future study and progress toward fulfilling them as of 2001*. (*Monitoring the Future Occasional Paper No. 52*). Ann Arbor, MI: Institute for Social Research.

in 2001.<sup>98</sup> Like Occasional Paper No. 52, it may be downloaded from the study's Web site ([www.monitoringthefuture.org](http://www.monitoringthefuture.org)) or ordered from the study in hard copy form.

## OTHER DATA ON CORRELATES AND TRENDS

Hundreds of correlates of drug use, without accompanying interpretation, may be found in the series of annual volumes from the study entitled *Monitoring the Future: Questionnaire Responses From the Nation's High School Seniors*.<sup>99</sup> For each year since 1975, a separate hardbound volume presents univariate and selected bivariate distributions on all questions contained in the study. A host of variables dealing explicitly with drugs—many of them not covered here—are contained in that series. Bivariate tables are provided for *all* questions each year distributed against an index of lifetime illicit drug involvement, making it possible to examine the relationships between hundreds of potential “risk factors” and drug use.

A special cross-time reference index is contained in each volume to facilitate locating the same question across different years. One can thus derive *trend* data on some 1,500 to 2,000 variables for the entire sample or for important subgroups (based on gender, race, region, college plans, and drug involvement). These volumes also can be helpful to analysts using the original MTF microdata in the Inter-University Consortium of Political and Social Research (ICPSR) archive.

Still another annual publication from the study (Occasional Paper No. 59) presents trends in *graphic* form for the various subgroups discussed in this volume for each of the many drug classes it contains. (It is, in essence, a graphic presentation of the subgroup data contained in tabular form in Appendix D to this volume.) Because of the length of this document and the high cost that would be associated with publishing these graphics in color, this document is available only in electronic form. It may be found on the study's Web site under “Publications” and then under “Occasional Papers.”<sup>100</sup>

## MONITORING THE FUTURE WEB SITE

Any reader wishing to get more information on the study, or to check for recent findings and publications, may reach the study's Web site at [www.monitoringthefuture.org](http://www.monitoringthefuture.org). Prior to publication in this monograph series, many of the latest findings on substance use trends and related attitudes and beliefs are posted on the Web site. This usually occurs by mid-December of the year in which the data were gathered, immediately following their public release to the press.

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<sup>98</sup>Bachman, J. G., Johnston, L. D., & O'Malley, P. M. (2001). *The Monitoring the Future Project after twenty-seven years: Design and procedures*. (Monitoring the Future Occasional Paper No. 54). Ann Arbor, MI: Institute for Social Research.

<sup>99</sup>This series is available from the Monitoring the Future study, Institute for Social Research, The University of Michigan, Ann Arbor, Michigan 48106-1248.

<sup>100</sup>Johnston, L. D., O'Malley, P. M., & Bachman, J. G. (2002). *Demographic subgroup trends for various licit and illicit drugs, 1975-2002*. (Monitoring the Future Occasional Paper No. 59) [On-line]. Ann Arbor, MI: Institute for Social Research. Available: <http://monitoringthefuture.org/>



**TABLE 10-1a**  
**Nonprescription Diet Pills: Trends in Twelfth Graders'**  
**Lifetime, Annual, and Thirty-Day Prevalence of Use, by Gender<sup>a</sup>**

(Entries are percentages)

Prevalence of Use	<u>Class of:</u>																				'01-'02 change	
	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001		2002
<b>Lifetime</b>																						
Total	29.6	31.4	29.7	28.7	26.6	25.5	21.5	19.9	17.7	17.2	15.0	14.8	14.9	15.6	16.0	16.6	15.7	17.1	16.6	17.1	21.0	+3.9s
Males	16.5	17.4	14.8	14.8	13.1	12.4	9.4	9.1	7.8	5.9	6.4	5.6	4.5	6.1	5.5	8.1	6.4	6.5	7.2	8.3	9.8	+1.4
Females	42.2	44.8	43.1	41.5	39.7	38.3	32.6	30.2	28.3	28.1	23.2	23.3	23.7	23.9	25.5	24.5	25.7	26.5	26.4	23.6	29.3	+5.7s
<b>Annual</b>																						
Total	20.5	20.5	18.8	16.9	15.3	13.9	12.2	10.9	10.4	8.8	8.4	8.0	9.3	9.8	9.3	9.8	9.6	10.2	11.1	11.8	15.1	+3.3ss
Males	10.7	10.6	9.2	9.0	6.9	6.4	4.9	4.3	4.3	3.0	4.3	3.2	2.5	3.5	3.7	4.9	4.3	4.0	4.9	6.2	8.1	+1.9
Females	29.5	30.0	27.5	24.4	23.2	21.1	18.8	17.2	16.7	14.2	12.2	12.3	14.9	15.1	14.1	14.6	15.4	15.7	17.2	15.6	20.0	+4.4ss
<b>Thirty-Day</b>																						
Total	9.8	9.5	9.9	7.3	6.5	5.8	5.1	4.8	4.3	3.7	4.0	3.8	4.2	3.8	4.3	4.6	4.8	5.4	5.8	6.3	9.2	+2.9s
Males	5.0	4.0	4.8	3.7	3.2	2.7	1.8	2.3	1.9	1.4	1.9	1.9	1.3	1.1	2.3	2.3	2.2	2.6	2.1	3.7	4.7	+1.0
Females	14.0	13.7	14.2	10.7	9.6	8.9	8.3	7.0	6.7	5.5	5.8	4.9	6.4	5.7	5.8	7.0	7.6	7.8	9.4	8.0	12.2	+4.3ss

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001.  
Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Data based on one form. The total N each year for 1982–89 is approximately 3,300. The total N each year for 1990–98 is approximately 2,600. Beginning in 1999, the total N each year is approximately 2,200.

**TABLE 10-1b**  
**Stay-Awake Pills: Trends in Twelfth Graders'**  
**Lifetime, Annual, and Thirty-Day Prevalence of Use, by Gender<sup>a</sup>**

(Entries are percentages)

Prevalence of Use	<u>Class of:</u>																				'01-'02 change	
	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001		2002
<b>Lifetime</b>																						
Total	19.1	20.4	22.7	26.3	31.5	37.4	37.4	36.3	37.0	37.0	35.6	30.5	31.3	31.2	30.5	31.0	29.6	25.5	23.0	25.6	22.5	-3.1
Males	20.2	22.3	23.2	28.0	32.0	34.8	38.0	37.7	35.3	36.0	34.4	30.4	30.2	29.0	27.4	27.3	29.0	23.3	21.4	25.2	19.2	-6.1s
Females	16.9	18.2	21.7	24.9	31.3	39.4	36.7	35.1	39.2	37.9	37.3	30.1	32.2	32.3	32.1	34.5	30.1	26.9	24.0	26.0	24.5	-1.5
<b>Annual</b>																						
Total	11.8	12.3	13.9	18.2	22.2	25.2	26.4	23.0	23.4	22.2	20.4	19.1	20.7	20.3	19.0	19.7	19.0	15.7	15.0	17.3	14.9	-2.4
Males	12.8	13.8	15.4	19.7	22.3	25.5	27.6	24.8	22.3	22.3	20.9	19.7	20.3	19.7	18.2	17.4	19.5	14.5	14.0	17.8	13.9	-4.0
Females	10.0	10.5	12.5	17.0	22.2	25.0	25.2	21.7	24.5	22.0	20.2	17.6	20.4	20.1	18.7	21.0	18.0	15.9	15.9	16.5	14.6	-1.9
<b>Thirty-Day</b>																						
Total	5.5	5.3	5.8	7.2	9.6	9.2	9.8	8.5	7.3	6.8	7.2	7.0	6.3	7.3	7.5	7.8	7.4	6.8	7.3	7.2	5.8	-1.4
Males	6.0	5.5	6.2	7.7	9.5	9.3	11.0	10.0	7.1	7.6	7.8	7.9	5.9	6.3	8.0	6.7	8.7	5.0	6.8	6.8	5.6	-1.2
Females	4.7	4.5	5.5	6.7	9.3	9.1	8.6	6.9	7.3	5.5	6.5	5.5	5.8	7.1	6.1	8.2	5.8	7.4	7.3	7.3	5.6	-1.7

NOTES: Level of significance of difference between the two most recent classes:  $s = .05$ ,  $ss = .01$ ,  $sss = .001$ .  
Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Data based on one form. The total N each year for 1982–89 is approximately 3,300. The total N each year for 1990–98 is approximately 2,600. Beginning in 1999, the total N each year is approximately 2,200.

**TABLE 10-1c**  
**Look-Alikes: Trends in Twelfth Graders'**  
**Lifetime, Annual, and Thirty-Day Prevalence of Use, by Gender<sup>a</sup>**

(Entries are percentages)

Prevalence of Use	Class of:																				'01-'02 change	
	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001		2002
<b>Lifetime</b>																						
Total	15.1	14.8	15.3	14.2	12.7	11.9	11.7	10.5	10.7	8.9	10.1	10.5	10.3	11.6	10.7	10.8	9.4	9.2	10.0	9.8	9.6	-0.2
Males	13.6	14.2	14.1	14.1	12.3	10.9	10.4	10.1	11.6	8.3	11.0	10.1	9.0	10.8	10.0	10.6	9.4	7.2	11.3	9.4	9.1	-0.3
Females	15.1	14.4	15.2	13.8	12.6	12.3	12.1	10.2	9.9	8.8	9.3	10.4	11.2	10.6	10.3	10.7	8.9	9.7	8.0	9.3	9.3	0.0
<b>Annual</b>																						
Total	10.8	9.4	9.7	8.2	6.9	6.3	5.7	5.6	5.6	5.2	5.4	6.2	6.0	6.8	6.5	6.4	5.7	5.0	5.8	7.1	6.6	-0.5
Males	9.5	9.2	9.7	8.3	6.5	6.4	4.2	6.1	6.6	4.9	6.2	6.4	5.9	7.0	5.7	7.2	6.0	4.6	7.0	7.3	6.8	-0.5
Females	10.7	8.6	8.5	7.8	6.7	6.0	6.3	5.0	4.6	4.7	4.5	5.4	5.7	5.4	6.0	5.5	5.0	4.4	4.3	6.6	5.9	-0.7
<b>Thirty-Day</b>																						
Total	5.6	5.2	4.4	3.6	3.4	2.7	2.7	2.4	2.3	2.1	2.4	2.7	2.4	3.0	3.1	2.7	2.7	2.4	2.6	3.3	2.8	-0.4
Males	4.0	4.5	4.5	3.8	3.4	2.4	1.7	2.3	2.6	2.0	2.5	2.0	2.5	3.0	2.6	2.7	3.1	1.9	3.1	3.0	2.8	-0.2
Females	5.2	5.4	3.8	3.1	3.0	2.7	3.0	2.2	1.8	1.8	2.2	2.9	2.0	2.1	2.7	2.6	2.0	2.0	1.7	2.8	2.3	-0.6

NOTES: Level of significance of difference between the two most recent classes:  $s = .05$ ,  $ss = .01$ ,  $sss = .001$ .  
Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Data based on one form. The total N each year for 1982–89 is approximately 3,300. The total N each year for 1990–98 is approximately 2,600. Beginning in 1999, the total N each year is approximately 2,200.

**TABLE 10-2a**

**Nonprescription Diet Pills: Trends in Annual Prevalence of Use by Subgroups for Twelfth Graders**

Percentage who used in last twelve months																													
Class of:																													
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	'01-'02 change
<i>Approx. N = 9400 15400 17100 17800 15500 15900 17500 17700 16300 15900 16000 15200 16300 16300 16700 15200 15000 15800 16300 15400 15400 14300 15400 15200 13600 12800 12800 12900</i>																													
Total	—	—	—	—	—	—	—	20.5	20.5	18.8	16.9	15.3	13.9	12.2	10.9	10.4	8.8	8.4	8.0	9.3	9.8	9.3	9.8	9.6	10.2	11.1	11.8	15.1	+3.3ss
Gender:																													
Male	—	—	—	—	—	—	—	10.7	10.6	9.2	9.0	6.9	6.4	4.9	4.3	4.3	3.0	4.3	3.2	2.5	3.5	3.7	4.9	4.3	4.0	4.9	6.2	8.1	+1.9
Female	—	—	—	—	—	—	—	29.6	30.0	27.5	24.4	23.2	21.1	18.8	17.2	16.7	14.2	12.2	12.3	15.0	15.1	14.1	14.6	15.4	15.7	17.2	15.6	20.0	+4.4ss
College Plans:																													
None or under 4 years	—	—	—	—	—	—	—	23.3	21.4	18.2	20.7	16.1	14.9	13.1	11.9	13.2	8.9	10.5	9.7	10.8	11.5	10.8	12.0	10.7	9.1	10.0	9.4	17.8	+8.4sss
Complete 4 years	—	—	—	—	—	—	—	17.5	19.0	18.8	14.7	15.0	13.3	11.7	10.9	9.7	8.6	8.0	7.3	9.3	9.3	8.6	9.2	10.1	10.4	11.5	11.6	13.8	+2.2
Region:																													
Northeast	—	—	—	—	—	—	—	19.1	18.5	18.4	16.5	14.9	14.3	10.5	10.4	11.5	5.7	6.3	7.6	8.6	8.2	10.1	8.1	8.6	8.6	8.0	12.8	16.7	+3.9
North Central	—	—	—	—	—	—	—	24.6	23.3	20.2	19.2	16.6	15.0	13.7	15.0	11.1	10.7	9.3	8.4	11.8	11.8	9.5	10.2	10.4	10.4	12.6	15.5	14.4	-1.2
South	—	—	—	—	—	—	—	18.2	19.2	19.6	14.9	13.9	13.1	12.0	9.3	10.0	9.0	7.7	9.2	8.9	10.8	9.4	11.5	10.1	11.2	12.9	9.9	16.7	+6.8sss
West	—	—	—	—	—	—	—	18.9	21.1	15.8	17.3	16.4	13.5	12.1	8.7	8.9	8.8	10.3	5.4	7.4	6.3	7.9	7.8	8.6	9.3	9.3	8.6	12.4	+3.7
Population Density:																													
Large MSA	—	—	—	—	—	—	—	19.7	18.7	17.3	17.1	15.0	13.0	12.1	10.3	7.4	7.7	7.4	7.3	8.5	10.7	8.5	9.4	9.5	9.0	8.3	12.3	13.9	+1.7
Other MSA	—	—	—	—	—	—	—	20.0	22.8	18.6	17.1	15.6	13.7	12.4	10.9	11.2	9.2	8.4	6.8	9.9	8.9	9.3	8.7	9.1	9.5	11.5	11.5	13.6	+2.1
Non-MSA	—	—	—	—	—	—	—	21.7	19.2	20.5	16.5	15.2	15.2	11.9	11.7	11.7	9.1	9.2	10.5	9.1	10.1	10.0	12.3	11.0	12.6	13.6	11.7	19.8	+8.0sss
Parental Education: <sup>a</sup>																													
(Low)																													
1.0-2.0	—	—	—	—	—	—	—	19.5	15.9	19.2	14.6	12.0	13.5	13.4	9.5	5.1	9.4	10.6	6.9	11.0	8.9	8.3	14.4	11.8	9.9	9.8	5.6	12.7	+7.1s
2.5-3.0	—	—	—	—	—	—	—	21.6	21.3	18.2	17.8	15.6	13.1	12.0	9.9	12.3	8.6	8.9	8.9	11.0	10.9	8.5	10.5	8.9	11.1	13.1	15.0	17.7	+2.6
3.5-4.0	—	—	—	—	—	—	—	20.6	20.2	20.6	18.0	16.6	14.5	11.5	11.8	9.2	8.2	7.9	7.8	10.6	11.5	9.7	8.8	9.9	10.5	11.6	14.1	15.6	+1.5
4.5-5.0	—	—	—	—	—	—	—	19.3	22.4	17.4	16.8	15.0	15.9	12.0	10.4	12.0	9.3	6.6	8.0	8.5	7.5	8.8	10.7	11.6	11.2	12.7	9.0	14.8	+5.9sss
5.5-6.0	—	—	—	—	—	—	—	21.0	22.3	19.1	17.1	15.7	11.6	13.6	13.4	12.2	8.5	8.2	6.2	5.3	9.2	8.4	9.4	9.6	7.4	7.4	7.9	8.5	+0.6
(High)																													
Race (2-year average): <sup>b</sup>																													
White	—	—	—	—	—	—	—	23.2	22.2	20.4	18.4	16.3	14.7	13.4	12.5	11.0	9.8	9.2	9.7	10.9	10.9	10.8	11.2	11.2	11.8	12.9	14.8	+1.9	
Black	—	—	—	—	—	—	—	6.6	8.1	6.4	5.5	7.5	6.9	4.3	2.9	3.5	3.0	4.5	6.1	5.3	4.3	5.3	4.9	4.2	5.5	6.5	5.5	-1.0	
Hispanic	—	—	—	—	—	—	—	11.6	12.6	14.8	10.8	7.8	7.9	9.6	9.8	5.6	4.6	7.1	7.1	7.5	7.0	8.2	9.3	9.8	10.0	9.1	13.2	+4.1s	

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error. See Table D-65 for the number of subgroup cases. See Appendix B for definition of variables in table. Data based on one of five forms in 1982-89; N is one-fifth of N indicated. Beginning in 1990, data based on one of six forms; N is one-sixth of N indicated.

<sup>a</sup>Parental education is an average score of mother's education and father's education reported on the following scale: (1) Completed grade school or less, (2) Some high school, (3) Completed high school, (4) Some college, (5) Completed college, (6) Graduate or professional school after college. Missing data were allowed on one of the two variables.

<sup>b</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**TABLE 10-2b**

**Stay-Awake Pills: Trends in Annual Prevalence of Use by Subgroups for Twelfth Graders**

	Percentage who used in last twelve months																											'01-'02 change	
	Class of:																												
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001		2002
	<i>Approx. N = 9400 15400 17100 17800 15500 15900 17500 17700 16300 15900 16000 15200 16300 16300 16700 15200 15000 15800 16300 15400 15400 14300 15400 15200 13600 12800 12800 12900</i>																												
Total	—	—	—	—	—	—	—	11.8	12.3	13.9	18.2	22.3	25.2	26.4	23.0	23.4	22.2	20.4	19.2	20.7	20.3	19.0	19.7	19.0	15.7	15.0	17.3	14.9	-2.4
Gender:																													
Male	—	—	—	—	—	—	—	12.8	13.8	15.4	19.7	22.3	25.5	27.6	24.8	22.3	22.3	20.9	19.7	20.3	19.7	18.2	17.4	19.5	14.5	14.0	17.8	13.9	-4.0
Female	—	—	—	—	—	—	—	10.0	10.5	12.5	17.0	22.2	25.0	25.2	21.7	24.5	22.0	20.2	17.6	20.4	20.1	18.7	21.0	18.0	15.9	15.9	16.5	14.6	-1.9
College Plans:																													
None or under 4 years	—	—	—	—	—	—	—	11.4	10.8	12.5	15.5	18.1	23.1	23.3	21.8	22.9	21.0	20.5	18.6	20.1	21.1	18.2	21.8	18.5	14.3	15.5	18.9	16.1	-2.8
Complete 4 years	—	—	—	—	—	—	—	10.5	12.6	14.0	20.4	24.9	26.5	27.5	24.1	24.1	22.3	21.0	18.7	20.6	19.7	18.3	19.1	18.4	15.1	14.7	16.5	14.0	-2.5
Region:																													
Northeast	—	—	—	—	—	—	—	9.6	9.5	11.9	18.2	20.4	26.4	23.8	18.4	22.0	18.3	18.2	20.2	21.2	18.4	22.5	19.1	17.6	16.0	10.2	14.7	13.9	-0.8
North Central	—	—	—	—	—	—	—	15.1	16.8	16.3	18.4	24.5	26.8	27.5	29.1	28.4	31.8	25.7	22.0	26.2	24.2	19.8	23.8	22.0	17.3	19.3	24.4	18.9	-5.5
South	—	—	—	—	—	—	—	9.6	10.7	12.0	13.3	19.8	20.9	25.6	20.4	20.6	16.1	17.6	18.7	20.2	18.8	17.5	20.1	18.8	15.6	13.8	15.4	13.5	-1.9
West	—	—	—	—	—	—	—	13.5	11.5	16.0	25.6	25.5	28.9	28.9	24.0	22.9	23.4	20.0	14.9	13.7	19.1	16.5	13.3	16.8	13.3	16.3	12.4	13.2	+0.8
Population Density:																													
Large MSA	—	—	—	—	—	—	—	11.5	11.1	12.2	17.7	19.0	25.6	23.2	20.9	19.0	16.7	15.2	16.7	18.4	18.9	14.4	15.5	15.3	9.6	11.0	15.7	11.9	-3.8
Other MSA	—	—	—	—	—	—	—	12.4	14.5	14.0	19.1	24.1	24.1	27.7	22.9	25.1	25.3	21.2	19.8	21.1	19.3	20.2	18.4	21.1	18.4	15.2	14.3	14.7	+0.4
Non-MSA	—	—	—	—	—	—	—	11.3	10.5	15.4	17.4	22.1	27.0	27.4	25.2	24.5	21.7	23.4	19.9	22.3	23.6	20.7	26.8	18.9	17.3	19.3	24.3	19.3	-5.1
Parental Education: <sup>a</sup>																													
(Low)																													
1.0-2.0	—	—	—	—	—	—	—	8.8	8.2	8.3	10.9	12.0	15.0	17.1	18.1	15.3	14.9	16.2	11.0	16.6	13.2	11.5	18.2	11.7	7.9	7.3	15.3	8.9	-6.4
2.5-3.0	—	—	—	—	—	—	—	10.6	10.1	13.9	15.5	19.5	22.8	22.5	21.6	23.2	20.2	22.8	19.0	18.1	18.1	19.0	21.0	16.5	13.4	15.1	17.1	13.4	-3.7
3.5-4.0	—	—	—	—	—	—	—	12.6	13.5	13.5	21.3	26.5	30.0	28.4	26.0	25.6	23.9	22.4	18.6	21.6	24.3	17.4	17.6	19.9	18.3	17.0	20.3	16.5	-3.7
4.5-5.0	—	—	—	—	—	—	—	13.2	15.3	16.1	24.0	23.7	29.9	30.3	24.0	28.0	25.1	20.0	21.1	24.4	20.4	23.2	20.2	20.3	15.6	16.7	16.2	14.9	-1.3
5.5-6.0	—	—	—	—	—	—	—	13.0	16.7	18.0	20.2	28.7	24.9	32.3	25.1	22.3	25.8	17.8	20.2	18.4	17.3	17.4	19.3	22.6	14.9	13.4	13.6	15.7	+2.2
(High)																													
Race (2-year average): <sup>b</sup>																													
White	—	—	—	—	—	—	—	13.6	15.0	18.7	23.7	27.7	30.4	29.8	27.7	27.4	25.8	24.0	23.7	23.9	23.3	23.1	23.2	20.7	18.2	19.9	19.5	-0.4	
Black	—	—	—	—	—	—	—	2.0	3.0	3.6	4.4	5.5	6.2	6.0	6.4	5.1	3.5	3.5	3.6	4.8	4.4	5.3	6.2	3.6	3.0	4.2	3.2	-1.0	
Hispanic	—	—	—	—	—	—	—	5.7	8.3	8.4	9.7	13.8	15.6	16.5	14.1	11.6	11.9	13.3	14.2	12.3	9.5	9.6	10.1	12.3	11.8	10.6	12.3	+1.7	

NOTES: Level of significance of difference between the two most recent classes:  $s = .05$ ,  $ss = .01$ ,  $sss = .001$ . '—' indicates data not available.

Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.

See Table D-65 for the number of subgroup cases. See Appendix B for definition of variables in table.

Data based on one of five forms in 1982–89; N is one-fifth of N indicated. Beginning in 1990, data based on one of six forms; N is one-sixth of N indicated.

<sup>a</sup>Parental education is an average score of mother's education and father's education reported on the following scale: (1) Completed grade school or less, (2) Some high school, (3) Completed high school, (4) Some college, (5) Completed college, (6) Graduate or professional school after college. Missing data were allowed on one of the two variables.

<sup>b</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**TABLE 10-2c**  
**Look-Alikes: Trends in Annual Prevalence of Use by Subgroups for Twelfth Graders**

Percentage who used in last twelve months																													
Class of:																													
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	'01-'02 change
<i>Approx. N = 9400 15400 17100 17800 15500 15900 17500 17700 16300 15900 16000 15200 16300 16300 16700 15200 15000 15800 16300 15400 15400 14300 15400 15200 13600 12800 12800 12900</i>																													
Total	—	—	—	—	—	—	—	10.8	9.4	9.7	8.2	6.9	6.3	5.7	5.6	5.6	5.2	5.4	6.2	6.0	6.8	6.5	6.4	5.7	5.0	5.8	7.1	6.6	-0.5
Gender:																													
Male	—	—	—	—	—	—	—	9.5	9.2	9.7	8.3	6.5	6.4	4.2	6.1	6.6	4.9	6.2	6.4	5.9	7.0	5.7	7.2	6.0	4.6	7.0	7.3	6.8	-0.5
Female	—	—	—	—	—	—	—	10.7	8.7	8.5	7.8	6.7	6.0	6.3	5.0	4.6	4.7	4.5	5.5	5.7	5.4	6.0	5.5	5.0	4.4	4.3	6.6	5.9	-0.7
College Plans:																													
None or under 4 years	—	—	—	—	—	—	—	13.6	11.9	11.2	10.0	10.0	8.1	7.0	8.0	7.9	7.2	4.4	7.6	7.0	7.5	7.0	10.1	6.2	5.2	8.4	9.9	8.7	-1.3
Complete 4 years	—	—	—	—	—	—	—	7.1	6.1	7.0	6.5	4.8	4.9	3.8	4.6	4.4	3.9	5.4	5.5	5.7	6.2	5.5	4.9	4.8	4.4	4.9	5.7	5.7	-0.1
Region:																													
Northeast	—	—	—	—	—	—	—	9.3	9.0	10.7	9.0	7.4	4.6	4.9	4.0	3.8	4.4	4.9	4.4	4.6	5.6	6.3	5.6	6.5	5.1	5.3	7.5	5.9	-1.6
North Central	—	—	—	—	—	—	—	14.5	12.3	10.9	9.0	7.6	7.6	7.3	8.5	7.3	8.2	7.1	8.4	8.7	8.5	7.9	7.7	6.2	4.8	6.8	8.4	7.3	-1.0
South	—	—	—	—	—	—	—	9.8	7.7	9.0	7.3	5.6	6.1	5.5	4.7	6.0	4.5	4.7	6.2	5.1	5.8	5.6	6.7	5.0	6.7	6.2	6.7	6.3	-0.4
West	—	—	—	—	—	—	—	7.4	7.9	7.6	7.7	7.7	6.9	4.7	4.6	4.4	3.1	4.4	4.6	5.0	7.3	6.3	5.1	6.0	1.9	4.7	5.8	6.9	+1.1
Population Density:																													
Large MSA	—	—	—	—	—	—	—	10.2	9.5	10.2	6.1	7.1	4.4	4.3	3.3	3.0	3.3	3.0	4.7	5.3	7.2	5.4	4.5	6.1	3.0	3.7	6.8	4.5	-2.2
Other MSA	—	—	—	—	—	—	—	10.8	10.0	9.4	9.2	6.3	6.4	6.4	5.9	6.0	6.0	4.7	7.3	6.0	6.0	5.4	4.8	6.2	5.7	6.2	6.2	7.3	+1.1
Non-MSA	—	—	—	—	—	—	—	11.2	8.4	9.6	8.6	7.8	8.2	5.9	7.2	7.3	5.4	8.7	5.5	6.7	7.6	9.2	11.7	4.3	5.9	7.6	9.4	8.2	-1.1
Parental Education: <sup>a</sup>																													
(Low)																													
1.0-2.0	—	—	—	—	—	—	—	9.8	7.2	9.9	9.0	6.1	5.7	6.3	4.6	3.1	6.6	4.3	4.9	8.2	6.5	3.2	7.0	3.3	4.7	5.7	5.2	8.5	+3.3
2.5-3.0	—	—	—	—	—	—	—	11.4	9.8	9.9	8.3	6.9	6.9	5.2	5.7	6.3	5.1	5.3	7.5	6.5	5.3	6.7	7.1	5.5	7.3	5.7	8.2	5.5	-2.7
3.5-4.0	—	—	—	—	—	—	—	10.3	9.5	9.6	8.8	8.0	6.3	5.7	5.9	5.1	6.6	6.5	4.4	9.5	5.4	7.4	5.0	3.4	5.2	6.8	7.6	+0.8	
4.5-5.0	—	—	—	—	—	—	—	10.4	8.3	6.1	5.9	5.9	6.7	4.5	5.4	5.9	4.7	4.0	5.6	7.1	4.9	6.7	5.8	6.2	5.0	7.5	7.2	5.6	-1.6
5.5-6.0	—	—	—	—	—	—	—	6.9	6.7	8.1	7.9	4.3	4.6	4.3	5.3	4.7	2.5	5.4	3.0	4.0	4.3	6.3	2.8	6.1	3.1	5.5	4.5	2.2	-2.3
(High)																													
Race (2-year average): <sup>b</sup>																													
White	—	—	—	—	—	—	—	10.9	10.3	9.8	8.3	7.1	6.3	6.1	6.4	6.2	6.1	6.6	7.0	7.2	7.1	7.6	7.4	6.0	5.9	7.0	7.2	+0.2	
Black	—	—	—	—	—	—	—	2.0	2.4	2.4	2.2	2.7	2.7	2.6	2.1	1.5	1.7	1.6	1.4	1.9	1.4	0.9	0.9	1.0	1.2	1.9	1.8	-0.1	
Hispanic	—	—	—	—	—	—	—	6.1	7.0	5.8	3.8	3.0	3.2	3.5	3.4	2.2	1.6	5.3	5.8	3.6	3.9	3.6	3.4	3.4	4.6	7.1	8.1	+1.0	

NOTES: Level of significance of difference between the two most recent classes:  $s = .05$ ,  $ss = .01$ ,  $sss = .001$ . '—' indicates data not available.

Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.

See Table D-65 for the number of subgroup cases. See Appendix B for definition of variables in table.

Data based on one of five forms in 1982-89; N is one-fifth of N indicated. Beginning in 1990, data based on one of six forms; N is one-sixth of N indicated.

<sup>a</sup>Parental education is an average score of mother's education and father's education reported on the following scale: (1) Completed grade school or less, (2) Some high school, (3) Completed high school, (4) Some college, (5) Completed college, (6) Graduate or professional school after college. Missing data were allowed on one of the two variables.

<sup>b</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**TABLE 10-3**  
**Percentage of Twelfth Graders in Each Category**  
**of an Illicit Drug Use Index Who Have Tried**  
**Various Over-the-Counter Stimulants, 2002**

(Entries are percentages)

	Lifetime Illicit Drug Use Groupings		
	<u>No Use</u>	Used Marijuana <u>Only</u>	Used Other Illicit <u>Drugs</u>
Their lifetime use of . . .			
Diet pills	9.2 <sup>a</sup>	17.1	44.9
Stay-awake pills	7.7	25.0	47.7
Look-alikes	2.3	6.4	26.2
<i>Approx. N =</i>	<i>950</i>	<i>470</i>	<i>560</i>

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>This means that, of those who have never used an illicit drug, 9.2 percent have used a diet pill at least once.

**TABLE 10-4**  
**Trends in Annual Prevalence of Use of Androstenedione and Creatine by Subgroups**  
**for Eighth, Tenth, and Twelfth Graders**

(Entries are percentages)

	2002			Androstenedione <sup>b</sup>									Creatine <sup>b</sup>								
	Approx. N <sup>a</sup>			8th Grade			10th Grade			12th Grade			8th Grade			10th Grade			12th Grade		
	8th	10th	12th	2001	2002	'01-'02 change	2001	2002	'01-'02 change	2001	2002	'01-'02 change	2001	2002	'01-'02 change	2001	2002	'01-'02 change	2001	2002	'01-'02 change
Total	15,100	14,300	12,900	1.1	1.2	+0.1	2.2	1.9	-0.3	3.0	2.5	-0.6	2.7	2.3	-0.4	7.9	7.6	-0.3	11.7	8.5	-3.2sss
Gender:																					
Male	7,000	6,900	5,800	1.3	1.7	+0.4	3.5	2.2	-1.3	5.3	4.7	-0.6	4.8	3.9	-0.9	14.7	13.1	-1.6	22.1	16.8	-5.3ss
Female	7,600	7,100	6,600	1.0	0.8	-0.2	0.9	1.6	+0.7	0.7	0.4	-0.3	0.9	0.9	0.0	1.7	2.1	+0.4	2.0	1.5	-0.6
College Plans:																					
None or under 4 years	1,300	2,000	2,400	4.2	5.0	+0.8	3.9	3.5	-0.4	4.3	4.0	-0.3	6.0	6.0	+0.1	10.3	10.3	0.0	11.7	9.3	-2.4
Complete 4 years	13,400	12,100	9,700	0.8	0.8	0.0	1.9	1.7	-0.2	2.5	2.1	-0.4	2.4	1.9	-0.5	7.5	7.1	-0.4	11.4	8.4	-3.1ss
Region:																					
Northeast	2,800	2,600	2,500	0.6	1.3	+0.7	2.1	1.8	-0.3	3.1	2.8	-0.4	1.4	2.1	+0.7	5.4	6.2	+0.8	10.9	9.1	-1.7
North Central	4,000	3,700	3,300	1.1	1.7	+0.7	1.7	1.4	-0.3	3.4	2.4	-1.0	3.4	2.7	-0.7	6.6	6.4	-0.1	12.4	8.1	-4.3s
South	5,400	5,100	4,300	1.6	1.0	-0.5	2.8	2.4	-0.4	2.8	2.6	-0.2	3.8	2.6	-1.2	10.8	9.1	-1.7	11.4	7.6	-3.8s
West	2,900	2,900	2,800	0.8	0.8	0.0	1.9	1.9	0.0	2.9	2.1	-0.9	1.2	1.7	+0.5	7.2	7.6	+0.4	11.8	9.9	-1.9
Population Density:																					
Large MSA	4,500	4,300	4,000	1.1	0.8	-0.3	2.6	1.4	-1.2	3.0	2.4	-0.7	2.3	2.3	-0.1	6.6	7.0	+0.4	10.2	7.7	-2.5
Other MSA	6,900	6,800	5,900	1.2	1.3	0.0	1.9	2.2	+0.4	3.3	2.0	-1.2	2.8	1.9	-0.9	8.1	7.5	-0.6	12.5	9.0	-3.5s
Non-MSA	3,700	3,200	3,000	0.9	1.7	+0.8	2.4	2.0	-0.4	2.7	3.4	+0.8	3.0	3.3	+0.4	9.1	8.5	-0.5	11.9	8.7	-3.2
Parental Education: <sup>c</sup>																					
1.0-2.0 (Low)	1,100	1,300	980	1.3	1.7	+0.4	3.6	3.4	-0.2	1.5	3.5	+2.0	3.7	2.6	-1.1	5.6	5.0	-0.7	8.0	8.2	+0.3
2.5-3.0	3,200	3,300	2,800	0.8	1.9	+1.1	1.7	1.9	+0.2	3.7	3.1	-0.6	1.8	2.7	+1.0	8.1	7.8	-0.3	11.8	8.6	-3.2
3.5-4.0	3,500	3,700	3,800	1.6	1.0	-0.6	3.4	1.7	-1.7s	2.9	2.7	-0.2	3.5	1.6	-1.9s	10.2	7.6	-2.5	13.0	8.5	-4.5sss
4.5-5.0	3,800	3,500	3,100	1.0	0.9	0.0	1.7	1.3	-0.4	3.2	2.0	-1.2	2.8	3.1	+0.3	7.1	8.8	+1.7	11.7	9.0	-2.6
5.5-6.0 (High)	2,100	1,700	1,500	1.2	0.9	-0.2	1.4	2.5	+1.1	1.9	1.4	-0.5	3.1	1.9	-1.2	7.1	7.9	+0.8	11.7	8.1	-3.6
Race (2-year average): <sup>d</sup>																					
White	17,600	18,000	16,300	—	1.1	—	—	1.7	—	—	3.0	—	—	2.7	—	—	8.4	—	—	11.2	—
Black	4,500	3,400	2,900	—	0.7	—	—	1.9	—	—	0.7	—	—	1.0	—	—	3.0	—	—	3.3	—
Hispanic	3,900	3,600	3,100	—	1.4	—	—	2.6	—	—	3.2	—	—	2.3	—	—	9.4	—	—	9.8	—

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001.

Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Subgroup Ns may vary depending on the number of forms in which the use of each drug was asked about.

<sup>b</sup>8th and 10th grades only: Data based on one of four forms; N is one-third of N indicated. 12th grade only: Data based on two of six forms; N is two-sixths of N indicated.

<sup>c</sup>Parental education is an average score of mother's education and father's education reported on the following scale: (1) Completed grade school or less, (2) Some high school, (3) Completed high school, (4) Some college, (5) Completed college, (6) Graduate or professional school after college. Missing data was allowed on one of the two variables.

<sup>d</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.



**TABLE 10-5**

**Daily Marijuana Use: Responses to Selected Questions by Subgroups, Twelfth Graders, 2002**

Q. <i>Thinking back over your whole life, has there ever been a period when you used marijuana or hashish on a daily, or almost daily, basis for at least a month?</i>	Total	Gender		4-Year College Plans		Region				Population Density		
		Male	Female	No	Yes	North East	North Central	South	West	Large MSA	Other MSA	Non-MSA
No	84.5	82.8	88.3	79.5	88.3	79.3	83.7	85.4	88.3	84.8	84.9	83.2
Yes	15.5	17.2	11.7	20.5	11.7	20.7	16.3	14.6	11.7	15.2	15.1	16.8
Q. <i>How old were you when you first smoked marijuana or hashish that frequently?</i>												
Grade 6 or earlier	1.8	1.8	1.1	2.5	1.0	2.7	0.8	2.3	1.4	2.4	1.1	2.4
Grade 7 or 8	5.0	6.3	2.9	7.4	3.6	6.4	6.2	4.1	3.9	4.0	5.4	5.7
Grade 9 (Freshman)	3.3	3.4	3.3	5.9	2.7	4.2	3.1	3.4	2.7	3.0	3.9	2.6
Grade 10 (Sophomore)	2.0	2.4	1.7	0.7	2.0	3.2	2.0	2.0	1.2	3.0	1.7	1.2
Grade 11 (Junior)	2.4	2.2	1.9	2.4	1.5	2.7	2.6	2.5	1.7	2.1	1.8	3.8
Grade 12 (Senior)	1.0	1.2	0.9	1.6	0.9	1.5	1.6	0.4	0.8	0.6	1.2	1.1
Never used daily	84.5	82.8	88.3	79.5	88.3	79.3	83.7	85.4	88.3	84.8	84.9	83.2
Q. <i>How recently did you use marijuana or hashish on a daily, or almost daily, basis for at least a month?</i>												
During the past month	5.5	6.5	3.8	8.2	3.6	6.9	7.0	5.1	3.2	4.4	6.6	5.0
2 months ago	1.5	2.2	0.8	2.4	0.9	2.0	1.3	1.3	1.7	1.8	1.4	1.4
3 to 9 months ago	2.4	2.9	1.8	3.4	2.1	4.3	1.7	2.0	2.2	2.5	1.5	3.9
About 1 year ago	2.1	1.8	2.0	3.0	1.4	2.7	2.2	1.6	1.9	2.3	1.3	3.1
About 2 years ago	2.4	1.9	2.8	2.1	2.4	2.4	2.3	3.4	1.2	2.2	2.9	1.9
3 or more years ago	1.6	2.0	0.6	1.4	1.3	2.4	1.7	1.2	1.5	2.1	1.4	1.4
Never used daily	84.5	82.8	88.3	79.5	88.3	79.3	83.7	85.4	88.3	84.8	84.9	83.2
Q. <i>Over your whole lifetime, during how many months have you used marijuana or hashish on a daily or near-daily basis?</i>												
Less than 3 months	3.9	3.7	3.6	3.7	3.1	4.9	4.7	3.6	2.5	4.5	3.2	4.3
3 to 9 months	3.2	4.1	2.3	3.9	2.8	4.7	2.5	2.7	3.5	2.7	2.8	4.6
About 1 year	1.6	1.0	1.7	1.2	1.3	2.3	1.3	2.2	0.5	1.8	1.6	1.4
About 1 and 1/2 years	1.2	2.0	0.4	1.3	1.0	1.8	1.4	1.2	0.7	1.3	1.5	0.7
About 2 years	1.9	1.8	1.9	2.1	1.8	1.1	3.3	1.3	1.9	2.6	2.1	0.6
About 3 to 5 years	2.7	3.5	1.2	6.0	1.3	4.8	2.4	2.0	2.3	1.8	3.3	2.9
6 or more years	1.0	1.2	0.5	2.3	0.5	1.2	0.7	1.7	0.3	0.5	0.7	2.3
Never used daily	84.5	82.8	88.3	79.5	88.3	79.3	83.7	85.4	88.3	84.8	84.9	83.2
	<i>Approx. N = 2,100</i>	<i>910</i>	<i>1,100</i>	<i>360</i>	<i>1,600</i>	<i>410</i>	<i>540</i>	<i>710</i>	<i>480</i>	<i>680</i>	<i>980</i>	<i>490</i>

NOTE: Entries are percentages that sum vertically to 100 percent.  
 SOURCE: The Monitoring the Future Study, the University of Michigan.

**TABLE 10-6a**

**Trends in Daily Use of Marijuana in Lifetime by Subgroups, Twelfth Graders<sup>a</sup>**

	Percentage ever using daily for at least a month																						'01-'02 change
	Class of:																						
	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002		
All seniors	20.5	16.8	16.3	15.6	14.9	14.7	12.8	11.5	10.0	9.0	8.4	9.6	11.3	12.1	15.7	18.8	18.0	17.9	17.0	18.0	15.5	-2.5	
Gender:																							
Male	20.1	18.1	17.2	17.7	16.6	16.2	14.8	12.7	10.6	10.5	8.3	10.7	13.3	12.9	18.7	19.7	19.5	18.5	18.8	20.3	17.2	-3.0	
Female	18.0	13.5	12.9	12.0	11.6	12.2	9.6	9.7	7.9	6.4	7.5	7.2	8.5	7.9	10.7	15.2	13.9	14.4	13.7	13.8	11.7	-2.1	
College Plans:																							
None or under 4 years	22.5	20.3	18.9	19.6	17.2	18.0	14.5	15.3	12.8	11.5	11.2	11.6	16.1	14.2	21.5	22.6	22.1	22.1	19.1	22.8	20.5	-2.3	
Complete 4 years	13.8	10.5	10.7	10.6	11.0	11.1	9.8	9.1	7.4	6.5	5.9	7.7	8.6	9.2	11.9	14.9	13.4	14.2	13.7	13.8	11.7	-2.1	
Region:																							
Northeast	25.1	20.4	24.1	20.9	21.5	17.0	13.1	14.6	10.4	10.3	8.7	12.0	12.2	12.8	21.3	24.6	22.7	17.9	19.8	23.4	20.7	-2.7	
North Central	21.1	15.9	12.8	16.3	11.3	12.7	10.3	13.4	10.8	8.4	8.0	9.3	11.0	13.6	14.6	16.5	16.1	14.3	13.8	18.4	16.3	-2.2	
South	15.7	12.7	14.0	8.9	11.3	11.9	10.9	8.1	8.7	7.4	5.9	8.3	11.8	11.2	12.7	14.9	15.6	19.1	14.7	12.7	14.6	+2.0	
West	20.8	21.4	17.6	18.5	18.3	19.7	19.0	12.3	11.0	11.3	13.4	10.4	10.2	10.6	17.0	23.0	20.6	20.4	21.9	21.2	11.7	-9.5ss	
Population Density:																							
Large MSA	23.8	20.0	19.4	18.1	17.0	16.7	14.0	10.6	8.3	7.2	8.4	8.6	10.3	13.9	15.3	18.8	18.0	16.3	18.4	19.7	15.2	-4.5	
Other MSA	20.3	18.2	16.6	16.0	14.9	15.0	14.9	12.4	11.7	11.1	8.9	10.2	13.6	11.3	18.2	20.1	19.7	19.2	18.3	17.5	15.1	-2.4	
Non-MSA	17.9	12.6	13.2	12.8	13.2	12.2	7.6	10.4	8.2	7.1	7.6	9.6	8.4	11.2	11.6	16.2	14.4	17.1	13.0	17.1	16.8	-0.3	

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001.  
Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Data based on one form. The total N each year for 1982–89 is approximately 3,300. The total N each year for 1990–98 is approximately 2,600. Beginning in 1999, the total N each year is approximately 2,200.

**TABLE 10-6b**

**Trends in Daily Use of Marijuana Prior to Tenth Grade by Subgroups, Twelfth Graders<sup>a</sup>**

	Percentage reporting first such use prior to tenth grade																				'01-'02 change	
	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001		2002
All seniors	13.1	11.1	10.9	8.8	8.5	8.9	7.8	7.6	6.7	6.4	5.6	5.2	5.5	5.5	7.8	9.7	10.1	10.7	10.8	11.4	10.1	-1.3
Gender:																						
Male	12.9	12.1	11.8	9.8	8.7	10.2	8.4	8.4	6.9	7.4	5.6	5.5	6.1	5.8	9.6	9.6	11.4	10.0	10.9	11.9	11.5	-0.3
Female	11.5	8.3	8.0	6.5	6.6	7.1	6.6	6.0	4.9	4.4	5.0	4.1	4.4	3.4	4.9	8.1	8.0	8.8	9.0	9.3	7.3	-2.1
College Plans:																						
None or under 4 years	14.2	13.5	12.3	11.8	10.7	11.4	11.0	11.6	9.0	8.7	7.8	6.3	6.7	6.7	11.0	11.0	16.9	12.2	12.7	15.1	15.8	+0.7
Complete 4 years	8.2	6.5	6.6	5.5	5.2	6.4	5.3	5.1	4.6	4.3	3.8	4.2	4.4	4.2	5.8	7.9	7.1	8.1	7.9	8.5	7.3	-1.1
Region:																						
Northeast	17.3	11.9	17.2	12.9	10.3	10.3	9.0	10.7	6.5	8.2	4.8	6.3	5.2	6.6	8.3	13.3	12.7	8.8	13.2	13.8	13.3	-0.6
North Central	13.3	12.4	8.4	9.1	7.3	7.7	6.0	7.6	6.7	4.9	4.7	5.5	5.8	6.2	8.9	8.2	9.6	7.8	8.3	9.9	10.1	+0.2
South	9.3	8.3	8.5	5.0	6.4	7.4	6.3	5.4	6.2	5.1	4.4	4.3	6.6	4.5	5.8	7.5	8.0	13.2	8.8	9.2	9.8	+0.6
West	12.6	13.9	12.1	8.9	11.2	11.7	11.9	8.1	8.0	8.6	9.8	5.1	3.2	5.0	10.1	12.3	12.1	11.6	14.6	15.3	8.0	-7.2s
Population Density:																						
Large MSA	15.6	13.7	12.4	12.0	9.6	11.8	8.1	6.0	5.9	5.4	5.7	5.5	4.6	6.0	9.2	10.0	9.3	9.7	12.2	12.7	9.4	-3.3
Other MSA	12.5	12.0	11.5	8.3	8.4	8.8	9.6	8.1	8.1	7.7	5.8	5.3	6.9	5.5	8.3	9.8	11.4	11.4	12.0	11.8	10.4	-1.5
Non-MSA	11.7	8.2	8.5	6.6	7.6	6.4	4.3	7.6	4.3	5.3	5.3	4.8	4.2	4.8	5.6	9.4	8.6	10.8	7.2	9.2	10.7	+1.5

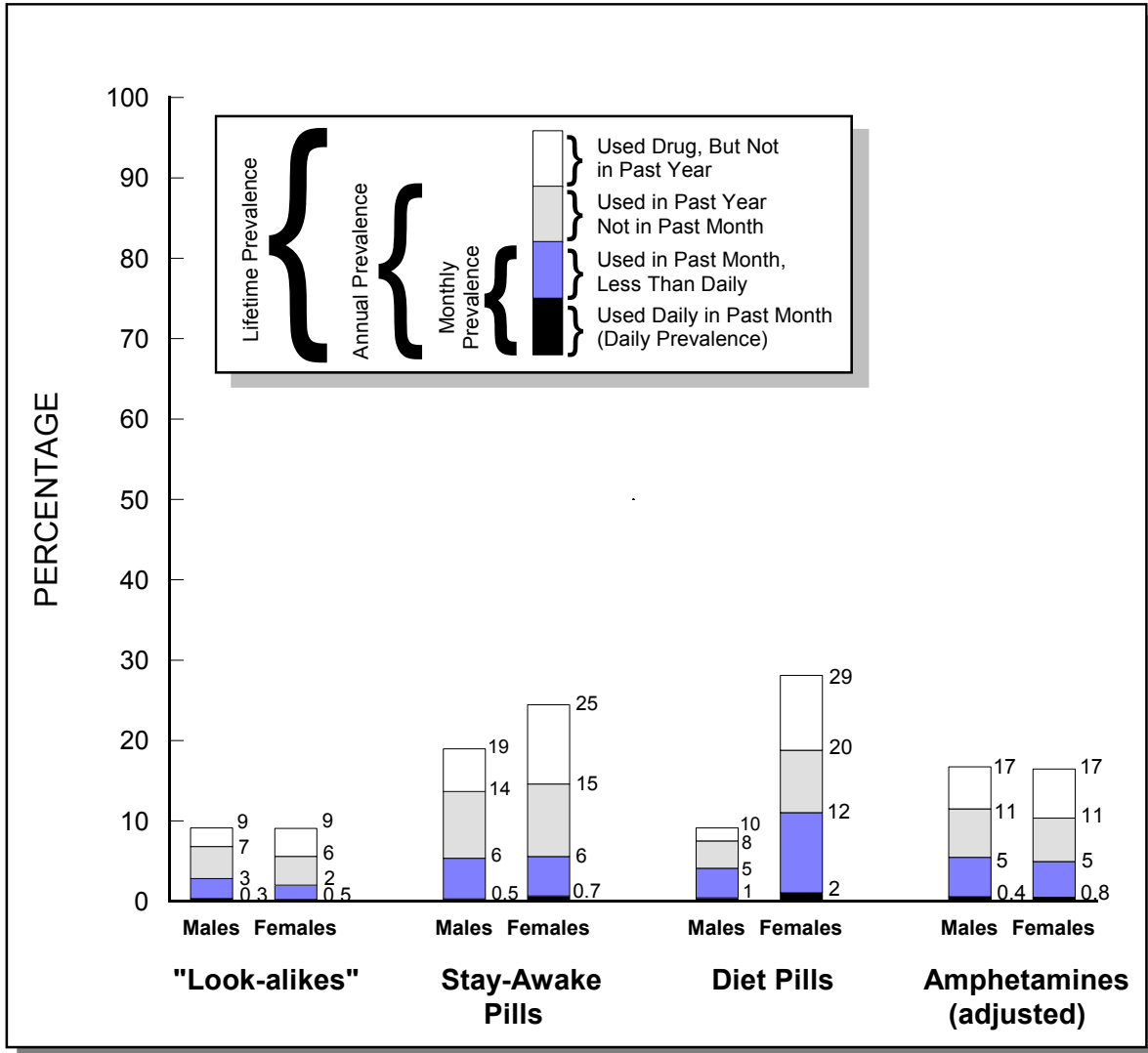
NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001.  
Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Data based on one form. The total N each year for 1982–89 is approximately 3,300. The total N each year for 1990–98 is approximately 2,600. Beginning in 1999, the total N each year is approximately 2,200.

FIGURE 10-1

**Prevalence and Recency of Use, by Gender**  
**Amphetamines and Nonprescription Stimulants**  
 Twelfth Graders, 2002



## Appendix A

### PREVALENCE AND TREND ESTIMATES ADJUSTED FOR ABSENTEES AND DROPOUTS

It is reasonable to ask whether the prevalence and trend estimates derived from twelfth graders accurately reflect the reality that pertains to all young people in the same class or age cohort, *including* those who have dropped out of school by senior year. Because this question was raised in the first decade of the study, in 1985 we published an extensive chapter addressing this question in a volume in the NIDA Research Monograph series.<sup>101</sup> In the years since, we have continued to estimate the degree to which the results presented in the present monograph series, based on high school seniors only, accurately represent the entire class cohort. In this appendix we summarize the main points relevant to this issue of sample coverage.

First, it should be noted that two segments of the entire class/age cohort are missing from the data collected each year from seniors: (a) those who are still enrolled in school but who are absent the day of data collection (the “absentees”) and (b) those who have left school and will not complete high school (the “dropouts”). The absentees constitute virtually all of the nonrespondents shown in the response rate given in Table 3-1, chapter 3, of this volume (since refusal rates are negligible) or about 17% of all seniors (or 14% of the class/age cohort). Based on our review of available Census data, dropouts account for approximately 15% of the class/age cohort.

The methods we used to estimate the prevalence rates for these two missing segments are summarized briefly here. Then, the effects of adding these two segments to the calculation of the overall prevalence rates for two important drug classes are presented, along with the impact on the trend estimates. Two illicit drugs have been chosen for illustrative purposes: marijuana, the most prevalent of the illicit drugs, and cocaine, one of the more dangerous and less prevalent drugs. Estimates for high school seniors are presented for both lifetime and 30-day prevalence for each drug.

### CORRECTIONS FOR LOWER GRADE LEVELS

Before estimates of corrections for seniors are discussed, it should be noted that the twelfth grade represents the “worst case” in terms of underestimation. Rates of both dropping out and absenteeism are lower for eighth and tenth grades than for twelfth grade. With respect to dropping out, only a very few members of an age cohort have ceased attending school by grade 8, when most are age 13 or 14. In fact, Census data suggest that less than 1% would have dropped out at this stage. Most tenth graders are aged 15 or 16, and Census data indicate that

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<sup>101</sup>Johnston, L. D., & O'Malley, P. M. (1985). Issues of validity and population coverage in student surveys of drug use. In B. A. Rouse, N. J. Casual, & L. G. Richards (Eds.), *Self-report methods of estimating drug use: Meeting current challenges to validity* (NIDA Research Monograph No. 57 (ADM) 85-1402). Washington, DC: U.S. Government Printing Office.

only a small proportion of them (less than 5%) would have dropped out by then.<sup>102</sup> Thus, any correction for the missing dropouts should be negligible at eighth grade and quite small at tenth grade.

Regarding absentees, Table 3-1, presented earlier, shows that while absentees comprise 17% of the twelfth graders who should be in school, they comprise only 15% of tenth graders and 9% of eighth graders in 2002. Thus, the eighth- and tenth-grade change in prevalence estimates that would result from corrections for this missing segment also would be considerably less than for twelfth graders.

In sum, the modest corrections in estimates of substance use rates, which we show next to result from the corrections for dropouts and absentees at the twelfth-grade level, set outer limits for what would be found at eighth and tenth grade. In fact, it is clear that the corrections would be considerably smaller at tenth grade and far smaller at eighth grade. Since the corrections described for twelfth graders turn out to be modest ones, we have not undertaken comparable corrections for eighth and tenth graders.

## **THE EFFECTS OF MISSING ABSENTEES**

To be able to assess the effects of excluding absentees on the estimates of twelfth-grade drug use, we included a question that asks students how many days of school they had missed in the previous four weeks. Using this variable, we can place individuals into different strata as a function of how often they tend to be absent from school. For example, all students who had been absent 50% of the time could form one stratum. Assuming that absence on the particular day of the administration is a fairly random event, we can use the actual survey participants in this stratum to represent all students in their stratum, including the ones who happen to be absent that particular day. By giving them a double weight, they can be used to represent both themselves and the other 50% of their stratum who were absent that day. Those who say they were in school only one third of the time would get a weight of three to represent themselves plus the two thirds in their stratum who were not there, and so forth. Using this method, we found that absentees as a group have appreciably higher-than-average usage levels for all licit and illicit drugs. *However, looking at 1983 data, we found that the omission of absentees did not depress any of the prevalence estimates in any of the drugs by more than 2.7 percentage points, because they represent such a small proportion of the total target sample.* Considering that a substantial proportion of those who are absent likely are absent for reasons unrelated to drug use—such as illness and participation in extracurricular activities—it may be surprising to see even these differences. In any case, from the point of view of policy or public perceptions, the small “corrections” would appear to be of little or no significance. (The correction in 1983 across all 13 drugs in lifetime prevalence averaged only 1.4 percentage points.) Further, such

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<sup>102</sup>According to the *Statistical Abstract of the United States 1998* (p. 168), in 1996 the proportion of the civilian non-institutionalized population of the United States enrolled in school is 97.7% among 7–13-year-olds and 98.0% among 14–15-year-olds. It drops to 92.8% for 16–17-year-olds combined, but there is probably a considerable difference between age 16 and age 17 because state laws often require attendance through age 16. Eighth graders in the spring of the school year are mostly (and about equally) 13 and 14 years old; while tenth graders are mostly (and about equally) 15 and 16 years old. These data, then, would suggest that dropouts are no more than 0.8% of eighth graders and 4.0% of tenth graders. U.S. Department of Commerce. (1998). *Statistical Abstract of the United States 1998: The National Data Book*. (118th ed.). Washington, DC: Bureau of the Census.

corrections should have virtually no effect on cross-time trend estimates unless the rate of absenteeism was changing appreciably; and we find no evidence in our data that it has. Put another way, the presence of a slight underestimate that is constant across time should not influence trend results. Should absentee rates start changing substantially, then it might be argued that such corrections should be presented routinely.

## THE EFFECTS OF MISSING DROPOUTS

Unfortunately, we cannot derive corrections from data gathered from seniors to impute directly the prevalence rates for dropouts, as we did for absentees, since we have no completely appropriate stratum from which we have sampled. We believe, based on our own previous research as well as the work of others, that dropouts generally have prevalence rates for all classes of drugs substantially higher than the in-school students. In fact, the dropouts may be fairly similar to the absentees.

We have consistently estimated the proportion who fail to complete high school to be approximately 15%; Figure A-1 displays the high school completion rate for the years 1972 through 2002 based on Census data. As the figure indicates, completion rates (and the complement, dropout rates) have been quite constant over this interval for persons 20-24 years old.<sup>103</sup> (Younger age brackets are less appropriate to use because they include some young people who are still enrolled in high school.) Monitoring the Future probably covers some small proportion of the 15%, since the survey of seniors takes place a few months *before* graduation and not everyone will graduate. On the other hand, perhaps 1% to 2% of the age group that Census shows as having a diploma get it through a General Equivalency Degree and thus would not be covered by Monitoring the Future. (Elliott and Voss reported this result for less than 2% of their sample in their follow-up study of 2,617 ninth graders in California who were followed through their high school years.<sup>104</sup>) So these two factors probably cancel each other out. Thus, we use 15% as our estimate of the proportion of a class cohort not covered.

### Extrapolating to Dropouts From Absentees

To estimate the drug usage prevalence rates for this group, we have used two quite different approaches. The first was based on extrapolations from seniors participating in this study. Using this method, we developed estimates under three different assumptions: that the difference between dropouts and the participating seniors in the study was equivalent to (a) the difference between absentees and the participating seniors, (b) 1.5 times that difference, and (c) twice that difference. The last assumption we would consider rather extreme.

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<sup>103</sup>U.S. Bureau of the Census (various years). *Current population reports, Series P-20*, various numbers. Washington, DC: U.S. Government Printing Office.

<sup>104</sup>Elliott, D., & Voss, H. L. (1974). *Delinquency and dropout*. Lexington, MA: D.C. Heath-Lexington Books.

The second general method involved using the best national data then available on drug use among dropouts—namely the National Household Surveys on Drug Abuse (NHSDA).<sup>105</sup> While these surveys have rather small samples of dropouts in the relevant age range in any given year, they at least should provide unbiased estimates for dropouts still in the household population.

Using the first assumption—that dropouts are just like absentees—we found that no prevalence rate was changed by more than 5 percentage points over the estimate based on 1983 seniors only, even with the simultaneous correction for both absentees and dropouts. (The method for calculating prevalence rates for the absentees is the one described in the previous section.) The largest correction in 1983 involved marijuana, with lifetime prevalence rising from just under 60% to 64%. Even under the most extreme assumption—which results in exceptionally high prevalence rates for dropouts on all drugs, for example 90% lifetime prevalence for marijuana—the overall correction in any of the prevalence figures for any drug remained less than 7.5 percentage points. Again, marijuana showed the biggest correction (7.5% in annual prevalence, raising it from 46% uncorrected to 54% with corrections for both absentees and dropouts). As we would have expected, the biggest *proportional* change occurred for heroin, since it represents the most deviant end of the drug-using spectrum and thus usually would be most associated with truancy and dropping out.

### **Extrapolating From the Household Surveys**

The second method of estimating drug use among dropouts involved comparing the household survey data on dropouts with the data from those remaining in school. We originally conducted secondary analyses of the archived data from the 1977 and 1979 National Household Surveys (NHSDA). (Analyses using more recent NHSDA data are shown in the next section.) Analyses were restricted to the age range 17 to 19 years old, since about 95% of the Monitoring the Future seniors fall in this range. Of course, the number of cases is small. The 1977 NHSDA survey included only 46 dropouts and 175 enrolled seniors in this age group. In the 1979 survey, 92 dropouts and 266 seniors were included.

For marijuana, the household survey data estimated differences between dropouts and seniors at a level at or below the *least* extreme assumption made in the previous method (in which dropouts are assumed to have the same drug-use levels as absentees). While reassuring to the authors of the present report, we must admit that we believe these household samples underrepresented the more drug-prone dropouts to some degree. Thus we concluded that estimates closer to those made under the second assumption in the previous method may be closer to reality—that is, that dropouts are likely to deviate from participating seniors by 1.5 times the amount that absentees deviate from them.

We should note that there are a number of reasons for dropping out, many of which bear no relationship to drug use, including economic hardship in the family and certain learning disabilities and health problems. At the national level, the extreme groups such as those in jail or

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<sup>105</sup>Fishburne, P. M., Abelson, H. I., & Cisin, I. (1980). *National survey on drug abuse: Main findings, 1979* (NIDA (ADM) 80-976). Washington, DC: U.S. Government Printing Office; Miller, J. D., et al. (1983). *National survey on drug abuse: Main findings, 1982* (NIDA (ADM) 83-1263). Washington, DC: U.S. Government Printing Office. See also Substance Abuse and Mental Health Services Administration. (1995). *National Household Survey on Drug Abuse: Main Findings 1992*. (DHHS Publication No. (SMA) 94-3012). Rockville, MD: Substance Abuse and Mental Health Services Administration.



without a permanent place of residence are undoubtedly very small as a proportion of the total age groups and probably even as a proportion of all dropouts. Thus, regardless of their prevalence rates, they would be unable to move the overall prevalence estimates by a very large proportion except in the case of the most rare events—in particular, heroin use. We do believe that in the case of heroin use—particularly regular use—we are most likely unable to get a very accurate estimate even with the corrections used in this report. The same may be true for crack cocaine and PCP. For the remaining drugs, we conclude that our estimates based on participating seniors, though somewhat low, are not bad approximations for the age group as a whole.

### **Effects of Omitting Dropouts in Trend Estimates**

Whether the omission of dropouts affects the estimates of trends in prevalence rates is a separate question, however, from the degree to which it affects absolute estimates at a given point in time. The relevant issues parallel those discussed earlier regarding the possible effects on trends of omitting the absentees. Most important is the question of whether the rate of dropping out has been changing in the country, since a substantial change would mean that seniors studied in different years would represent noncomparable segments of the whole class/age cohort. Fortunately for the purposes of this study, at least, the official government data provided in Figure A-1 indicate a quite stable rate of dropping out since 1972.

Since no sound evidence appears for an appreciable dropout rate change, the only reason for seniors' trend data to deviate from trends for the entire class cohort (including dropouts) would be if the constant proportion of dropouts showed trends that differed from senior trends; even then, because of their small numbers, dropouts would have to show dramatically different trends to change the whole age group trend. No hypothesis offered for such a differential shift among dropouts has been convincing, at least to these authors.

One hypothesis occasionally voiced was that more teens were being expelled from school, or voluntarily leaving school, because of their drug use; and that this explained the downturn in the use of many drugs being reported by the study in the 1980s. However, it is hard to reconcile this hypothesis with the virtually flat (or, if anything, slightly declining) dropout rates over the period displayed in Figure A-1, unless one posits a perfectly offsetting tendency for more completion among those who are less drug-prone—hardly a very parsimonious explanation. Further, the reported prevalence of some drugs remained remarkably stable throughout those years of the study (e.g., alcohol and opiates other than heroin) and the prevalence of others rose (cocaine until 1987, and amphetamines until 1981). These facts are not very consistent with the hypothesis that there had been an increased rate of departure by the most drug-prone. Certainly more teens leaving school in the 1980s had drug problems than was true in the 1960s. (So did more of those who stayed in.) However, they still seem likely to be very much the same segment of the population, given the degree of association that exists between drug use and deviance and problem behaviors of various sorts.

## **MORE RECENT UPDATE ON CORRECTIONS FOR DROPOUTS**

We subsequently looked at additional data regarding the effects of dropout exclusion. One additional source of information is a special report from the 1988 National Household Survey on Drug Abuse.<sup>106</sup> This report compared selected drug use rates for 16- to 17-year-old respondents who were classified as currently enrolled in school or as having dropped out of school. The authors of that report concluded, “The percentage of youth aged 16 and 17 who reported use of any illicit drug, marijuana, cocaine, and alcohol did not differ significantly among dropouts and those currently enrolled in school” (p. 22). Differences in illicit drug use between high school graduates and dropouts were also slight among 21- to 25-year-olds.

The authors noted that their findings appeared somewhat contrary to popular conceptions, as well as to some other research. Moreover, they reported that preliminary data for 20- to 34-year-olds from the 1990 NHSDA showed higher rates of cocaine and marijuana use among dropouts. The authors conjectured that perhaps differences between dropouts and graduates emerge after age 25, when more young adults have finished college. They also noted that other variables such as race, ethnicity, and socioeconomic status may confound the dropout versus graduate comparison. An additional problem was that, prior to the 1991 survey, the NHSDA did not include individuals who did not live in households; perhaps the more deviant dropouts were overrepresented in the excluded groups.

Subsequently, we have examined data from the 1991 National Household Surveys on Drug Abuse. Specifically, we obtained estimated prevalence rates for two key illicit drugs, marijuana and cocaine, among dropouts aged 16-18. Table A-1 indicates the lifetime and monthly prevalence rates for Monitoring the Future seniors and for NHSDA seniors and NHSDA dropouts.

As can be seen, the 1991 NHSDA dropouts aged 16-18 had distinctly higher cocaine and marijuana use than the NHSDA seniors and the 1991 MTF seniors. (This result is contradictory to the results from the earlier report based on 1988 data. The relatively small numbers of dropouts make definitive statements difficult.) As discussed earlier, however, the relatively small proportion of the population who are dropouts reduces the impact that their higher prevalence rates have on overall population estimates.

Table A-2 compares the total population prevalence estimates derived using two quite different methods discussed here. The first method shows the estimates that result when we use the method we previously described (which provided the data shown in Figure A-2), in which the prevalence rate among dropouts is assumed to be higher than seniors present by 1.5 times the difference between seniors present and seniors absent. Column 2 in Table A-2 is calculated by reweighting the data for absenteeism and calculating the estimated prevalence among absentees. The prevalence among dropouts (column 4) is estimated by assuming that they differ from seniors present by a factor 1.5 times greater than the difference between seniors present and seniors absent. The data in columns 1 and 2 are combined in appropriate proportion to derive

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<sup>106</sup>National Institute on Drug Abuse. (1991). “Drug use among youth: Findings from the 1988 National Household Survey on Drug Abuse.” (DHHS Publication No. (ADM) 91-1765). Rockville, MD: National Institute on Drug Abuse.

estimated prevalence among seniors present plus absentees (column 3). The data in columns 1, 2, and 4 are then combined in appropriate proportions to derive estimated prevalence rates for the entire class cohort (shown in column 6). (For 1991, the percentage of dropouts is estimated at 15% and the percentage of seniors absent is 15.9% [based on data collected in participating schools]; these figures result in the following distribution for the *total* age cohort: seniors present, 71.5%; seniors absent, 13.5%; and dropouts, 15%.)

The second method for estimating prevalence rates for dropouts (column 9) and the entire class cohort (column 10) is based on the estimated prevalence from MTF seniors present and seniors absent; it then adjusts for the missing dropout segment by assuming that the difference between NHSDA seniors versus NHSDA dropouts (column 8) is the best estimate of the difference between dropouts and stay-ins (column 10).

The data in columns 6 and 7 are prevalence rates reported among the 1991 NHSDA seniors and for dropouts aged 16-18, and column 8 shows the algebraic difference. This absolute “bias” is treated as an estimate of the difference between seniors (present plus absent) versus dropouts. This “bias” is then applied to the estimated prevalence based on MTF data of seniors present plus absent (column 3) to derive an estimate of the prevalence among dropouts (column 9). These estimates are higher than the NHSDA estimates because MTF estimates for non-dropouts are higher than the NHSDA estimates. Finally, the data in columns 3 and 9 are combined in appropriate proportion to derive estimates presented in column 10 for the entire cohort.

Note that the estimated prevalence rates among dropouts based on NHSDA data are not very different from the estimates derived using the “1.5” factor. (Compare columns 9 and 4.) Consequently, the “Total” estimates given in column 10 turn out to be highly similar to the “Total” estimates in column 5. This similarity suggests that the estimates of corrections for dropouts that we have been providing, based on earlier data, are probably quite reasonable. In fact, based on all of the NHSDA data, they may actually be conservatively high.

Finally, an additional piece of information relative to the comparison of drug use rates among students who stay in school versus dropouts comes from Fagan and Pabon (1990),<sup>107</sup> who report some comparison data between high school students and dropouts from six inner-city neighborhoods. About 1,000 male students and 1,000 female students were compared with 255 male dropouts and 143 female dropouts. Although dropouts were generally more delinquent, and more involved with substance use, there was also a great deal of variability by specific class of substances. As would be generally expected, marijuana use was lower among students, compared to dropouts. Psychedelic use, on the other hand, was *higher* among students than among dropouts. Use of tranquilizers and barbiturates was also higher among students. Amphetamine use was lower among male students, but higher among female students, compared to same-sex dropouts. Similarly, cocaine use was lower among male students, but higher among female students, compared to dropouts. Students of both genders reported more heroin use than did dropouts. Inhalant use did not differ significantly between students and dropouts.

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<sup>107</sup>Fagan, J. & Pabon, E. (1990). Contributions of delinquency and substance use to school dropout among inner-city youths. *Youth & Society*, 21, 306-354.

Overall, the data indicate some variation, depending on the class of drug. In fact, heroin use surprisingly was higher among students. The study shows that the usual assumption that dropouts invariably use drugs more than students is not always true.

## **SUMMARY AND CONCLUSIONS**

In sum, while we believe that the prevalence of drug use for the cohort at large is somewhat underestimated, due to the omission of dropouts from the universe of the study, we think that the degree of underestimation is rather limited for all drugs (with the possible exceptions of heroin, crack, and PCP) and, more importantly, that trend estimates have been rather little affected. Short of having good trend data gathered directly from dropouts, we cannot close the case definitively. Nevertheless, we think that the available evidence argues strongly against alternative hypotheses—a conclusion that was also reached by the members of the 1982 NIDA technical review on this subject:<sup>108</sup>

The analyses provided in this report show that failure to include these two groups (absentees and dropouts) does not substantially affect the estimates of the incidence and prevalence of drug use.

## **EXAMPLES OF REVISED ESTIMATES FOR TWO DRUGS**

Figure A-2 provides the prevalence and trend estimates of marijuana and cocaine, for both the lifetime and 30-day prevalence periods, showing (a) the original estimates based on *participating seniors* only; (b) the empirically derived, revised estimates based on *all seniors*, including the absentees; and (c) estimates for the *entire class/age cohort*. The last estimate was developed using the assumption judged to be most reasonable—namely that the prevalence rate for dropouts differs from the prevalence rate for participating seniors by 1.5 times the amount that the prevalence rate for absentees does. *Estimates were calculated separately for each year, thus taking into account any differences from year to year in the participation or absentee rates.* The dropout rate was taken as a constant 15% of the age group across all years, based on Census estimates.

As Figure A-2 illustrates, any difference in the slopes of the trend lines between the original and revised estimates is extremely, almost infinitesimally, small. The prevalence estimates are higher, of course, but not dramatically so, and certainly not enough to have any serious policy implications. As stated earlier, the corrections for eighth- and tenth-grade samples should be considerably less than for twelfth grade, and there is certainly no reason to think that absentee or dropout rates at those levels have changed since 1991 in any way that could have changed their trend stories. Therefore, we have confidence that the trend stories that have appeared for the in-school populations represented in this study are very similar to the trend stories that would pertain if the entire age cohorts had been the universes from which we sampled.

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<sup>108</sup>Clayton, R. R. & Voss, H. L. (1982). *Technical review on drug abuse and dropouts*. Rockville, MD: National Institute on Drug Abuse.

**TABLE A-1**  
**Comparison of 1991 Monitoring the Future Seniors, NHSDA Seniors,**  
**and NHSDA Dropouts**

	<b>MTF Seniors</b>	<b>NHSDA Seniors</b>	<b>NHSDA Dropouts 16-18</b>
Marijuana			
Lifetime	36.7	31.9	60.7
30-Day	13.8	11.6	21.0
Cocaine			
Lifetime	7.8	8.6	20.0
30-Day	1.4	1.3	2.3

**TABLE A-2**  
**Estimated Prevalence Rates for Marijuana and Cocaine, 1991, Based on Data From**  
**Monitoring the Future and The National Household Survey on Drug Abuse**

	Monitoring the Future					NHSDA			Combined Approach	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Seniors Present	Seniors Absent	Seniors Absent & Present	Dropouts	Total	Seniors	Dropouts (Ages 16-18)	Difference	Dropouts	Total
<b>Marijuana</b>										
Lifetime	36.7	49.9	38.8	56.5	41.4	31.9	60.7	28.8	67.6	43.1
30-Day	13.8	22.0	15.1	26.1	16.7	11.6	21.0	9.4	24.5	16.5
<b>Cocaine</b>										
Lifetime	7.8	15.3	9.0	19.1	10.3	8.6	20.0	11.4	20.4	10.7
30-Day	1.4	2.7	1.6	3.3	1.9	1.3	2.3	1.0	2.6	1.8

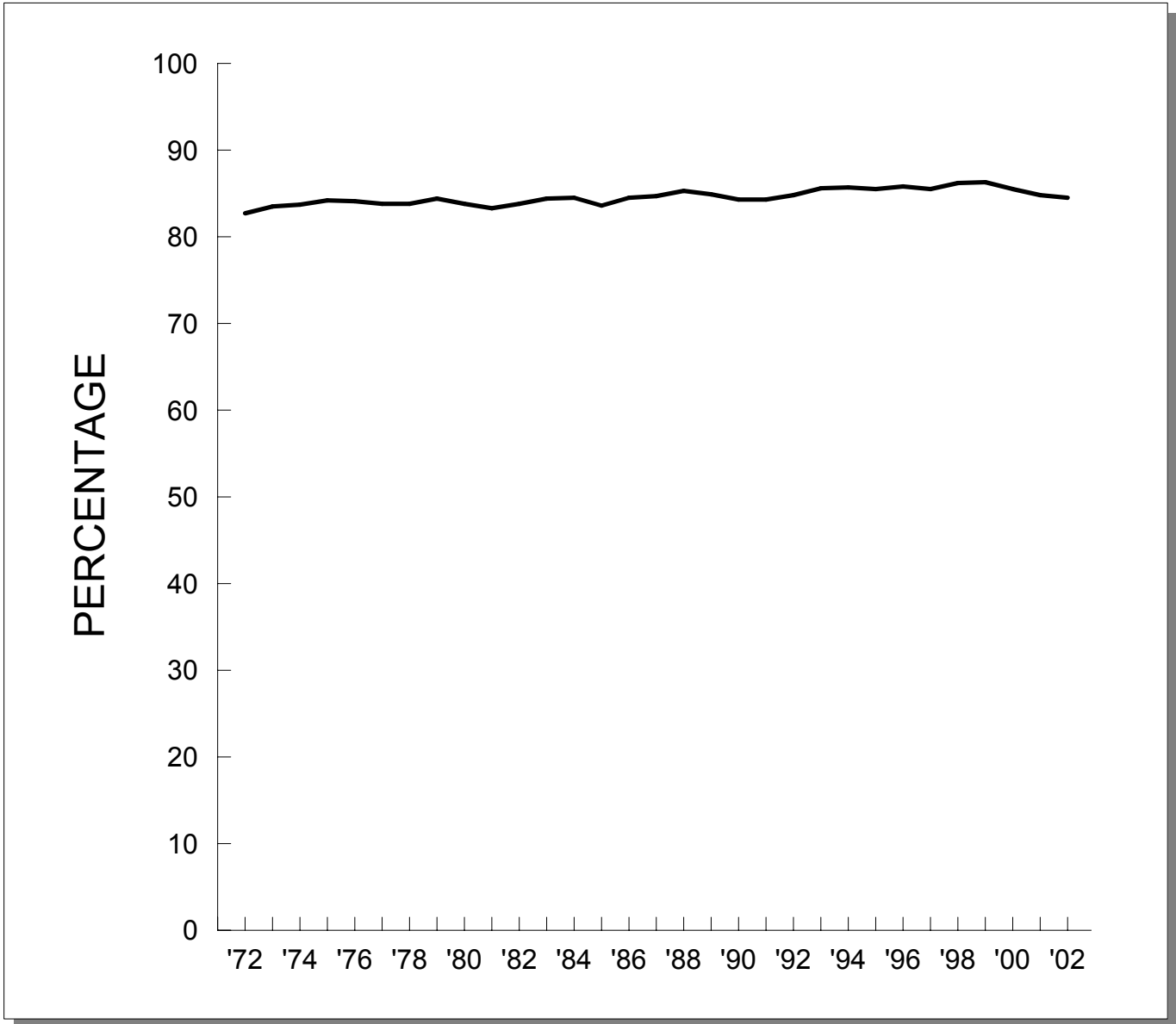
NOTES: The entries in columns are as follows:

- (1) Estimates based on all MTF seniors who completed questionnaires.
- (2) Estimated prevalence rates among seniors who were absent (using data from seniors who were present, as explained in text).
- (3) Estimated prevalence rates among seniors present plus seniors who were absent.
- (4) Estimated prevalence rates among dropouts, based on assumptions described in text.
- (5) Estimated prevalence rates among seniors present, seniors who were absent, and same-age dropouts.
- (6) Estimates based on all NHSDA respondents who were high school seniors.
- (7) Estimates based on all NHSDA respondents, 16-18 years old, who were not attending school and had not graduated.
- (8) Difference between columns 6 and 7, that is, the difference between all NHSDA seniors and dropouts; this is considered a valid estimate of the population difference between seniors and dropouts.
- (9) Sum of columns 3 and 8, combining MTF estimated use among all seniors (present and absent) plus the estimated population difference between all seniors and dropouts, resulting in an estimated prevalence among dropouts.
- (10) Weighted combined estimate of prevalence, using MTF estimates for all seniors (column 3), and estimate of prevalence among dropouts (column 9).

FIGURE A-1

**High School Completion by Persons 20-24 Years Old, 1972-2002**

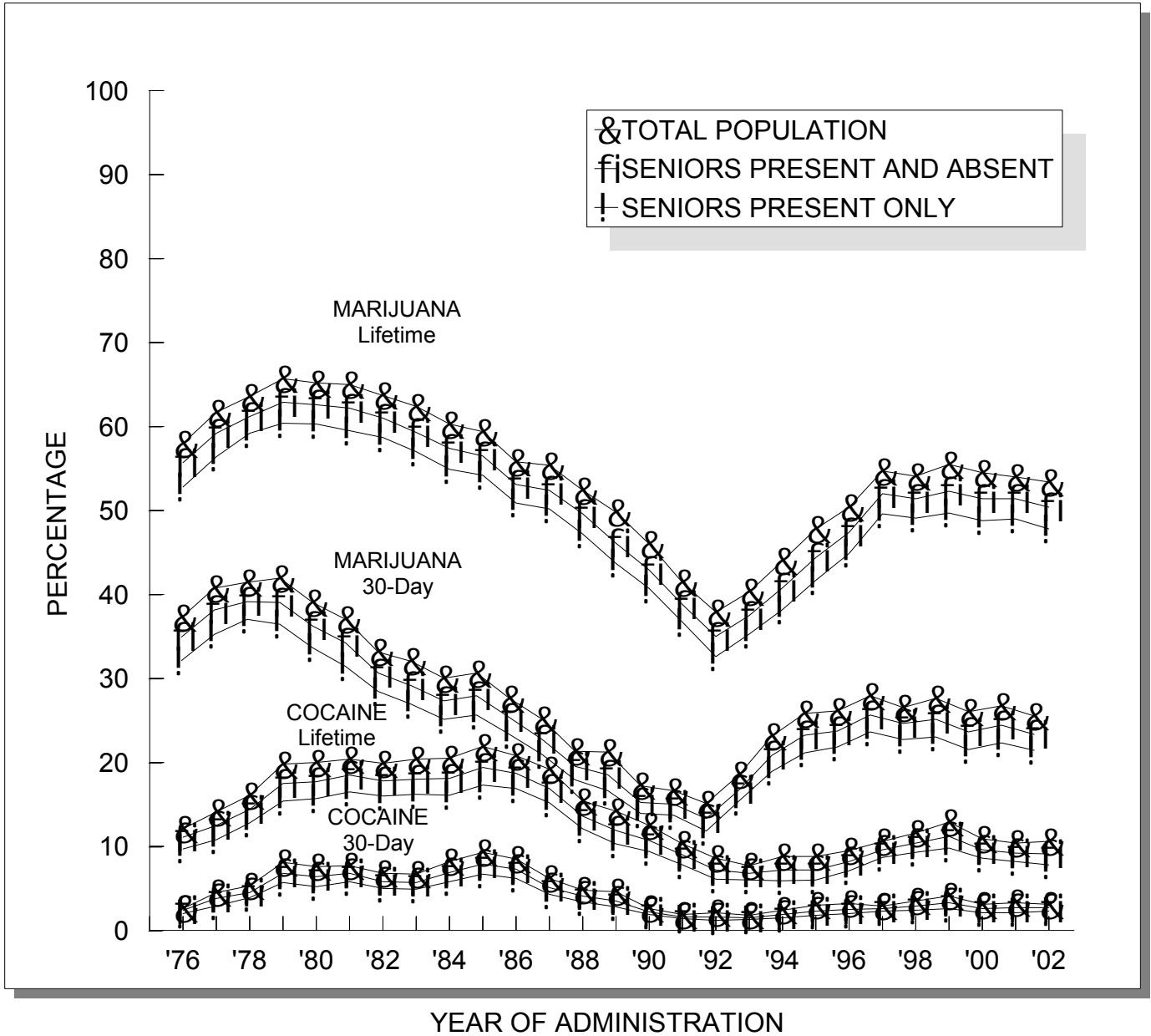
U.S. Population



Source: U.S. Bureau of the Census, Current Populations Survey, published and unpublished data; and 1980 Census.

FIGURE A-2

**Estimates of Prevalence and Trends for the Entire Age/Class Cohort,  
Adjusting for Absentees and Dropouts for Twelfth Graders**





## Appendix B

### DEFINITION OF BACKGROUND AND DEMOGRAPHIC SUBGROUPS

Throughout this volume, data are presented for the total sample of eighth, tenth, and twelfth graders. Data are also presented for many subgroups of students. The following are brief descriptions of the background and demographic subgroups used in this volume. (Note: All case counts provided in the tables are based on weighted *ns.*)

**Total:** The total sample of respondents in a given year of the study.

**Gender:** *Male and female.* Respondents with missing data on the question asking the respondent's gender are omitted from the data presented by gender.

#### College

**Plans:** Respondents not answering the college plans question are omitted from both groupings. College plans groupings are defined as follows:

*None or under 4 years.* Respondents who indicate they “definitely won’t” or “probably won’t” graduate from a four-year college program. (Note that, among those who do not expect to complete a four-year college program, a number still expect to get some post-secondary education.)

*Complete 4 years.* Respondents who indicate they “definitely will” or “probably will” graduate from a four-year college program.

**Region:** Region of the country in which the respondent's school is located. There are four mutually exclusive regions of the country based on Census categories, defined as follows:

*Northeast.* Census classifications of New England and Middle Atlantic states include Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, and Pennsylvania.

*North Central (Midwest).* Census classifications of East North Central and West North Central states include Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, and Kansas.

*South.* Census classifications of South Atlantic, East South Central, and West South Central states include Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida, Kentucky, Tennessee, Alabama, Mississippi, Arkansas, Louisiana, Oklahoma, and Texas.

**West.** Census classifications of Mountain and Pacific states include Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Washington, Oregon, and California.

## **Population**

**Density:** Population density of the area in which the schools are located. There are three mutually exclusive groups that have been variously defined, as described below. (The 1975-1985 samples were based on the 1970 Census; in 1986 one-half of the sample was based on the 1970 Census, the other half of the sample was based on the 1980 Census; in 1987 through 1993 the samples were based on the 1980 Census; in 1994 half of the sample was based on the 1980 Census and half on the 1990 Census; and after 1994, all samples were based on the 1990 Census.) The three levels of population density were defined in terms of Standard Metropolitan Statistical Area (SMSAs) designations through 1985, and then changed to the new Census Bureau classifications of Metropolitan Statistical Areas (MSAs), as described here:

**Large MSAs.** In the 1975-1985 samples these were the 12 largest Standard Metropolitan Statistical Areas (SMSA) as of the 1970 Census: New York, Los Angeles, Chicago, Philadelphia, Detroit, San Francisco, Washington, Boston, Pittsburgh, St. Louis, Baltimore, and Cleveland. From 1986 to 1994, the “large MSA” group consisted of the 16 largest MSAs as of the 1980 Census. These 16 MSAs include all of the MSAs mentioned above (except Cleveland) plus the MSAs of Dallas-Fort Worth, Houston, Nassau-Suffolk, Minneapolis-St. Paul, and Atlanta.

Beginning with the first-year schools in 1994, the new sample design was developed, based on the 1990 Census. In the 1990s sample only the eight largest MSAs are represented with certainty at all three grade levels; the 16 next largest MSAs are divided into pairs, with half randomly assigned to the twelfth- and eighth-grade samples and the other half assigned to the tenth-grade sample. (The purpose of this split was to reduce the study’s burden on each MSA.) The eight largest MSAs are New York, Los Angeles, Chicago, Philadelphia PA-NJ, Detroit, Washington DC-MD-VA, Dallas-Ft. Worth, and Boston. The next 16 largest MSAs are Houston, Atlanta, Seattle-Tacoma, Minneapolis MN-WI, St. Louis MO-IL, San Diego, Baltimore, Pittsburgh, Phoenix, Oakland, Cleveland, Miami-Hialeah, Newark, Denver, San Francisco, and Kansas City MO-KS.

**Other MSAs.** Includes all other Metropolitan Statistical Areas (MSAs), as defined by the Census, except those listed previously. Except in the New England states, an MSA is a county or group of contiguous counties that contain at least one city of 50,000 inhabitants or more, or “twin cities” with a combined population of at least 50,000. In the New England states MSAs consisted of towns and cities, instead of counties, until 1994, after which New England Consolidated Metropolitan Areas (NECMAs) were used to define MSAs. Each MSA must include at least one central city, and the complete title of an MSA

identifies the central city or cities. For the complete description of the criteria used in defining MSAs, see the Office of Management and Budget publication, *Metropolitan Statistical Areas, 1990* (NTIS-PB90-214420), Washington, D.C. The population living in MSAs is designated as the metropolitan population.

**Non-MSAs.** Includes all areas not designated as Metropolitan Statistical Areas (MSAs)—in other words, they do not contain a town of at least 50,000 population. The population living outside MSAs constitutes the nonmetropolitan population.

**Parental**

**Education:** This is an average of mother's education and father's education based on the respondent's answers about the highest level of education achieved by each parent, using the following scale: (1) completed grade school or less, (2) some high school, (3) completed high school, (4) some college, (5) completed college, (6) graduate or professional school after college. Missing data was allowed on one of the two variables. The respondent is instructed, "If you were raised mostly by foster parents, stepparents, or others, answer for them. For example, if you have both a stepfather and a natural father, answer for the one that was most important in raising you."

**Race/**

**Ethnicity:** A general question asks, "How do you describe yourself?"

**White.** Includes those respondents who describe themselves as White or Caucasian.

**Black.** Includes those respondents who in 1975-1990 describe themselves as Black or Afro-American or who, after 1990, describe themselves as Black or African American.

**Hispanic.** Includes those respondents who in 1975-1990 describe themselves as Mexican American or Chicano, or Puerto Rican or other Latin American. After 1990 this group includes those respondents who describe themselves as Mexican American or Chicano, Cuban American, Puerto Rican American, or other Latin American. After 1994, the term Puerto Rican American was shortened to Puerto Rican.

## Appendix C

### ESTIMATION OF SAMPLING ERRORS

This appendix provides some guidance for those who wish to calculate confidence intervals around the percentage estimates reported in this volume or to assess the statistical significance of differences between percentage estimates.

All of the percentages reported in this volume are estimates of the response percentage that would have been obtained if, instead of using a sample survey, we had surveyed all eighth-, tenth-, or twelfth-grade students throughout the United States. Because we surveyed only a sample, and not the entire population, there are sampling errors associated with each estimate. For any particular percentage resulting from a sample survey, we cannot know exactly how much error has resulted from sampling, but we can make reasonably good estimates of “confidence intervals”—ranges within which the “true” population value is very likely to fall. The word “true” in this context refers to the value that would be found if we had surveyed the total population—that is, all eighth-, tenth-, or twelfth-grade students in the United States. This concept of “true” population value does not take account of biases that might occur due to refusals, intentional or unintentional distortion of responses, faulty question wording, and other factors.

#### CALCULATING CONFIDENCE INTERVALS

The most straightforward types of samples, from a statistical standpoint at least, are simple random samples. In such samples the confidence limits for a proportion are influenced by the size of the sample, or particular subsample, under consideration, and also by the value of the proportion. (Although the estimates in this volume are expressed as percentages, this appendix generally deals with the equivalent proportion, for ease of presentation.)

The *standard error*<sup>109</sup> of a proportion  $p$  based on a simple random sample of  $n$  cases is equal to:

$$\sqrt{p(1.0 - p) / n} \quad (1)$$

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<sup>109</sup>The standard error of an estimate is a measure of sampling error; it is defined as the standard deviation of the sampling distribution of the statistic. It is used to construct the confidence interval around an estimate.

With a large number of cases, a symmetrical **confidence interval** around  $p$  would be approximated by:

$$p \pm z\sqrt{p(1.0 - p)/n} \quad (2)$$

where  $z$  is the appropriate value from the  $z$ -distribution. For a 95% confidence interval, for example,  $z = 1.96$ .

Many of the proportions presented in this volume represent rare events, with values being close to zero. At those low values, a more appropriate confidence interval would be asymmetric. A more exact calculation for confidence intervals, which will usually produce asymmetric confidence limits, is<sup>110</sup>:

$$\frac{n}{n + z^2} \left[ p + \frac{z^2}{2n} \pm z\sqrt{\frac{p(1-p)}{n} + \frac{z^2}{4n^2}} \right] \quad (3)$$

### Significance of Difference Between Two Proportions

In addition to estimating the sampling error around a single proportion, we often wish to test the significance of a difference between two proportions, such as the difference between the proportion of marijuana users among male students as compared to among female students. The following formula produces a statistic that can be referred to a standard normal distribution, assuming reasonably large numbers of cases:

$$z = \frac{p_1 - p_2}{\sqrt{p_e(1 - p_e) \frac{n_1 + n_2}{n_1 n_2}}} \quad (4)$$

where

$$p_e = \frac{n_1 p_1 + n_2 p_2}{n_1 + n_2} \quad (5)$$

and  $p_e$  is the estimated population proportion,  $p_1$  is the observed proportion (of users) in the first group,  $p_2$  is the observed proportion in the second group,  $n_1$  is the number of cases in the first group, and  $n_2$  is the number of cases in the second group.

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<sup>110</sup>Formula 6.11.1, page 240, in Hays, W. L. (1988). *Statistics* (4th ed.). Holt, Rinehart, & Winston.

## DESIGN EFFECTS IN COMPLEX SAMPLES

Formulas (1) - (5) are appropriate only for simple random samples.<sup>111</sup> In complex samples such as those used in the Monitoring the Future surveys, it is also necessary to take account of the effect that the sampling design has on the size of standard errors. (A complex sample is any sample that is not a simple random sample.)

The Monitoring the Future sample design incorporates stratification, clustering, and differential weighting to adjust for differential probabilities of selection. These design elements influence sampling error. While stratification tends to heighten the precision of a sample compared with a simple random sample of the same size (usually reducing the sampling error), the effects of clustering and weighting reduce precision (usually increasing the sampling error). The net result is that complex sample designs almost always result in increased sampling error (but they usually result in more efficient samples in all other respects). Therefore, it is not appropriate to apply the standard, simple random sampling formulas to such complex samples in order to obtain estimates of sampling errors.

Methods exist to correct for this underestimation. Kish (1965)<sup>112</sup> defines a correction term called the *design effect* (DEFF), where

$$DEFF = \frac{\text{actual sampling variance}}{\text{variance expected from a random sample}} \quad (6)$$

Thus, if the actual sampling variance in a complex sample is four times as large as the expected sampling variance from a simple random sample with the same number of cases, the DEFF is 4.0. Because confidence intervals are proportionate to the square root of variance, the confidence intervals for such a sample would be twice as large (because the square root of 4 is 2) as the confidence interval for a simple random sample with the same number of cases. If an estimate of design effect is available, one of the simplest correction procedures to follow is to divide the actual numbers of cases by the design effect (thereby “depreciating” the actual number to its equivalent value in simple random sample terms) and then employ the standard statistical procedures that are available for application to simple random samples. Thus, for example, if the design effect (DEFF) for a sample of 16,000 were 4.0, then one could divide the 16,000 by 4.0, and the result, 4,000, could be entered as the value of  $n$  in statistical tables and formulas designed for use with simple random samples. In short, the strategy involves dividing the actual number of cases by the appropriate DEFF in order to get a “simple random sampling equivalent  $n$ ” or, more simply, an “effective  $n$ ” for use in statistical procedures designed for random samples.

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<sup>111</sup>A simple random sample is one in which each element is selected independently of, and with the same probability as, all other elements in the universe of elements from which the sample is drawn.

<sup>112</sup>Kish, L. (1965). *Survey sampling*. New York: John Wiley, p. 258.

### Estimating Design Effects

In principle, every different statistic resulting from a complex sample can have its own design effect and, in fact, different statistics in the same sample may have quite different design effects. However, it is not feasible to compute every design effect, nor would it be feasible to report every one. Moreover, “Sampling errors computed from survey samples are themselves usually subject to great sampling variability . . . Sampling theory, and experience with many and repeated computations, teach us not to rely on the precision of individual results, even when these are based on samples with large numbers of elements.”<sup>113</sup> Thus, in practice, design effects are averaged across a number of statistics, and these average values are used to estimate the design effects for other statistics based on the same sample. Sometimes, a single design effect is applied to all the estimates in a given study. This is usually an oversimplification. In the present study a rather extensive exploration of design effects revealed a number of systematic differences. These systematic differences have to do with the particular measures being examined, the subgroups involved, and the question of whether a trend over time is being considered. Thus, we provide here a more elaborated set of estimates of design effects that vary along these several dimensions.<sup>114</sup>

### Factors Affecting Design Effects

Design effects are systematically related to two factors: the amount of “clustering” and the average cluster size. (Each school in the Monitoring the Future design can be considered a cluster of cases, or students.) Specifically,

$$DEFF = 1 + r(\bar{n} - 1) \tag{7}$$

(Kish, 1965, section 5, p. 162; Kalton, 1983, p. 31<sup>115</sup>)

where  $\bar{n}$  is the average cluster size and  $r$  is the intraclass correlation coefficient measuring the degree of cluster homogeneity. Note that the equality is approximate.

An important consequence of this relationship is that subgroups such as male or female that are typically represented within all clusters (that is, all schools) have a lower average cluster size. All (or virtually all) of the schools in the sample have both male and female students. Thus, each of these subgroups is spread more or less evenly across the full number of clusters (schools). Because each of these subgroups includes approximately half of the total sample, the average number of cases per cluster is about half as large as for the total sample, and this leads to a smaller design effect than is found for the total sample. (There is usually not much difference in  $r$ , the measure of cluster homogeneity.) Other subgroups involving college plans or parental education are also distributed across all clusters (although not as evenly as gender) and thus are subject to the same phenomenon of smaller design effects because of the smaller number of

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<sup>113</sup>Kish, L., Groves, R. M., & Krotki, K. P. (1976). *Sampling errors for fertility surveys* (Occasional Paper Series No. 17). Voorburg, The Netherlands: International Statistical Institute, p. 19.

<sup>114</sup>All design effects were estimated using the Taylor series expansion method.

<sup>115</sup>Kalton, G. (1983). *Introduction to survey sampling*. Beverly Hills: Sage Publications.

cases per cluster. This is in contrast to the situation with subgroups such as region of the country, each of which will normally have the same average cluster size as the total sample from the whole country—but considerably fewer clusters. The former type of subgroup (*cross-class*) will usually have a lower design effect, while the latter type of subgroup (*segregated*) will usually have a design effect similar to the overall. In this study, cross-class subgroups include gender, college plans, and parental education. Segregated subgroups include region and population density. Race/ethnicity is a mixed case, in that there tends to be substantial clustering of various racial/ethnic groups by school. Consequently, design effects for minority race/ethnic subgroups tend to be somewhat higher than average, though this tendency is not always evidenced. Because such a high proportion of respondents in most schools are White, the associated design effects for them tend to be similar to the overall design effects.

As an empirical generalization, we have observed that design effects tend to be related to the actual prevalence rates of substance use (or p value). Thus, rarely used substances such as heroin typically have low design effects, while more commonly used substances such as cigarettes, alcohol, and marijuana typically have high design effects. A corollary fact is that the design effect associated with the estimate of lifetime prevalence of any given substance is usually greater than (or equal to) the design effect associated with annual prevalence of that substance, which is in turn greater than the design effect for monthly prevalence. This tendency would imply that eighth-grade design effects would typically be lower than those for tenth grade, which would be lower than twelfth grade (because prevalence rates are usually greater in the upper grades). However, eighth-grade schools tend to be more homogenous within schools in socioeconomic terms than are high schools, because they tend to draw from smaller geographic areas; this tends to make eighth-grade schools more homogenous with respect to drug use, which would lead to larger design effects. The combination of factors generally leads to slightly lower design effects for the lower grade levels (although not in all cases).

### **Design Effects for Differences Between Two Proportions**

***Trends between two non-adjacent years.*** A trend over an interval greater than one year (for example, a comparison between 1994 and 1980) is basically a comparison between estimates from two independent samples. Therefore, the design effects for a single estimated proportion is appropriate. The relevant design effects for non-adjacent years are presented in Tables C-2a through C-2g.

***Trends between adjacent years.*** One of the central purposes of the Monitoring the Future project is to monitor trends over time; indeed, the study procedures have been standardized across years insofar as possible in order to provide the opportunity for sensitive measurement of change. One of the factors designed to produce an added degree of consistency from one year to the next is the use of each school for two data collections, which means that for any two successive years half of the sample of schools is the same. This means that there is a good deal of consistency in the sampling and clustering of the sample from one year to the next. As a result, when one-year comparisons are made between adjacent years, the design effects for the trend estimate are appreciably smaller than if completely independent samples of schools had been drawn each year. In other words, the samples in adjacent years are not independent; on the contrary, there is a considerable degree of covariance between them. This covariance, or partial



“matching,” reduces the design effect for differences observed between adjacent years, compared to what they would have been with totally independent samples.

In order to estimate the extent of “shrinkage,” we calculated about 95 DEFFs for adjacent one-year trend data where we had prevalence data for the same grade/drug combinations. The relationship between the two sets of DEFFs (prevalence versus one-year trend) was found to be approximately linear, with a product-moment correlation of .88 for DEFFs (and .89 for the square root of DEFF). This seemed sufficiently high to justify simply estimating the linear relation, predicting the trend DEFF from the prevalence DEFF, and using that to estimate the one-year trend DEFF for all measures. The resulting design effects are given in Tables C-1a through C-1g.

***Comparisons between subgroups within a single year.*** We examined a variety of design effects involving comparisons between subgroups based on gender, college plans, and parental education. A considerable simplification was achieved when we noted that generally the average DEFF values for subgroup comparisons were quite similar to the average DEFF values for one-year trends.

With respect to segregated variables like region and population density, the subgroup samples are essentially independent; therefore, the prevalence design effects are appropriate for comparisons among these subgroups. Design effects for subgroup comparisons within a single year are provided in Tables C-3a through C-3g.

***Differentiating design effects by drug classes.*** Our exploration of design effects led us to the conclusion that various groups of drugs tended to have very similar values. Thus, the following groupings of drugs were created for the purpose of simplification:

1. An index of use of any illicit drug other than marijuana
2. An index of use of any illicit drug; an index of use of any illicit drug including inhalants; and marijuana
3. Hallucinogens, LSD, cocaine, and other cocaine (i.e., not crack)
4. Nitrites, PCP, crack cocaine, heroin (including heroin with and without a needle), methamphetamine, ice (crystal methamphetamine), methaqualone, Rohypnol, GHB, ketamine, and steroids
5. Hallucinogens other than LSD, MDMA (ecstasy), narcotics other than heroin, sedatives (barbiturates), tranquilizers, bidis, Ritalin, androstenedione, creatine, and kreteks
6. Inhalants and amphetamines
7. Alcohol (including use of alcohol and getting drunk), cigarettes, and smokeless tobacco

Design effects were found to be generally similar for all the drugs contained within each grouping but somewhat different across groupings. Therefore, each of the three general tables of design effects (Tables C1, C2, and C3) has seven parts corresponding to each of these seven drug groupings (i.e., parts a through g).

In general, intervals of use (lifetime, annual, 30-day, daily) are distinguished. For some substances, though, the variation by interval was slight enough to ignore.

On both logical and empirical grounds, there seemed little reason to distinguish among the “segregated” groups: total sample, and groups defined by region and by population density. The average cluster size should be about the same, and there should not be much variation in the degree to which drug use clusters by school within these categories. Some variation was evident empirically, but it did not appear to be systematic. Thus, these groups are assigned equal design effects.

Separate design effect values are provided for estimates of use (prevalence) among the three grade levels (8, 10, 12), for subgroups defined by gender (males, females), college plans (planning to complete 4 years, not planning to complete 4 years), parental education (five levels), and race/ethnicity (African American, White, Hispanic). In some cases, particularly for the less prevalent drugs where design effects are very low, the estimated design effects in fact do not vary by group.

Estimates of design effects are also provided for one-year trends. For trends across nonadjacent years, the standard design effects for prevalence are appropriate. Estimates of design effects are also provided separately for comparisons of subgroups within a given year.

## **DETERMINING EFFECTIVE *N*'S**

Tables C1 through C3 provide estimates of design effects that can be used to “shrink” the weighted numbers of cases given in each table in this volume to an “effective *n*,” which is appropriate for use in standard formulas in calculating sampling errors, confidence intervals, and statistical significance of differences in proportions. The tables are in three sets: the first set (C-1a through C-1g) is appropriately used for a one-year trend across adjacent years; the second set (C-2a through C-2g) is for a single prevalence or a comparison across non-adjacent years; and the third (C-3a through C-3g) for a comparison between subgroups in a single year. (Adjacent years differ from non-adjacent years in that half of the schools are part of both years’ samples.)

*To use the tables, the reader should determine whether the design effect is needed for a one-year trend (Table C1), a single prevalence (Table C2), or a subgroup comparison within a year (Table C3); and which substance is involved (a-g); and then the appropriate table can be accessed. Within the table, the reader needs to determine which subgroup (or total sample) is involved, which grade level, and which interval of use. Then, the appropriate design effect can be referenced and used to deflate the weighted number of cases to arrive at an “effective *n*.” This effective *n* would be used in formulas (1) to (5), given previously.*

As an example, suppose one wished to compare the 30-day prevalence of marijuana use for the total eighth-grade sample in 1996 with 1997. Tables 2-1 through 2-3, provided earlier in this volume, indicate that prevalence was 11.3% in 1996, based on 17,800 cases; and 10.2% in 1997, based on 18,600 cases. Table C-1b shows that an appropriate design effect for eighth-grade 30-day marijuana use is 3.2. Each year’s *n* would be divided by 3.2, producing effective *n*’s of 5,562 and 5,812. These effective *n*’s should be used in formula (4) given earlier in this

appendix, to test whether the difference in proportions between the two years is statistically significant.

### **A Special Note on Racial/Ethnic Subgroups**

As noted earlier in this volume, the prevalence estimates for racial/ethnic subgroups are reported only for two-year averages, instead of for single years, because of limited sample sizes and a higher degree of clustering. The design effects for prevalence rates for racial/ethnic subgroups provided in Tables C-2a through C-2g are appropriately applied to the number of cases provided for the two years combined. In calculating a one-year trend between the two most recent prevalence figures, however, one is in effect taking a trend between a prevalence based on data from the most recent single year and a prevalence based on data from a single year two years prior to the most recent year. For example, comparing the estimate based on combined 1994 and 1995 data with the combined 1993 and 1994 data is equivalent to comparing 1993 and 1995 because the 1994 observed value is contained in both data points and therefore cancels itself out. The design effects for trends provided in Tables C-1a through C-1g are therefore appropriately applied to one-half of the number of cases provided in each table for the combined years.

### **A NOTE ON INTERPRETATION OF DIFFERENCES AND STATISTICAL SIGNIFICANCE**

This appendix provides the reader with procedures to assess the statistical significance of differences over time or between groups. In the text of this report we frequently comment on particular differences over time or between groups in terms of drug use. In general, our conclusions are based to a considerable extent on *patterns* of cross-time changes rather than on the statistical significance of any single comparison. That is, we assess the overall pattern of evidence, rather than any single finding, to assess the likely validity of the finding.

There are at least five types of patterns that we inspect:

1. **Replication across grades.** Because the annual samples of eighth-, tenth-, and twelfth-grade students are three *completely independent samples*, one pattern that we look for is the similarity or contrast in changes that occur in the three groups. Although there is no requirement that changes occur similarly in all three groups, to the extent that a change is similar (or at least not inconsistent), we are more confident in its validity.
2. **Replication across subgroups.** To the extent that a change has occurred across a broad range of subgroups, we are more confident in its validity. For example, if an increase in use occurs among males and females, among noncollege-bound and college-bound, in different regions, etc., we would be more inclined to accept the change as reflecting an underlying reality.
3. **Replication across half-samples.** Because half of the schools remain the same from one year to the next, any changes across a one-year interval can be examined for the half-sample that has remained constant. In other words, the data are examined for only the schools that provide data for both years. This removes any differences that may have occurred due simply to different schools being included.

4. **Consistency across several years.** Although each year's report emphasizes the changes in the most recent year, we pay careful attention to trends across longer time intervals. For example, when we observe a third or fourth consecutive year of consistent change in one direction (up or down), then we are more inclined to accept the validity of the general trend, even if none of the changes in any of the one-year intervals was statistically significant.
5. **Replication across different variables.** Another type of replication or validation involves examining trends in different variables that would be expected to covary. For example, we have observed that perceived risk of harm associated with use of a specific substance tends to covary (negatively) with actual use of the substance. Similarly, we would expect reports of friends' use of specific substances to covary (positively) with reports of the respondents' own use. To the extent that different variables covary in the expected manner, then we would be more confident in interpreting the results.

Although we do not always discuss all of these various contributions to our confidence, we do generally assess them, prior to making interpretations.

**Tables of Design Effects to Use in Calculating “Effective Ns”**

Table C-1: One-Year Trends in Prevalence

- (a) An index of use of any illicit drug other than marijuana
- (b) An index of use of any illicit drug; an index of use of any illicit drug including inhalants; and marijuana
- (c) Hallucinogens, LSD, cocaine, and other cocaine (i.e., not crack)
- (d) Nitrites, PCP, crack cocaine, heroin (including heroin with and without a needle), methamphetamine, ice, methaqualone, Rohypnol, GHB, ketamine, and steroids
- (e) Hallucinogens other than LSD, MDMA, narcotics other than heroin, sedatives (barbiturates), tranquilizers, bidis, Ritalin, androstenedione, creatine, and kreteks
- (f) Inhalants and amphetamines
- (g) Alcohol (including use of alcohol and getting drunk), cigarettes, and smokeless tobacco

Table C-2: Prevalence or Change in Prevalence Across Non-Adjacent Years

- (a) An index of use of any illicit drug other than marijuana
- (b) An index of use of any illicit drug; an index of use of any illicit drug including inhalants; and marijuana
- (c) Hallucinogens, LSD, cocaine, and other cocaine (i.e., not crack)
- (d) Nitrites, PCP, crack cocaine, heroin (including heroin with and without a needle), methamphetamine, ice, methaqualone, Rohypnol, GHB, ketamine, and steroids
- (e) Hallucinogens other than LSD, MDMA, narcotics other than heroin, sedatives (barbiturates), tranquilizers, bidis, Ritalin, androstenedione, creatine, and kreteks
- (f) Inhalants and amphetamines
- (g) Alcohol (including use of alcohol and getting drunk), cigarettes, and smokeless tobacco

Table C-3: Subgroups Comparisons Within Any Single Year

- (a) An index of use of any illicit drug other than marijuana
- (b) An index of use of any illicit drug; an index of use of any illicit drug including inhalants; and marijuana
- (c) Hallucinogens, LSD, cocaine, and other cocaine (i.e., not crack)
- (d) Nitrites, PCP, crack cocaine, heroin (including heroin with and without a needle), methamphetamine, ice, methaqualone, Rohypnol, GHB, ketamine, and steroids

- (e) Hallucinogens other than LSD, MDMA, narcotics other than heroin, sedatives (barbiturates), tranquilizers, bidis, Ritalin, androstenedione, creatine, and kreteks
- (f) Inhalants and amphetamines
- (g) Alcohol (including use of alcohol and getting drunk), cigarettes, and smokeless tobacco

**TABLE C-1a**  
**Design Effects for 1-Year Trends in Prevalence of Use**

		<b>INDEX OF ANY ILLICIT DRUG OTHER THAN MARIJUANA</b>			
		<u>Lifetime</u>	<u>Past 12 Months</u>	<u>Past 30 Days</u>	<u>Daily</u>
<b>SEGREGATED GROUPS:</b>					
<b>Total Sample:</b> Any Region ( <i>Northeast, North Central, South, and West</i> ); Any Population Density Stratum ( <i>Large MSA, Other MSA, and Non-MSA</i> )					
	8th Grade	3.9	3.3	2.6	1.2
	10th Grade	4.3	3.6	2.7	1.2
	12th Grade	4.9	4.4	3.3	1.7
<b>CROSS-CLASS GROUPS:</b>					
<b>Gender:</b>					
<i>Male</i>	8th Grade	2.8	2.5	2.2	1.3
	10th Grade	3.1	2.7	2.4	1.2
	12th Grade	3.2	2.9	2.4	1.7
<i>Female</i>	8th Grade	3.1	2.8	2.1	1.2
	10th Grade	3.3	2.9	2.2	1.1
	12th Grade	3.5	3.3	2.8	1.6
<b>College Plans:</b>					
<i>None or under 4 yrs.</i>	8th Grade	2.0	1.9	1.6	1.2
	10th Grade	2.2	2.1	1.8	1.4
	12th Grade	2.1	1.9	1.6	1.5
<i>Complete 4 years</i>	8th Grade	3.5	2.8	2.3	1.2
	10th Grade	4.1	3.3	2.5	1.1
	12th Grade	4.4	3.8	3.0	1.7
<b>Parental Education:</b>					
<i>Any stratum</i>	8th Grade	2.1	2.0	1.6	1.1
	10th Grade	2.2	2.0	1.7	1.2
	12th Grade	2.4	2.2	1.7	1.4
<b>Racial/Ethnic Group:</b>					
<i>White</i>	8th Grade	4.0	3.8	2.9	1.4
	10th Grade	4.9	4.3	3.0	1.5
	12th Grade	4.2	4.0	2.9	2.0
<i>Black</i>	8th Grade	2.7	2.0	1.5	1.2
	10th Grade	3.0	2.6	1.9	1.3
	12th Grade	3.7	3.3	3.0	1.6
<i>Hispanic</i>	8th Grade	3.8	2.7	2.0	1.5
	10th Grade	4.5	2.9	1.8	1.3
	12th Grade	6.9	5.8	3.0	1.9

SOURCE: The Monitoring the Future Study, the University of Michigan.

**TABLE C-1b**  
**Design Effects for 1-Year Trends in Prevalence of Use**

		<b>INDEX OF ANY ILLICIT DRUG, INDEX OF ANY ILLICIT DRUG INCLUDING INHALANTS, AND MARIJUANA</b>			
		<u>Lifetime</u>	<u>Past 12 Months</u>	<u>Past 30 Days</u>	<u>Daily</u>
<b>SEGREGATED GROUPS:</b>					
<b>Total Sample:</b> Any Region ( <i>Northeast, North Central, South, and West</i> ); Any Population Density Stratum ( <i>Large MSA, Other MSA, and Non-MSA</i> )					
	8th Grade	4.1	3.5	3.2	1.4
	10th Grade	5.0	4.3	3.4	1.5
	12th Grade	6.9	6.6	5.4	2.8
<b>CROSS-CLASS GROUPS:</b>					
<b>Gender:</b>					
<i>Male</i>	8th Grade	2.4	2.4	2.4	1.5
	10th Grade	3.4	3.0	3.0	1.5
	12th Grade	3.8	3.4	3.0	2.7
<i>Female</i>	8th Grade	3.4	3.0	2.4	1.3
	10th Grade	4.0	3.4	2.7	1.1
	12th Grade	4.6	4.6	4.5	2.6
<b>College Plans:</b>					
<i>None or under 4 yrs.</i>	8th Grade	2.3	2.3	2.0	1.3
	10th Grade	2.8	2.8	2.7	2.0
	12th Grade	2.4	2.4	2.1	2.1
<i>Complete 4 years</i>	8th Grade	3.3	2.4	2.4	1.5
	10th Grade	5.1	4.0	3.2	1.1
	12th Grade	6.1	5.3	4.5	3.0
<b>Parental Education:</b>					
<i>Any stratum</i>	8th Grade	2.1	2.1	1.9	1.1
	10th Grade	2.5	2.3	2.2	1.4
	12th Grade	3.0	2.8	2.3	1.9
<b>Racial/Ethnic Group:</b>					
<i>White</i>	8th Grade	4.5	4.4	4.1	1.9
	10th Grade	7.2	5.8	4.5	2.1
	12th Grade	5.0	5.0	4.2	3.7
<i>Black</i>	8th Grade	3.0	2.1	1.3	1.1
	10th Grade	4.0	4.0	2.6	1.5
	12th Grade	6.0	6.0	6.0	2.5
<i>Hispanic</i>	8th Grade	2.6	2.6	2.1	2.0
	10th Grade	4.9	3.0	1.6	1.5
	12th Grade	12.0	11.7	5.3	3.4

SOURCE: The Monitoring the Future Study, the University of Michigan.



**TABLE C-1c**  
**Design Effects for 1-Year Trends in Prevalence of Use**

		<b>HALLUCINOGENS (UNADJUSTED AND ADJUSTED), LSD, COCAINE, AND OTHER COCAINE</b>			
		<u>Lifetime</u>	<u>Past 12 Months</u>	<u>Past 30 Days</u>	<u>Daily</u>
<b>SEGREGATED GROUPS:</b>					
<b>Total Sample:</b> Any Region ( <i>Northeast, North Central, South, and West</i> ); Any Population Density Stratum ( <i>Large MSA, Other MSA, and Non-MSA</i> )					
	8th Grade	4.3	3.5	2.5	1.1
	10th Grade	4.3	3.5	2.5	1.1
	12th Grade	4.3	3.5	2.5	1.1
<b>CROSS-CLASS GROUPS:</b>					
<b>Gender:</b>					
<i>Male</i>	8th Grade	3.2	2.8	2.4	1.1
	10th Grade	3.2	2.8	2.4	1.1
	12th Grade	3.2	2.8	2.4	1.1
<i>Female</i>	8th Grade	3.2	2.8	2.0	1.1
	10th Grade	3.2	2.8	2.0	1.1
	12th Grade	3.2	2.8	2.0	1.1
<b>College Plans:</b>					
<i>None or under 4 yrs.</i>	8th Grade	2.0	1.9	1.4	1.1
	10th Grade	2.0	1.9	1.4	1.1
	12th Grade	2.0	1.9	1.4	1.1
<i>Complete 4 years</i>	8th Grade	4.2	3.2	2.4	1.1
	10th Grade	4.2	3.2	2.4	1.1
	12th Grade	4.2	3.2	2.4	1.1
<b>Parental Education:</b>					
<i>Any stratum</i>	8th Grade	2.1	1.9	1.5	1.1
	10th Grade	2.1	1.9	1.5	1.1
	12th Grade	2.1	1.9	1.5	1.1
<b>Racial/Ethnic Group:</b>					
<i>White</i>	8th Grade	4.2	3.8	2.8	1.2
	10th Grade	4.2	3.8	2.8	1.2
	12th Grade	4.2	3.8	2.8	1.2
<i>Black</i>	8th Grade	1.4	1.4	1.3	1.2
	10th Grade	1.4	1.4	1.3	1.2
	12th Grade	1.4	1.4	1.3	1.2
<i>Hispanic</i>	8th Grade	6.1	3.3	2.3	1.2
	10th Grade	6.1	3.3	2.3	1.2
	12th Grade	6.1	3.3	2.3	1.2

SOURCE: The Monitoring the Future Study, the University of Michigan.

**TABLE C-1d**  
**Design Effects for 1-Year Trends in Prevalence of Use**

**NITRITES, PCP, CRACK COCAINE,  
HEROIN (INCLUDING HEROIN  
WITH AND WITHOUT A NEEDLE),  
METHAMPHETAMINE, ICE,  
METHAQUALONE, ROHYPNOL,  
GHB, KETAMINE, AND STEROIDS**

		<u>Lifetime</u>	<u>Past 12 Months</u>	<u>Past 30 Days</u>	<u>Daily</u>
<b>SEGREGATED GROUPS:</b>					
<b>Total Sample:</b> Any Region ( <i>Northeast, North Central, South, and West</i> ); Any Population Density Stratum ( <i>Large MSA, Other MSA, and Non-MSA</i> )					
	8th Grade	1.9	1.3	1.3	1.1
	10th Grade	1.9	1.3	1.3	1.1
	12th Grade	1.9	1.3	1.3	1.1
<b>CROSS-CLASS GROUPS:</b>					
<b>Gender:</b>					
<i>Male</i>	8th Grade	1.3	1.3	1.3	1.1
	10th Grade	1.3	1.3	1.3	1.1
	12th Grade	1.3	1.3	1.3	1.1
<i>Female</i>	8th Grade	1.9	1.5	1.3	1.1
	10th Grade	1.9	1.5	1.3	1.1
	12th Grade	1.9	1.5	1.3	1.1
<b>College Plans:</b>					
<i>None or under 4 yrs.</i>	8th Grade	1.4	1.4	1.4	1.1
	10th Grade	1.4	1.4	1.4	1.1
	12th Grade	1.4	1.4	1.4	1.1
<i>Complete 4 years</i>	8th Grade	1.5	1.3	1.1	1.1
	10th Grade	1.5	1.3	1.1	1.1
	12th Grade	1.5	1.3	1.1	1.1
<b>Parental Education:</b>					
<i>Any stratum</i>	8th Grade	1.3	1.3	1.3	1.1
	10th Grade	1.3	1.3	1.3	1.1
	12th Grade	1.3	1.3	1.3	1.1
<b>Racial/Ethnic Group:</b>					
<i>White</i>	8th Grade	1.6	1.5	1.4	1.2
	10th Grade	1.6	1.5	1.4	1.2
	12th Grade	1.6	1.5	1.4	1.2
<i>Black</i>	8th Grade	1.8	1.8	1.8	1.2
	10th Grade	1.8	1.8	1.8	1.2
	12th Grade	1.8	1.8	1.8	1.2
<i>Hispanic</i>	8th Grade	2.0	1.6	1.5	1.2
	10th Grade	2.0	1.6	1.5	1.2
	12th Grade	2.0	1.6	1.5	1.2

SOURCE: The Monitoring the Future Study, the University of Michigan.

**TABLE C-1e**  
**Design Effects for 1-Year Trends in Prevalence of Use**

		<b>HALLUCINOGENS OTHER THAN LSD, MDMA (ECSTASY), NARCOTICS OTHER THAN HEROIN, RITALIN, SEDATIVES (BARBITURATES), TRANQUILIZERS, BIDIS, KRETEKS, ANDROSTENEDIONE, AND CREATINE</b>			
		<u>Lifetime</u>	<u>Past 12 Months</u>	<u>Past 30 Days</u>	<u>Daily</u>
<b>SEGREGATED GROUPS:</b>					
<b>Total Sample:</b> Any Region ( <i>Northeast, North Central, South, and West</i> ); Any Population Density Stratum ( <i>Large MSA, Other MSA, and Non-MSA</i> )					
	8th Grade	2.4	2.2	1.5	1.1
	10th Grade	2.4	2.2	1.5	1.1
	12th Grade	2.4	2.2	1.5	1.1
<b>CROSS-CLASS GROUPS:</b>					
<b>Gender:</b>					
<i>Male</i>	8th Grade	2.1	2.1	1.6	1.1
	10th Grade	2.1	2.1	1.6	1.1
	12th Grade	2.1	2.1	1.6	1.1
<i>Female</i>	8th Grade	2.0	1.6	1.3	1.1
	10th Grade	2.0	1.6	1.3	1.1
	12th Grade	2.0	1.6	1.3	1.1
<b>College Plans:</b>					
<i>None or under 4 yrs.</i>	8th Grade	2.0	1.6	1.3	1.1
	10th Grade	2.0	1.6	1.3	1.1
	12th Grade	2.0	1.6	1.3	1.1
<i>Complete 4 years</i>	8th Grade	2.0	1.6	1.3	1.1
	10th Grade	2.0	1.6	1.3	1.1
	12th Grade	2.0	1.6	1.3	1.1
<b>Parental Education:</b>					
<i>Any stratum</i>	8th Grade	2.0	1.6	1.3	1.1
	10th Grade	2.0	1.6	1.3	1.1
	12th Grade	2.0	1.6	1.3	1.1
<b>Racial/Ethnic Group:</b>					
<i>White</i>	8th Grade	2.5	2.5	1.9	1.2
	10th Grade	2.5	2.5	1.9	1.2
	12th Grade	2.5	2.5	1.9	1.2
<i>Black</i>	8th Grade	1.5	1.5	1.4	1.2
	10th Grade	1.5	1.5	1.4	1.2
	12th Grade	1.5	1.5	1.4	1.2
<i>Hispanic</i>	8th Grade	1.6	1.4	1.3	1.2
	10th Grade	1.6	1.4	1.3	1.2
	12th Grade	1.6	1.4	1.3	1.2

SOURCE: The Monitoring the Future Study, the University of Michigan.

**TABLE C-1f**  
**Design Effects for 1-Year Trends in Prevalence of Use**

		<b>INHALANTS AND AMPHETAMINES (UNADJUSTED AND ADJUSTED)</b>			
		<u>Lifetime</u>	<u>Past 12 Months</u>	<u>Past 30 Days</u>	<u>Daily</u>
<b>SEGREGATED GROUPS:</b>					
<b>Total Sample:</b> Any Region ( <i>Northeast, North Central, South, and West</i> ); Any Population Density Stratum ( <i>Large MSA, Other MSA, and Non-MSA</i> )					
	8th Grade	3.5	3.0	2.1	1.1
	10th Grade	3.5	3.0	2.1	1.1
	12th Grade	3.5	3.0	2.1	1.1
<b>CROSS-CLASS GROUPS:</b>					
<b>Gender:</b>					
<i>Male</i>	8th Grade	2.7	2.4	1.9	1.1
	10th Grade	2.7	2.4	1.9	1.1
	12th Grade	2.7	2.4	1.9	1.1
<i>Female</i>	8th Grade	2.7	2.7	1.9	1.1
	10th Grade	2.7	2.7	1.9	1.1
	12th Grade	2.7	2.7	1.9	1.1
<b>College Plans:</b>					
<i>None or under 4 yrs.</i>	8th Grade	1.9	1.5	1.3	1.1
	10th Grade	1.9	1.5	1.3	1.1
	12th Grade	1.9	1.5	1.3	1.1
<i>Complete 4 years</i>	8th Grade	3.0	2.7	2.0	1.1
	10th Grade	3.0	2.7	2.0	1.1
	12th Grade	3.0	2.7	2.0	1.1
<b>Parental Education:</b>					
<i>Any stratum</i>	8th Grade	2.0	1.9	1.4	1.1
	10th Grade	2.0	1.9	1.4	1.1
	12th Grade	2.0	1.9	1.4	1.1
<b>Racial/Ethnic Group:</b>					
<i>White</i>	8th Grade	3.3	3.2	1.8	1.2
	10th Grade	3.3	3.2	1.8	1.2
	12th Grade	3.3	3.2	1.8	1.2
<i>Black</i>	8th Grade	3.6	2.4	1.8	1.2
	10th Grade	3.6	2.4	1.8	1.2
	12th Grade	3.6	2.4	1.8	1.2
<i>Hispanic</i>	8th Grade	2.6	2.3	1.5	1.2
	10th Grade	2.6	2.3	1.5	1.2
	12th Grade	2.6	2.3	1.5	1.2

SOURCE: The Monitoring the Future Study, the University of Michigan.

**TABLE C-1g**  
**Design Effects for 1-Year Trends in Prevalence of Use**

		<u>ALCOHOL AND BEEN DRUNK</u>		<u>CIGARETTES AND SMOKELESS TOBACCO</u>	
		Lifetime, Past 12 Months, Past 30 Days, 5+ <sup>1</sup> / <sub>2</sub> Weeks	<u>Daily</u>	Lifetime, Past 30 Days, Daily	Half-pack or More per Day
<b>SEGREGATED GROUPS:</b>					
<b>Total Sample:</b> Any Region ( <i>Northeast, North Central, South, and West</i> ); Any Population Density Stratum ( <i>Large MSA, Other MSA, and Non-MSA</i> )					
	8th Grade	3.7	1.3	3.8	3.0
	10th Grade	3.7	1.3	3.8	3.0
	12th Grade	3.7	1.3	3.8	3.0
<b>CROSS-CLASS GROUPS:</b>					
<b>Gender:</b>					
<i>Male</i>	8th Grade	2.4	1.3	2.3	2.0
	10th Grade	2.4	1.3	2.3	2.0
	12th Grade	2.4	1.3	2.3	2.0
<i>Female</i>	8th Grade	3.1	1.3	3.6	2.6
	10th Grade	3.1	1.3	3.6	2.6
	12th Grade	3.1	1.3	3.6	2.6
<b>College Plans:</b>					
<i>None or under 4 yrs.</i>	8th Grade	2.1	1.3	2.0	2.0
	10th Grade	2.1	1.3	2.0	2.0
	12th Grade	2.1	1.3	2.0	2.0
<i>Complete 4 years</i>	8th Grade	3.2	1.3	3.2	2.3
	10th Grade	3.2	1.3	3.2	2.3
	12th Grade	3.2	1.3	3.2	2.3
<b>Parental Education:</b>					
<i>Any stratum</i>	8th Grade	2.0	1.3	2.1	1.9
	10th Grade	2.0	1.3	2.1	1.9
	12th Grade	2.0	1.3	2.1	1.9
<b>Racial/Ethnic Group:</b>					
<i>White</i>	8th Grade	3.6	1.4	3.7	2.6
	10th Grade	3.6	1.4	3.7	2.6
	12th Grade	3.6	1.4	3.7	2.6
<i>Black</i>	8th Grade	4.5	1.4	2.4	1.4
	10th Grade	4.5	1.4	2.4	1.4
	12th Grade	4.5	1.4	2.4	1.4
<i>Hispanic</i>	8th Grade	3.0	1.4	2.7	1.9
	10th Grade	3.0	1.4	2.7	1.9
	12th Grade	3.0	1.4	2.7	1.9

SOURCE: The Monitoring the Future Study, the University of Michigan.

**TABLE C-2a**  
**Design Effects for (a) Prevalence of Use or (b) a Change in**  
**Prevalence of Use Across Nonadjacent Years**

		<b>INDEX OF ANY ILLICIT DRUG OTHER THAN MARIJUANA</b>			
		<u>Lifetime</u>	<u>Past 12 Months</u>	<u>Past 30 Days</u>	<u>Daily</u>
<b>SEGREGATED GROUPS:</b>					
<b>Total Sample:</b> Any Region ( <i>Northeast, North Central, South, and West</i> ); Any Population Density Stratum ( <i>Large MSA, Other MSA, and Non-MSA</i> )					
	8th Grade	5.6	4.6	3.3	1.3
	10th Grade	6.2	5.0	3.4	1.4
	12th Grade	7.2	6.4	4.6	2.0
<b>CROSS-CLASS GROUPS:</b>					
<b>Gender:</b>					
<i>Male</i>	8th Grade	3.6	3.2	2.6	1.4
	10th Grade	4.1	3.5	3.0	1.4
	12th Grade	4.4	3.7	3.0	2.0
<i>Female</i>	8th Grade	4.2	3.7	2.4	1.3
	10th Grade	4.5	3.9	2.6	1.2
	12th Grade	4.9	4.6	3.6	1.9
<b>College Plans:</b>					
<i>None or under 4 yrs.</i>	8th Grade	2.3	2.2	1.8	1.3
	10th Grade	2.7	2.5	2.2	1.5
	12th Grade	2.4	2.3	1.9	1.6
<i>Complete 4 years</i>	8th Grade	4.8	3.6	2.8	1.4
	10th Grade	5.9	4.5	3.2	1.2
	12th Grade	6.4	5.3	4.0	2.1
<b>Parental Education:</b>					
<i>Any stratum</i>	8th Grade	2.4	2.2	1.8	1.2
	10th Grade	2.6	2.3	2.0	1.3
	12th Grade	2.9	2.6	2.0	1.5
<b>Racial/Ethnic Group:</b>					
<i>White</i>	8th Grade	5.0	4.8	3.6	1.8
	10th Grade	6.1	5.3	3.8	1.9
	12th Grade	5.2	5.0	3.7	2.5
<i>Black</i>	8th Grade	3.3	2.5	1.8	1.5
	10th Grade	3.8	3.3	2.4	1.6
	12th Grade	4.6	4.1	3.8	2.0
<i>Hispanic</i>	8th Grade	4.7	3.4	2.5	1.8
	10th Grade	5.7	3.6	2.3	1.6
	12th Grade	8.6	7.2	3.8	2.4

SOURCE: The Monitoring the Future Study, the University of Michigan.

**TABLE C-2b**  
**Design Effects for (a) Prevalence of Use or (b) a Change in**  
**Prevalence of Use Across Nonadjacent Years**

		<b>INDEX OF ANY ILLICIT DRUG, INDEX OF ANY ILLICIT DRUG INCLUDING INHALANTS, AND MARIJUANA</b>			
		<u>Lifetime</u>	<u>Past 12 Months</u>	<u>Past 30 Days</u>	<u>Daily</u>
<b>SEGREGATED GROUPS:</b>					
<b>Total Sample:</b> Any Region ( <i>Northeast, North Central, South, and West</i> ); Any Population Density Stratum ( <i>Large MSA, Other MSA, and Non-MSA</i> )					
	8th Grade	5.8	4.8	4.3	1.6
	10th Grade	7.5	6.2	4.7	1.7
	12th Grade	10.7	10.2	8.1	3.6
<b>CROSS-CLASS GROUPS:</b>					
<b>Gender:</b>					
<i>Male</i>	8th Grade	3.0	3.0	3.0	1.8
	10th Grade	4.6	4.0	4.0	1.7
	12th Grade	5.4	4.6	4.0	3.5
<i>Female</i>	8th Grade	4.6	4.0	2.9	1.4
	10th Grade	5.7	4.6	3.5	1.1
	12th Grade	6.8	6.7	6.5	3.3
<b>College Plans:</b>					
<i>None or under 4 yrs.</i>	8th Grade	2.7	2.7	2.2	1.5
	10th Grade	3.7	3.7	3.4	2.2
	12th Grade	3.0	3.0	2.5	2.5
<i>Complete 4 years</i>	8th Grade	4.5	3.0	3.0	1.7
	10th Grade	7.6	5.7	4.3	1.1
	12th Grade	9.3	8.0	6.6	3.9
<b>Parental Education:</b>					
<i>Any stratum</i>	8th Grade	2.5	2.4	2.0	1.2
	10th Grade	3.1	2.8	2.6	1.6
	12th Grade	4.0	3.6	2.8	2.0
<b>Racial/Ethnic Group:</b>					
<i>White</i>	8th Grade	5.6	5.5	5.1	2.4
	10th Grade	9.0	7.3	5.6	2.6
	12th Grade	6.3	6.3	5.3	4.6
<i>Black</i>	8th Grade	3.8	2.6	1.6	1.4
	10th Grade	5.0	5.0	3.3	1.9
	12th Grade	7.5	7.5	7.5	3.1
<i>Hispanic</i>	8th Grade	3.3	3.3	2.6	2.5
	10th Grade	6.1	3.8	2.0	1.9
	12th Grade	15.0	14.6	6.6	4.3

SOURCE: The Monitoring the Future Study, the University of Michigan.

**TABLE C-2c**  
**Design Effects for (a) Prevalence of Use or (b) a Change in**  
**Prevalence of Use Across Nonadjacent Years**

		<b>HALLUCINOGENS (UNADJUSTED AND ADJUSTED), LSD, COCAINE, AND OTHER COCAINE</b>			
		<u>Lifetime</u>	<u>Past 12 Months</u>	<u>Past 30 Days</u>	<u>Daily</u>
<b>SEGREGATED GROUPS:</b>					
<b>Total Sample:</b> Any Region ( <i>Northeast, North Central, South, and West</i> ); Any Population Density Stratum ( <i>Large MSA, Other MSA, and Non-MSA</i> )					
	8th Grade	6.2	4.9	3.2	1.2
	10th Grade	6.2	4.9	3.2	1.2
	12th Grade	6.2	4.9	3.2	1.2
<b>CROSS-CLASS GROUPS:</b>					
<b>Gender:</b>					
<i>Male</i>	8th Grade	4.3	3.7	2.9	1.2
	10th Grade	4.3	3.7	2.9	1.2
	12th Grade	4.3	3.7	2.9	1.2
<i>Female</i>	8th Grade	4.4	3.6	2.2	1.2
	10th Grade	4.4	3.6	2.2	1.2
	12th Grade	4.4	3.6	2.2	1.2
<b>College Plans:</b>					
<i>None or under 4 yrs.</i>	8th Grade	2.2	2.0	1.6	1.2
	10th Grade	2.2	2.0	1.6	1.2
	12th Grade	2.2	2.0	1.6	1.2
<i>Complete 4 years</i>	8th Grade	6.0	4.4	3.0	1.2
	10th Grade	6.0	4.4	3.0	1.2
	12th Grade	6.0	4.4	3.0	1.2
<b>Parental Education:</b>					
<i>Any stratum</i>	8th Grade	2.4	2.1	1.7	1.2
	10th Grade	2.4	2.1	1.7	1.2
	12th Grade	2.4	2.1	1.7	1.2
<b>Racial/Ethnic Group:</b>					
<i>White</i>	8th Grade	5.3	4.8	3.5	1.5
	10th Grade	5.3	4.8	3.5	1.5
	12th Grade	5.3	4.8	3.5	1.5
<i>Black</i>	8th Grade	1.8	1.8	1.6	1.5
	10th Grade	1.8	1.8	1.6	1.5
	12th Grade	1.8	1.8	1.6	1.5
<i>Hispanic</i>	8th Grade	7.6	4.1	2.9	1.5
	10th Grade	7.6	4.1	2.9	1.5
	12th Grade	7.6	4.1	2.9	1.5

SOURCE: The Monitoring the Future Study, the University of Michigan.



**TABLE C-2d**  
**Design Effects for (a) Prevalence of Use or (b) a Change in**  
**Prevalence of Use Across Nonadjacent Years**

		<b>NITRITES, PCP, CRACK COCAINE, HEROIN (INCLUDING HEROIN WITH AND WITHOUT A NEEDLE), METHAMPHETAMINE, ICE, METHAQUALONE, ROHYPNOL, GHB, KETAMINE, AND STEROIDS</b>			
		<u>Lifetime</u>	<u>Past 12 Months</u>	<u>Past 30 Days</u>	<u>Daily</u>
<b>SEGREGATED GROUPS:</b>					
<b>Total Sample:</b> Any Region ( <i>Northeast, North Central, South, and West</i> ); Any Population Density Stratum ( <i>Large MSA, Other MSA, and Non-MSA</i> )					
	8th Grade	2.0	1.5	1.5	1.2
	10th Grade	2.0	1.5	1.5	1.2
	12th Grade	2.0	1.5	1.5	1.2
<b>CROSS-CLASS GROUPS:</b>					
<b>Gender:</b>					
<i>Male</i>	8th Grade	1.4	1.4	1.4	1.2
	10th Grade	1.4	1.4	1.4	1.2
	12th Grade	1.4	1.4	1.4	1.2
<i>Female</i>	8th Grade	2.1	1.7	1.5	1.2
	10th Grade	2.1	1.7	1.5	1.2
	12th Grade	2.1	1.7	1.5	1.2
<b>College Plans:</b>					
<i>None or under 4 yrs.</i>	8th Grade	1.6	1.6	1.6	1.2
	10th Grade	1.6	1.6	1.6	1.2
	12th Grade	1.6	1.6	1.6	1.2
<i>Complete 4 years</i>	8th Grade	1.7	1.4	1.2	1.2
	10th Grade	1.7	1.4	1.2	1.2
	12th Grade	1.7	1.4	1.2	1.2
<b>Parental Education:</b>					
<i>Any stratum</i>	8th Grade	1.4	1.4	1.4	1.2
	10th Grade	1.4	1.4	1.4	1.2
	12th Grade	1.4	1.4	1.4	1.2
<b>Racial/Ethnic Group:</b>					
<i>White</i>	8th Grade	2.0	1.9	1.8	1.5
	10th Grade	2.0	1.9	1.8	1.5
	12th Grade	2.0	1.9	1.8	1.5
<i>Black</i>	8th Grade	2.3	2.3	2.3	1.5
	10th Grade	2.3	2.3	2.3	1.5
	12th Grade	2.3	2.3	2.3	1.5
<i>Hispanic</i>	8th Grade	2.5	2.0	1.9	1.5
	10th Grade	2.5	2.0	1.9	1.5
	12th Grade	2.5	2.0	1.9	1.5

SOURCE: The Monitoring the Future Study, the University of Michigan.

**TABLE C-2e**  
**Design Effects for (a) Prevalence of Use or (b) a Change in**  
**Prevalence of Use Across Nonadjacent Years**

		<b>HALLUCINOGENS OTHER THAN LSD, MDMA (ECSTASY), NARCOTICS OTHER THAN HEROIN, RITALIN, SEDATIVES (BARBITURATES), TRANQUILIZERS, BIDIS, KRETEKS, ANDROSTENEDIONE, AND CREATINE</b>			
		<u>Lifetime</u>	<u>Past 12 Months</u>	<u>Past 30 Days</u>	<u>Daily</u>
<b>SEGREGATED GROUPS:</b>					
<b>Total Sample:</b> Any Region (Northeast, North Central, South, and West); Any Population Density Stratum (Large MSA, Other MSA, and Non-MSA)					
	8th Grade	2.9	2.6	1.7	1.2
	10th Grade	2.9	2.6	1.7	1.2
	12th Grade	2.9	2.6	1.7	1.2
<b>CROSS-CLASS GROUPS:</b>					
<b>Gender:</b>					
<i>Male</i>	8th Grade	2.4	2.4	1.9	1.2
	10th Grade	2.4	2.4	1.9	1.2
	12th Grade	2.4	2.4	1.9	1.2
<i>Female</i>	8th Grade	2.2	1.9	1.4	1.2
	10th Grade	2.2	1.9	1.4	1.2
	12th Grade	2.2	1.9	1.4	1.2
<b>College Plans:</b>					
<i>None or under 4 yrs.</i>	8th Grade	2.2	1.9	1.4	1.2
	10th Grade	2.2	1.9	1.4	1.2
	12th Grade	2.2	1.9	1.4	1.2
<i>Complete 4 years</i>	8th Grade	2.2	1.9	1.4	1.2
	10th Grade	2.2	1.9	1.4	1.2
	12th Grade	2.2	1.9	1.4	1.2
<b>Parental Education:</b>					
<i>Any stratum</i>	8th Grade	2.2	1.9	1.4	1.2
	10th Grade	2.2	1.9	1.4	1.2
	12th Grade	2.2	1.9	1.4	1.2
<b>Racial/Ethnic Group:</b>					
<i>White</i>	8th Grade	3.1	3.1	2.4	1.5
	10th Grade	3.1	3.1	2.4	1.5
	12th Grade	3.1	3.1	2.4	1.5
<i>Black</i>	8th Grade	1.9	1.9	1.8	1.5
	10th Grade	1.9	1.9	1.8	1.5
	12th Grade	1.9	1.9	1.8	1.5
<i>Hispanic</i>	8th Grade	2.0	1.8	1.6	1.5
	10th Grade	2.0	1.8	1.6	1.5
	12th Grade	2.0	1.8	1.6	1.5

SOURCE: The Monitoring the Future Study, the University of Michigan.

**TABLE C-2f**  
**Design Effects for (a) Prevalence of Use or (b) a Change in**  
**Prevalence of Use Across Nonadjacent Years**

		<b>INHALANTS AND AMPHETAMINES (UNADJUSTED AND ADJUSTED)</b>			
		<u>Lifetime</u>	<u>Past 12 Months</u>	<u>Past 30 Days</u>	<u>Daily</u>
<b>SEGREGATED GROUPS:</b>					
<b>Total Sample:</b> Any Region ( <i>Northeast, North Central, South, and West</i> ); Any Population Density Stratum ( <i>Large MSA, Other MSA, and Non-MSA</i> )					
	8th Grade	4.8	4.0	2.4	1.2
	10th Grade	4.8	4.0	2.4	1.2
	12th Grade	4.8	4.0	2.4	1.2
<b>CROSS-CLASS GROUPS:</b>					
<b>Gender:</b>					
<i>Male</i>	8th Grade	3.4	2.9	2.0	1.2
	10th Grade	3.4	2.9	2.0	1.2
	12th Grade	3.4	2.9	2.0	1.2
<i>Female</i>	8th Grade	3.5	3.4	2.1	1.2
	10th Grade	3.5	3.4	2.1	1.2
	12th Grade	3.5	3.4	2.1	1.2
<b>College Plans:</b>					
<i>None or under 4 yrs.</i>	8th Grade	2.1	1.8	1.5	1.2
	10th Grade	2.1	1.8	1.5	1.2
	12th Grade	2.1	1.8	1.5	1.2
<i>Complete 4 years</i>	8th Grade	4.0	3.5	2.3	1.2
	10th Grade	4.0	3.5	2.3	1.2
	12th Grade	4.0	3.5	2.3	1.2
<b>Parental Education:</b>					
<i>Any stratum</i>	8th Grade	2.3	2.1	1.6	1.2
	10th Grade	2.3	2.1	1.6	1.2
	12th Grade	2.3	2.1	1.6	1.2
<b>Racial/Ethnic Group:</b>					
<i>White</i>	8th Grade	4.1	4.0	2.3	1.5
	10th Grade	4.1	4.0	2.3	1.5
	12th Grade	4.1	4.0	2.3	1.5
<i>Black</i>	8th Grade	4.5	3.0	2.3	1.5
	10th Grade	4.5	3.0	2.3	1.5
	12th Grade	4.5	3.0	2.3	1.5
<i>Hispanic</i>	8th Grade	3.3	2.9	1.9	1.5
	10th Grade	3.3	2.9	1.9	1.5
	12th Grade	3.3	2.9	1.9	1.5

SOURCE: The Monitoring the Future Study, the University of Michigan.

**TABLE C-2g**  
**Design Effects for (a) Prevalence of Use or (b) a Change in**  
**Prevalence of Use Across Nonadjacent Years**

		<u>ALCOHOL AND BEEN DRUNK</u>		<u>CIGARETTES AND SMOKELESS TOBACCO</u>	
		Lifetime, Past 12 Months, Past 30 Days, 5+ $\frac{1}{2}$ Weeks	Daily	Lifetime, Past 30 Days, Daily	Half-pack or More per Day
<b>SEGREGATED GROUPS:</b>					
<b>Total Sample:</b> Any Region ( <i>Northeast, North Central, South, and West</i> ); Any Population Density Stratum ( <i>Large MSA, Other MSA, and Non-MSA</i> )					
	8th Grade	5.2	1.4	5.4	3.9
	10th Grade	5.2	1.4	5.4	3.9
	12th Grade	5.2	1.4	5.4	3.9
<b>CROSS-CLASS GROUPS:</b>					
<b>Gender:</b>					
<i>Male</i>	8th Grade	2.9	1.4	2.8	2.2
	10th Grade	2.9	1.4	2.8	2.2
	12th Grade	2.9	1.4	2.8	2.2
<i>Female</i>	8th Grade	4.2	1.4	5.1	3.3
	10th Grade	4.2	1.4	5.1	3.3
	12th Grade	4.2	1.4	5.1	3.3
<b>College Plans:</b>					
<i>None or under 4 yrs.</i>	8th Grade	2.5	1.4	2.3	2.2
	10th Grade	2.5	1.4	2.3	2.2
	12th Grade	2.5	1.4	2.3	2.2
<i>Complete 4 years</i>	8th Grade	4.3	1.4	4.3	2.7
	10th Grade	4.3	1.4	4.3	2.7
	12th Grade	4.3	1.4	4.3	2.7
<b>Parental Education:</b>					
<i>Any stratum</i>	8th Grade	2.3	1.4	2.4	2.0
	10th Grade	2.3	1.4	2.4	2.0
	12th Grade	2.3	1.4	2.4	2.0
<b>Racial/Ethnic Group:</b>					
<i>White</i>	8th Grade	4.5	1.8	4.6	3.3
	10th Grade	4.5	1.8	4.6	3.3
	12th Grade	4.5	1.8	4.6	3.3
<i>Black</i>	8th Grade	5.6	1.8	3.0	1.8
	10th Grade	5.6	1.8	3.0	1.8
	12th Grade	5.6	1.8	3.0	1.8
<i>Hispanic</i>	8th Grade	3.8	1.8	3.4	2.4
	10th Grade	3.8	1.8	3.4	2.4
	12th Grade	3.8	1.8	3.4	2.4

SOURCE: The Monitoring the Future Study, the University of Michigan.

**TABLE C-3a**  
**Design Effects for Subgroup Comparisons within Any Single Year**

		<b>INDEX OF ANY ILLICIT DRUG OTHER THAN MARIJUANA</b>			
		<u>Lifetime</u>	<u>Past 12 Months</u>	<u>Past 30 Days</u>	<u>Daily</u>
<b>SEGREGATED GROUPS:</b>					
<b>Total Sample:</b> Any Region ( <i>Northeast, North Central, South, and West</i> ); Any Population Density Stratum ( <i>Large MSA, Other MSA, and Non-MSA</i> )					
	8th Grade	5.6	4.6	3.3	1.3
	10th Grade	6.2	5.0	3.4	1.4
	12th Grade	7.2	6.4	4.6	2.0
<b>CROSS-CLASS GROUPS:</b>					
<b>Gender:</b>					
<i>Male</i>	8th Grade	2.8	2.5	2.2	1.3
	10th Grade	3.1	2.7	2.4	1.2
	12th Grade	3.2	2.9	2.4	1.7
<i>Female</i>	8th Grade	3.1	2.8	2.1	1.2
	10th Grade	3.3	2.9	2.2	1.1
	12th Grade	3.5	3.3	2.8	1.6
<b>College Plans:</b>					
<i>None or under 4 yrs.</i>	8th Grade	2.0	1.9	1.6	1.2
	10th Grade	2.2	2.1	1.8	1.4
	12th Grade	2.1	1.9	1.6	1.5
<i>Complete 4 years</i>	8th Grade	3.5	2.8	2.3	1.2
	10th Grade	4.1	3.3	2.5	1.1
	12th Grade	4.4	3.8	3.0	1.7
<b>Parental Education:</b>					
<i>Any stratum</i>	8th Grade	2.1	2.0	1.6	1.1
	10th Grade	2.2	2.0	1.7	1.2
	12th Grade	2.4	2.2	1.7	1.4
<b>Racial/Ethnic Group:</b>					
<i>White</i>	8th Grade	3.6	3.4	2.8	1.8
	10th Grade	4.2	3.8	2.9	1.9
	12th Grade	3.7	3.6	2.8	2.2
<i>Black</i>	8th Grade	2.6	2.5	1.8	1.5
	10th Grade	2.9	2.6	2.4	1.6
	12th Grade	3.4	3.1	2.9	2.0
<i>Hispanic</i>	8th Grade	3.4	2.7	2.5	1.8
	10th Grade	4.0	2.8	2.3	1.6
	12th Grade	5.7	4.9	2.9	2.4

SOURCE: The Monitoring the Future Study, the University of Michigan.

**TABLE C-3b**  
**Design Effects for Subgroup Comparisons within Any Single Year**

		<b>INDEX OF ANY ILLICIT DRUG, INDEX OF ANY ILLICIT DRUG INCLUDING INHALANTS, AND MARIJUANA</b>			
		<u>Lifetime</u>	<u>Past 12 Months</u>	<u>Past 30 Days</u>	<u>Daily</u>
<b>SEGREGATED GROUPS:</b>					
<b>Total Sample:</b> Any Region ( <i>Northeast, North Central, South, and West</i> ); Any Population Density Stratum ( <i>Large MSA, Other MSA, and Non-MSA</i> )					
	8th Grade	5.8	4.8	4.3	1.6
	10th Grade	7.5	6.2	4.7	1.7
	12th Grade	10.7	10.2	8.1	3.6
<b>CROSS-CLASS GROUPS:</b>					
<b>Gender:</b>					
<i>Male</i>	8th Grade	2.4	2.4	2.4	1.5
	10th Grade	3.4	3.0	3.0	1.5
	12th Grade	3.8	3.4	3.0	2.7
<i>Female</i>	8th Grade	3.4	3.0	2.4	1.3
	10th Grade	4.0	3.4	2.7	1.1
	12th Grade	4.6	4.6	4.5	2.6
<b>College Plans:</b>					
<i>None or under 4 yrs.</i>	8th Grade	2.3	2.3	2.0	1.3
	10th Grade	2.8	2.8	2.7	2.0
	12th Grade	2.4	2.4	2.1	2.1
<i>Complete 4 years</i>	8th Grade	3.3	2.4	2.4	1.5
	10th Grade	5.1	4.0	3.2	1.1
	12th Grade	6.1	5.3	4.5	3.0
<b>Parental Education:</b>					
<i>Any stratum</i>	8th Grade	2.1	2.1	1.9	1.1
	10th Grade	2.5	2.3	2.2	1.4
	12th Grade	3.0	2.8	2.3	1.9
<b>Racial/Ethnic Group:</b>					
<i>White</i>	8th Grade	4.0	3.9	3.7	2.1
	10th Grade	5.9	4.9	4.0	2.2
	12th Grade	4.3	4.3	3.7	3.4
<i>Black</i>	8th Grade	2.9	2.2	1.6	1.4
	10th Grade	3.6	3.6	2.6	1.9
	12th Grade	5.0	5.0	5.0	2.5
<i>Hispanic</i>	8th Grade	2.6	2.6	2.2	2.1
	10th Grade	4.2	2.9	2.0	1.9
	12th Grade	9.4	9.2	4.5	3.2

SOURCE: The Monitoring the Future Study, the University of Michigan.

**TABLE C-3c**  
**Design Effects for Subgroup Comparisons within Any Single Year**

		<b>HALLUCINOGENS (UNADJUSTED AND ADJUSTED), LSD, COCAINE, AND OTHER COCAINE</b>			
		Lifetime	Past 12 Months	Past 30 Days	Daily
<b>SEGREGATED GROUPS:</b>					
<b>Total Sample:</b> Any Region ( <i>Northeast, North Central, South, and West</i> ); Any Population Density Stratum ( <i>Large MSA, Other MSA, and Non-MSA</i> )					
	8th Grade	6.2	4.9	3.2	1.2
	10th Grade	6.2	4.9	3.2	1.2
	12th Grade	6.2	4.9	3.2	1.2
<b>CROSS-CLASS GROUPS:</b>					
<b>Gender:</b>					
<i>Male</i>	8th Grade	3.2	2.8	2.4	1.1
	10th Grade	3.2	2.8	2.4	1.1
	12th Grade	3.2	2.8	2.4	1.1
<i>Female</i>	8th Grade	3.2	2.8	2.0	1.1
	10th Grade	3.2	2.8	2.0	1.1
	12th Grade	3.2	2.8	2.0	1.1
<b>College Plans:</b>					
<i>None or under 4 yrs.</i>	8th Grade	2.0	1.9	1.4	1.1
	10th Grade	2.0	1.9	1.4	1.1
	12th Grade	2.0	1.9	1.4	1.1
<i>Complete 4 years</i>	8th Grade	4.2	3.2	2.4	1.1
	10th Grade	4.2	3.2	2.4	1.1
	12th Grade	4.2	3.2	2.4	1.1
<b>Parental Education:</b>					
<i>Any stratum</i>	8th Grade	2.1	1.9	1.5	1.1
	10th Grade	2.1	1.9	1.5	1.1
	12th Grade	2.1	1.9	1.5	1.1
<b>Racial/Ethnic Group:</b>					
<i>White</i>	8th Grade	3.7	3.4	2.7	1.5
	10th Grade	3.7	3.4	2.7	1.5
	12th Grade	3.7	3.4	2.7	1.5
<i>Black</i>	8th Grade	1.8	1.8	1.6	1.5
	10th Grade	1.8	1.8	1.6	1.5
	12th Grade	1.8	1.8	1.6	1.5
<i>Hispanic</i>	8th Grade	5.1	3.1	2.4	1.5
	10th Grade	5.1	3.1	2.4	1.5
	12th Grade	5.1	3.1	2.4	1.5

SOURCE: The Monitoring the Future Study, the University of Michigan.

**TABLE C-3d**  
**Design Effects for Subgroup Comparisons within Any Single Year**

		<b>NITRITES, PCP, CRACK COCAINE, HEROIN (INCLUDING HEROIN WITH AND WITHOUT A NEEDLE), METHAMPHETAMINE, ICE, METHAQUALONE, ROHYPNOL, GHB, KETAMINE, AND STEROIDS</b>			
		<u>Lifetime</u>	<u>Past 12 Months</u>	<u>Past 30 Days</u>	<u>Daily</u>
<b>SEGREGATED GROUPS:</b>					
<b>Total Sample:</b> Any Region ( <i>Northeast, North Central, South, and West</i> ); Any Population Density Stratum ( <i>Large MSA, Other MSA, and Non-MSA</i> )					
	8th Grade	2.0	1.5	1.5	1.2
	10th Grade	2.0	1.5	1.5	1.2
	12th Grade	2.0	1.5	1.5	1.2
<b>CROSS-CLASS GROUPS:</b>					
<b>Gender:</b>					
<i>Male</i>	8th Grade	1.3	1.3	1.3	1.1
	10th Grade	1.3	1.3	1.3	1.1
	12th Grade	1.3	1.3	1.3	1.1
<i>Female</i>	8th Grade	1.9	1.5	1.3	1.1
	10th Grade	1.9	1.5	1.3	1.1
	12th Grade	1.9	1.5	1.3	1.1
<b>College Plans:</b>					
<i>None or under 4 yrs.</i>	8th Grade	1.4	1.4	1.4	1.1
	10th Grade	1.4	1.4	1.4	1.1
	12th Grade	1.4	1.4	1.4	1.1
<i>Complete 4 years</i>	8th Grade	1.5	1.3	1.1	1.1
	10th Grade	1.5	1.3	1.1	1.1
	12th Grade	1.5	1.3	1.1	1.1
<b>Parental Education:</b>					
<i>Any stratum</i>	8th Grade	1.3	1.3	1.3	1.1
	10th Grade	1.3	1.3	1.3	1.1
	12th Grade	1.3	1.3	1.3	1.1
<b>Racial/Ethnic Group:</b>					
<i>White</i>	8th Grade	2.0	1.9	1.8	1.5
	10th Grade	2.0	1.9	1.8	1.5
	12th Grade	2.0	1.9	1.8	1.5
<i>Black</i>	8th Grade	2.0	2.0	2.0	1.5
	10th Grade	2.0	2.0	2.0	1.5
	12th Grade	2.0	2.0	2.0	1.5
<i>Hispanic</i>	8th Grade	2.1	2.0	1.9	1.5
	10th Grade	2.1	2.0	1.9	1.5
	12th Grade	2.1	2.0	1.9	1.5

SOURCE: The Monitoring the Future Study, the University of Michigan.



**TABLE C-3e**  
**Design Effects for Subgroup Comparisons within Any Single Year**

		<b>HALLUCINOGENS OTHER THAN LSD, MDMA (ECSTASY), NARCOTICS OTHER THAN HEROIN, RITALIN, SEDATIVES (BARBITURATES), TRANQUILIZERS, BIDIS, KRETEKS, ANDROSTENEDIONE, AND CREATINE</b>			
		<u>Lifetime</u>	<u>Past 12 Months</u>	<u>Past 30 Days</u>	<u>Daily</u>
<b>SEGREGATED GROUPS:</b>					
<b>Total Sample:</b> Any Region ( <i>Northeast, North Central, South, and West</i> ); Any Population Density Stratum ( <i>Large MSA, Other MSA, and Non-MSA</i> )					
	8th Grade	2.9	2.6	1.7	1.2
	10th Grade	2.9	2.6	1.7	1.2
	12th Grade	2.9	2.6	1.7	1.2
<b>CROSS-CLASS GROUPS:</b>					
<b>Gender:</b>					
<i>Male</i>	8th Grade	2.1	2.1	1.6	1.1
	10th Grade	2.1	2.1	1.6	1.1
	12th Grade	2.1	2.1	1.6	1.1
<i>Female</i>	8th Grade	2.0	1.6	1.3	1.1
	10th Grade	2.0	1.6	1.3	1.1
	12th Grade	2.0	1.6	1.3	1.1
<b>College Plans:</b>					
<i>None or under 4 yrs.</i>	8th Grade	2.0	1.6	1.3	1.1
	10th Grade	2.0	1.6	1.3	1.1
	12th Grade	2.0	1.6	1.3	1.1
<i>Complete 4 years</i>	8th Grade	2.0	1.6	1.3	1.1
	10th Grade	2.0	1.6	1.3	1.1
	12th Grade	2.0	1.6	1.3	1.1
<b>Parental Education:</b>					
<i>Any stratum</i>	8th Grade	2.0	1.6	1.3	1.1
	10th Grade	2.0	1.6	1.3	1.1
	12th Grade	2.0	1.6	1.3	1.1
<b>Racial/Ethnic Group:</b>					
<i>White</i>	8th Grade	2.5	2.5	2.1	1.5
	10th Grade	2.5	2.5	2.1	1.5
	12th Grade	2.5	2.5	2.1	1.5
<i>Black</i>	8th Grade	1.9	1.9	1.8	1.5
	10th Grade	1.9	1.9	1.8	1.5
	12th Grade	1.9	1.9	1.8	1.5
<i>Hispanic</i>	8th Grade	2.0	1.8	1.6	1.5
	10th Grade	2.0	1.8	1.6	1.5
	12th Grade	2.0	1.8	1.6	1.5

SOURCE: The Monitoring the Future Study, the University of Michigan.

**TABLE C-3f**  
**Design Effects for Subgroup Comparisons within Any Single Year**

		<b>INHALANTS AND AMPHETAMINES (UNADJUSTED AND ADJUSTED)</b>			
		<u>Lifetime</u>	<u>Past 12 Months</u>	<u>Past 30 Days</u>	<u>Daily</u>
<b>SEGREGATED GROUPS:</b>					
<b>Total Sample:</b> Any Region ( <i>Northeast, North Central, South, and West</i> ); Any Population Density Stratum ( <i>Large MSA, Other MSA, and Non-MSA</i> )					
	8th Grade	4.8	4.0	2.4	1.2
	10th Grade	4.8	4.0	2.4	1.2
	12th Grade	4.8	4.0	2.4	1.2
<b>CROSS-CLASS GROUPS:</b>					
<b>Gender:</b>					
<i>Male</i>	8th Grade	2.7	2.4	1.9	1.1
	10th Grade	2.7	2.4	1.9	1.1
	12th Grade	2.7	2.4	1.9	1.1
<i>Female</i>	8th Grade	2.7	2.7	1.9	1.1
	10th Grade	2.7	2.7	1.9	1.1
	12th Grade	2.7	2.7	1.9	1.1
<b>College Plans:</b>					
<i>None or under 4 yrs.</i>	8th Grade	1.9	1.5	1.3	1.1
	10th Grade	1.9	1.5	1.3	1.1
	12th Grade	1.9	1.5	1.3	1.1
<i>Complete 4 years</i>	8th Grade	3.0	2.7	2.0	1.1
	10th Grade	3.0	2.7	2.0	1.1
	12th Grade	3.0	2.7	2.0	1.1
<b>Parental Education:</b>					
<i>Any stratum</i>	8th Grade	2.0	1.9	1.4	1.1
	10th Grade	2.0	1.9	1.4	1.1
	12th Grade	2.0	1.9	1.4	1.1
<b>Racial/Ethnic Group:</b>					
<i>White</i>	8th Grade	3.1	3.0	2.0	1.5
	10th Grade	3.1	3.0	2.0	1.5
	12th Grade	3.1	3.0	2.0	1.5
<i>Black</i>	8th Grade	3.3	2.4	2.0	1.5
	10th Grade	3.3	2.4	2.0	1.5
	12th Grade	3.3	2.4	2.0	1.5
<i>Hispanic</i>	8th Grade	2.6	2.4	1.9	1.5
	10th Grade	2.6	2.4	1.9	1.5
	12th Grade	2.6	2.4	1.9	1.5

SOURCE: The Monitoring the Future Study, the University of Michigan.

**TABLE C-3g**  
**Design Effects for Subgroup Comparisons within Any Single Year**

		<u>ALCOHOL AND BEEN DRUNK</u>		<u>CIGARETTES AND SMOKELESS TOBACCO</u>	
		Lifetime, Past 12 Months, Past 30 Days, 5+ <sup>1</sup> / <sub>2</sub> Weeks	<u>Daily</u>	Lifetime, Past 30 Days, Daily	Half-pack or More per Day
<b>SEGREGATED GROUPS:</b>					
<b>Total Sample:</b> Any Region ( <i>Northeast, North Central, South, and West</i> ); Any Population Density Stratum ( <i>Large MSA, Other MSA, and Non-MSA</i> )					
	8th Grade	5.2	1.4	5.4	3.9
	10th Grade	5.2	1.4	5.4	3.9
	12th Grade	5.2	1.4	5.4	3.9
<b>CROSS-CLASS GROUPS:</b>					
<b>Gender:</b>					
<i>Male</i>	8th Grade	2.4	1.3	2.3	2.0
	10th Grade	2.4	1.3	2.3	2.0
	12th Grade	2.4	1.3	2.3	2.0
<i>Female</i>	8th Grade	3.1	1.3	3.6	2.6
	10th Grade	3.1	1.3	3.6	2.6
	12th Grade	3.1	1.3	3.6	2.6
<b>College Plans:</b>					
<i>None or under 4 yrs.</i>	8th Grade	2.1	1.3	2.0	2.0
	10th Grade	2.1	1.3	2.0	2.0
	12th Grade	2.1	1.3	2.0	2.0
<i>Complete 4 years</i>	8th Grade	3.2	1.3	3.2	2.3
	10th Grade	3.2	1.3	3.2	2.3
	12th Grade	3.2	1.3	3.2	2.3
<b>Parental Education:</b>					
<i>Any stratum</i>	8th Grade	2.0	1.3	2.1	1.9
	10th Grade	2.0	1.3	2.1	1.9
	12th Grade	2.0	1.3	2.1	1.9
<b>Racial/Ethnic Group:</b>					
<i>White</i>	8th Grade	3.3	1.8	3.4	2.6
	10th Grade	3.3	1.8	3.4	2.6
	12th Grade	3.3	1.8	3.4	2.6
<i>Black</i>	8th Grade	4.0	1.8	2.4	1.8
	10th Grade	4.0	1.8	2.4	1.8
	12th Grade	4.0	1.8	2.4	1.8
<i>Hispanic</i>	8th Grade	2.9	1.8	2.7	2.1
	10th Grade	2.9	1.8	2.7	2.1
	12th Grade	2.9	1.8	2.7	2.1

SOURCE: The Monitoring the Future Study, the University of Michigan.

## Appendix D

### SUPPLEMENTAL TABLES FOR SECONDARY SCHOOL STUDENTS: TRENDS BY SUBGROUP

Trend data for the population subgroups discussed in this volume (defined by gender, college plans, region, community size, level of parental education, and racial/ethnic distinctions) are presented here for the major classes of licit and illicit drugs. Due to the sheer quantity of information such trend tables generate, we have selected the prevalence periods that seem most useful for understanding differences by subgroup. For most drugs, the trends are given only for annual prevalence. Other prevalence rates are provided for alcohol, cigarettes, and smokeless tobacco.

The subgroups are the standard ones used throughout this volume and are operationally defined in Appendix B. The reader should note that *two-year moving averages* are given for the three racial/ethnic groups described in order to damp down random fluctuations in the trends for the minority groups, particularly among Hispanics. A footnote in each table describes the procedure.

For nearly all drugs there is one table presenting the subgroup trends for eighth- and tenth-grade students and a second table giving the longer-term trends for twelfth-grade students. However, for two of the drugs—sedatives (barbiturates) and narcotics other than heroin—in the eighth- and tenth-grade data have been omitted, as they are throughout the volume, because we are less certain about the validity of the answers provided by the younger students. Specifically, we believe that they often fail to omit substances that should be omitted (i.e., non-prescription substances). A few other drugs are simply not asked of eighth and tenth graders; thus only twelfth-grade tables are presented.

Sample sizes should be taken into account when interpreting the importance of any changes observed, of course. They are provided in the last two pages of the appendix. However, the reader should be aware that the numbers provided in those tables assume that all respondents were asked about the drug. Some of the drugs were not contained in all questionnaire forms, meaning that the subgroup and total Ns must be adjusted accordingly. The “Notes” section of the bottom of each table will indicate if only a fraction of the sample received the question.

Graphic presentations of the trends presented in these tables for the various demographic subgroups may be found in Occasional Paper No. 59, which is on the study’s Web site ([www.monitoringthefuture.org](http://www.monitoringthefuture.org)) under “Publications.”<sup>116</sup> This graphic presentation, which is

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<sup>116</sup>Johnston, L.D., O’Malley, P.M., & Bachman, J.G. (2003). *Demographic subgroup trends for various licit and illicit drugs, 1975-2002*. (Monitoring the Future Occasional Paper No. 59). Ann Arbor, MI: Institute for Social Research.

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printed in color to help distinguish the various subgroups, is published in electronic form only, due to the high cost of printing a document of this length in color.

### List of 2002 Appendix D Tables

Substance	Table Number		Time Period		
	8th/10th	12th	Annual	30-Day	Daily
Any illicit drug	D1	D2	X		
Any illicit drug other than marijuana	D3	D4	X		
Marijuana	D5	D6	X		
Inhalants	D7	D8	X		
Hallucinogens	D9	D10	X		
LSD	D11	D12	X		
Hallucinogens other than LSD	D13	D14	X		
MDMA (Ecstasy)	D15	D16	X		
Cocaine	D17	D18	X		
Crack	D19	D20	X		
Other cocaine	D21	D22	X		
Heroin	D23	D24	X		
Heroin with a needle	D25	D26	X		
Heroin without a needle	D27	D28	X		
Other narcotics	-	D29	X		
OxyContin	D30	D31	X		
Vicodin	D32	D33	X		
Amphetamines	D34	D35	X		
Ritalin	D36	D37	X		
Methamphetamine	D38	D39	X		
Ice (Crystal methamphetamine)	-	D40	X		
Sedatives (Barbiturates)	-	D41	X		
Tranquilizers	D42	D43	X		
Rohypnol	D44	D45	X		
Alcohol	D46	D47		X	
Been drunk	D48	D49		X	
5+ drinks in a row	D50	D51			X
Cigarettes	D52	D53		X	
Daily	D54	D55			X
1/2 pack+/day	D56	D57			X
Smokeless tobacco	D58	D59		X	
Daily	D60	D61			X
Steroids	D62	D63	X		
Weighted Ns by subgroups	D64	D65			
Race/ethnicity explanatory note for D tables	Last page				

**TABLE D-1**  
**Any Illicit Drug:<sup>a</sup> Trends in Annual Prevalence of Use by Subgroups for Eighth and Tenth Graders**

	Percentage who used in last twelve months																									
	8th Grade												10th Grade													
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	'01-'02 change	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	'01-'02 change
<i>Approx. N =</i>	17500	18600	18300	17300	17500	17800	18600	18100	16700	16700	16200	15100	14800	14800	15300	15800	17000	15600	15500	15000	13600	14300	14000	14300		
Total	11.3	12.9	15.1	18.5	21.4	23.6	22.1	21.0	20.5	19.5	19.5	17.7	-1.7s	21.4	20.4	24.7	30.0	33.3	37.5	38.5	35.0	35.9	36.4	37.2	34.8	-2.4s
Gender:																										
Male	11.7	11.9	15.2	19.4	22.3	23.6	22.6	21.3	21.3	19.7	21.3	19.2	-2.1s	21.6	20.4	25.1	31.8	33.7	38.8	40.1	35.3	37.0	39.4	39.6	35.9	-3.7s
Female	11.0	13.6	14.9	17.6	20.2	23.3	21.3	20.4	19.7	19.0	17.5	16.3	-1.2	21.1	20.1	24.0	28.0	32.5	36.3	36.8	34.7	34.6	33.5	35.0	33.7	-1.2
College Plans:																										
None or under 4 yrs.	22.8	25.6	30.7	34.6	38.4	40.3	39.6	41.3	39.9	38.9	38.5	36.8	-1.7	32.7	32.0	37.7	43.2	47.3	52.4	55.2	50.5	51.8	53.5	52.7	51.5	-1.2
Complete 4 yrs.	9.5	10.9	12.8	16.3	19.1	21.0	19.9	18.4	18.0	17.1	17.2	15.7	-1.5s	18.9	17.8	21.9	27.0	30.8	35.0	35.7	32.2	33.2	33.9	34.6	32.1	-2.5s
Region:																										
Northeast	9.3	10.6	11.5	16.6	17.9	20.3	20.2	16.0	18.2	16.6	18.1	13.8	-4.4s	21.8	19.0	26.9	29.6	32.4	37.7	37.8	39.0	38.2	34.0	37.4	35.2	-2.2
North Central	11.2	13.0	13.9	17.2	23.3	24.7	22.3	21.9	22.6	20.6	18.0	17.0	-1.0	21.7	20.7	22.4	28.5	32.1	37.6	37.7	32.0	35.2	34.8	35.9	33.7	-2.2
South	11.5	12.9	15.1	17.6	20.8	22.5	21.6	22.3	21.0	19.2	21.5	20.1	-1.4	19.2	17.9	23.3	29.2	33.2	37.9	38.7	35.1	34.8	36.0	36.7	33.9	-2.8
West	13.3	15.0	21.1	23.7	23.3	27.1	24.4	22.0	19.2	21.0	18.9	18.4	-0.5	23.7	25.5	28.9	34.4	36.1	36.8	40.2	34.5	36.0	41.6	40.7	37.7	-2.9
Population																										
Density:																										
Large MSA	10.5	12.0	13.1	16.2	15.2	23.4	20.5	19.8	19.1	18.1	16.4	15.9	-0.5	21.4	19.9	24.0	29.4	28.7	35.5	37.2	32.6	35.0	36.5	34.0	33.0	-0.9
Other MSA	12.1	14.4	17.3	21.5	23.7	24.9	22.6	21.4	19.5	18.8	21.5	18.3	-3.2s	22.0	20.8	25.1	32.7	35.5	40.0	40.0	36.9	37.3	36.6	39.0	36.9	-2.1
Non-MSA	10.8	11.2	12.9	14.0	20.3	21.4	22.9	21.6	24.3	22.7	19.1	18.9	-0.2	20.4	20.1	24.4	24.7	30.7	35.1	37.2	34.5	33.9	35.8	37.4	32.8	-4.6
Parental Education: <sup>b</sup>																										
1.0-2.0 (Low)	19.5	18.5	20.8	26.1	29.8	26.7	29.5	30.4	30.2	30.9	29.9	27.3	-2.6	25.5	24.8	29.2	32.6	38.2	39.5	38.3	36.6	42.2	42.4	39.0	39.4	+0.3
2.5-3.0	11.7	14.1	17.1	20.2	24.3	25.7	25.5	24.2	24.9	23.9	23.3	22.4	-1.0	23.0	21.3	25.4	31.1	37.1	39.1	40.8	39.1	39.4	39.2	41.6	39.4	-2.3
3.5-4.0	11.6	13.6	15.4	19.7	23.4	26.2	23.8	21.8	21.0	20.1	21.5	18.5	-2.9s	21.2	20.6	24.9	30.5	34.7	40.1	41.6	35.6	35.4	39.5	38.2	35.5	-2.7
4.5-5.0	8.7	10.2	12.8	15.7	17.4	21.3	19.3	17.8	15.6	14.6	15.0	14.5	-0.5	19.4	18.7	22.5	28.1	30.9	35.5	36.3	31.9	32.8	32.6	35.1	31.9	-3.2
5.5-6.0 (High)	10.2	10.1	11.8	14.9	17.7	19.8	16.8	17.1	15.8	15.0	13.4	12.1	-1.3	21.1	18.5	23.6	27.2	26.6	33.6	33.7	31.5	34.6	31.3	32.7	29.1	-3.6
Race (2-year average): <sup>c</sup>																										
White	—	11.8	13.6	15.7	19.2	22.4	23.0	21.5	19.9	19.1	19.0	18.3	-0.7	—	22.4	23.7	27.9	32.6	36.5	39.3	38.2	36.4	36.9	37.6	37.6	-0.1
Black	—	7.9	9.3	13.0	15.8	17.5	18.1	18.1	18.6	18.3	16.7	15.1	-1.6	—	10.8	11.9	18.5	23.6	27.3	30.2	28.9	28.4	29.7	30.5	28.5	-2.0
Hispanic	—	18.1	20.6	24.6	26.7	26.9	26.5	26.7	27.4	25.1	24.3	24.8	+0.5	—	23.6	26.3	30.3	34.3	40.0	41.3	38.1	38.4	39.3	38.8	36.2	-2.7

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available.

Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.

See Table D-64 for the number of subgroup cases. See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Use of "any illicit drug" includes any use of marijuana, LSD, other hallucinogens, crack, other cocaine, or heroin, or any use of amphetamines or tranquilizers not under a doctor's orders. The use of other narcotics and barbiturates has been excluded, because 8th and 10th graders appear to overreport their use (perhaps because they include the use of nonprescription drugs in their answers).

<sup>b</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

<sup>c</sup>To derive percentages for each racial subgroup, data for the specified year *and* the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**TABLE D-2**  
**Any Illicit Drug:<sup>a,b</sup> Trends in Annual Prevalence of Use by Subgroups for Twelfth Graders**

	Percentage who used in last twelve months																										'01-'02 change		
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000		2001	2002
	Class of:																												
	Approx. N = 9400 15400 17100 17800 15500 15900 17500 17700 16300 15900 16000 15200 16300 16300 16700 15200 15000 15800 16300 15400 15400 14300 15400 15200 13600 12800 12800 12900																												
Total	45.0	48.1	51.1	53.8	54.2	53.1	52.1	49.4	47.4	45.8	46.3	44.3	41.7	38.5	35.4	32.5	29.4	27.1	31.0	35.8	39.0	40.2	42.4	41.4	42.1	40.9	41.4	41.0	-0.5
Gender:																													
Male	49.0	52.6	55.4	58.6	58.1	56.0	53.6	51.8	49.7	48.0	48.3	45.7	43.2	40.6	37.7	34.3	32.1	29.0	33.5	38.6	41.5	43.4	44.1	45.2	45.0	43.4	43.8	43.5	-0.3
Female	41.4	43.0	46.7	48.7	50.1	49.8	50.8	46.3	44.4	42.8	43.8	42.3	39.7	36.1	32.8	30.1	26.2	24.7	27.9	32.7	35.8	36.2	40.0	37.2	38.9	38.0	38.4	37.8	-0.6
College Plans:																													
None or under 4 years	—	50.6	54.3	55.5	56.8	56.5	55.8	53.4	50.8	50.3	50.1	48.6	46.7	42.0	40.9	37.8	33.9	33.5	34.9	40.8	44.1	46.2	48.8	47.3	47.9	45.1	46.2	46.2	0.0
Complete 4 years	—	44.3	46.8	50.5	50.5	49.7	48.6	45.5	43.7	41.4	43.1	41.2	39.0	36.5	32.6	29.6	27.1	24.4	29.2	33.6	36.7	37.8	40.1	39.1	40.3	38.8	39.6	39.3	-0.3
Region:																													
Northeast North	51.5	55.3	56.8	61.6	62.9	58.9	58.8	55.1	53.8	54.7	53.2	49.7	45.8	41.2	36.0	36.4	31.9	28.7	36.1	39.4	41.7	44.6	47.7	46.2	42.5	46.2	47.4	45.7	-1.8
Central	45.5	47.6	51.9	54.6	55.0	53.1	53.4	50.3	46.9	42.4	45.7	45.0	42.7	39.7	38.7	34.0	31.3	27.8	30.8	36.5	40.9	40.9	40.6	38.1	42.1	38.9	42.0	41.6	-0.5
South	38.1	42.3	46.2	47.5	45.4	47.0	43.7	42.2	41.3	41.4	37.2	37.4	35.9	34.2	30.7	27.6	24.5	23.7	28.2	34.1	36.4	37.6	38.8	40.5	40.8	35.3	37.3	38.1	+0.8
West	48.3	49.7	50.0	53.2	56.4	55.8	55.5	51.7	50.7	49.1	53.3	47.8	45.7	41.8	39.5	34.4	32.6	31.1	31.8	34.7	38.2	39.1	45.9	43.1	44.2	47.4	41.9	40.5	-1.4
Population Density:																													
Large MSA	54.5	54.6	56.3	60.3	61.3	59.9	57.8	54.8	52.0	49.7	49.9	48.0	43.9	39.1	32.9	32.6	28.6	26.8	32.9	36.4	41.7	41.3	42.1	42.0	42.4	41.1	43.9	41.9	-2.0
Other MSA	45.0	47.8	52.4	54.5	55.2	53.8	52.1	49.8	49.6	46.7	46.5	45.1	42.7	40.5	36.3	33.5	33.0	27.3	31.7	37.8	39.0	42.3	44.2	42.1	43.3	42.6	41.0	42.4	+1.3
Non-MSA	38.8	43.7	45.2	47.4	47.6	47.0	47.6	44.0	41.1	41.4	43.0	40.0	37.6	34.3	36.0	30.1	23.8	27.0	28.4	31.6	35.9	35.4	39.2	39.3	39.9	37.5	39.4	37.1	-2.3
Parental Education: <sup>c</sup>																													
(Low)																													
1.0-2.0	—	43.4	45.3	47.7	50.2	49.5	48.1	44.3	45.1	42.7	42.8	38.1	35.4	35.8	28.4	26.6	28.7	27.7	29.5	32.9	37.7	36.6	40.3	38.9	40.9	41.3	38.8	35.3	-3.5
2.5-3.0	—	49.2	51.8	53.3	53.2	53.0	51.2	48.8	46.3	45.7	46.0	44.8	41.8	37.2	35.3	32.7	28.7	26.4	29.2	35.4	38.3	39.9	40.8	40.5	43.7	40.5	41.9	39.3	-2.6
3.5-4.0	—	48.9	53.1	55.1	56.1	54.2	52.8	50.8	46.5	47.6	47.2	45.6	42.2	38.6	37.7	33.8	29.6	28.1	31.6	36.4	38.8	40.4	42.0	42.9	42.9	41.6	42.7	43.2	+0.5
4.5-5.0	—	50.8	51.7	56.3	57.1	54.0	53.4	49.7	48.9	44.9	48.4	44.7	43.1	40.0	35.5	33.1	28.7	26.2	31.5	36.5	39.0	40.5	43.6	40.9	40.0	39.6	41.3	42.0	+0.7
5.5-6.0	—	51.3	51.8	59.1	54.3	55.0	54.8	48.5	46.1	45.5	44.5	44.5	43.5	40.6	36.3	33.3	31.9	26.8	33.4	35.7	40.7	40.6	44.0	41.8	42.3	41.1	40.1	40.6	+0.5
(High)																													
Race (2-year average): <sup>d</sup>																													
White	—	—	50.4	53.5	55.2	54.9	54.4	50.7	49.3	47.4	47.6	47.2	45.2	43.0	40.3	37.5	33.9	30.5	31.4	35.5	39.0	40.8	42.8	44.0	43.3	42.8	43.1	43.6	+0.5
Black	—	—	40.8	42.8	41.5	40.5	39.0	36.4	38.5	37.8	35.9	33.3	28.9	25.0	21.3	17.0	14.7	14.5	16.6	23.5	29.6	32.4	33.0	32.3	32.8	32.7	31.7	30.4	-1.4
Hispanic	—	—	49.9	49.5	48.4	48.1	46.8	42.7	42.0	43.1	43.9	42.8	38.9	35.4	30.1	26.4	29.4	30.3	28.8	31.2	35.5	38.0	41.2	41.9	42.5	44.8	41.8	39.0	-2.8

NOTES: Level of significance of difference between the two most recent classes:  $s = .05$ ,  $ss = .01$ ,  $sss = .001$ . '—' indicates data not available.  
 Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.  
 See Table D-65 for the number of subgroup cases. See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Use of "any illicit drug" includes any use of marijuana, LSD, other hallucinogens, crack, other cocaine, or heroin, or any use of other narcotics, amphetamines, barbiturates, methaqualone (excluded since 1990), or tranquilizers not under a doctor's orders.

<sup>b</sup>Beginning in 1982 the question about amphetamine use was revised to get respondents to exclude the inappropriate reporting of nonprescription amphetamines. The prevalence of use rate dropped slightly as a result of this methodological change.

<sup>c</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

<sup>d</sup>To derive percentages for each racial subgroup, data for the specified year *and* the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.



**TABLE D-3**  
**Any Illicit Drug Other Than Marijuana:<sup>a</sup> Trends in Annual Prevalence of Use by Subgroups**  
**for Eighth and Tenth Graders**

Percentage who used in last twelve months

	8th Grade											10th Grade														
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001 <sup>b</sup>	2002 <sup>b</sup>	'01-'02 change	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001 <sup>b</sup>	2002 <sup>b</sup>	'01-'02 change
	Approx. N = 17500 18600 18300 17300 17500 17800 18600 18100 16700 16700 16200 15100											14800 14800 15300 15800 17000 15600 15500 15000 13600 14300 14000 14300														
Total	8.4	9.3	10.4	11.3	12.6	13.1	11.8	11.0	10.5	10.2	†10.8	8.8	-2.0ss	12.2	12.3	13.9	15.2	17.5	18.4	18.2	16.6	16.7	16.7	†17.9	15.7	-2.1s
Gender:																										
Male	8.0	8.0	9.2	10.1	11.5	11.0	10.8	9.6	9.7	9.1	†10.0	8.1	-1.9s	11.2	11.1	13.4	14.1	15.8	17.2	17.2	15.6	15.9	16.7	†18.3	15.1	-3.2s
Female	8.8	10.4	11.5	12.3	13.5	14.7	12.6	12.1	11.2	10.9	†11.2	9.3	-1.9	13.1	13.2	14.3	16.0	18.9	19.6	19.1	17.5	17.3	16.6	†17.4	16.4	-1.0
College Plans:																										
None or under 4 yrs.	16.3	18.5	21.3	21.2	25.3	23.0	22.1	23.8	23.4	22.7	†21.5	19.7	-1.7	19.6	20.2	23.1	24.0	27.5	29.5	29.6	27.8	27.3	27.7	†32.1	27.1	-5.0
Complete 4 yrs.	7.2	8.0	8.9	9.9	10.9	11.6	10.6	9.4	9.0	8.7	†9.5	7.6	-1.9ss	10.7	10.5	12.0	13.3	15.7	16.5	16.3	14.6	15.0	15.0	†15.5	14.0	-1.5
Region:																										
Northeast	6.8	6.6	8.2	10.3	10.7	11.3	9.5	8.5	8.5	8.0	†9.5	5.8	-3.7s	10.6	9.6	12.8	13.7	14.1	17.2	16.0	17.2	18.2	14.7	†16.2	13.4	-2.8
North Central	8.6	10.4	9.4	10.2	14.0	14.3	12.5	10.5	11.9	11.2	†9.9	8.7	-1.2	13.2	12.9	12.8	14.8	19.0	20.0	16.2	14.4	16.1	15.8	†16.5	15.3	-1.3
South	8.6	9.7	11.0	11.7	12.5	12.6	11.8	12.5	11.2	10.3	†12.4	10.6	-1.9	11.9	12.2	14.7	15.3	18.4	18.6	20.8	18.3	16.8	17.5	†19.5	16.8	-2.7
West	9.3	9.8	13.4	12.7	12.7	14.0	13.0	11.1	9.3	10.5	†10.1	8.4	-1.7	12.7	14.1	15.6	17.2	17.2	17.4	18.7	15.8	15.7	18.5	†19.0	16.7	-2.2
Population																										
Density:																										
Large MSA	8.0	8.1	8.8	9.8	8.7	12.3	9.9	8.9	8.4	8.5	†9.7	7.4	-2.3	11.8	11.4	12.2	13.1	13.5	16.8	16.3	14.6	15.0	17.2	†15.6	14.3	-1.4
Other MSA	8.6	10.4	11.8	12.5	13.5	14.1	12.2	11.2	10.7	10.1	†11.8	9.2	-2.6s	12.3	12.3	14.1	16.1	18.5	19.5	18.0	16.6	17.3	15.6	†17.4	16.5	-0.9
Non-MSA	8.6	8.9	9.8	9.8	13.2	12.1	13.0	12.8	12.8	12.3	†10.3	9.8	-0.5	12.4	13.1	15.0	14.6	17.6	18.3	20.8	18.9	17.5	18.1	†21.5	16.1	-5.4s
Parental Education: <sup>c</sup>																										
1.0-2.0 (Low)	12.9	12.9	14.4	15.6	18.0	15.5	14.8	17.3	16.0	15.8	†14.3	13.0	-1.3	14.4	16.6	18.1	17.1	20.8	22.7	19.1	21.5	19.2	20.4	†19.6	21.0	+1.5
2.5-3.0	8.5	10.1	11.8	12.4	14.2	13.9	12.9	12.2	12.1	12.2	†13.2	10.9	-2.4	13.7	12.5	14.6	16.3	19.7	19.4	19.9	19.1	19.1	19.4	†20.3	18.3	-2.0
3.5-4.0	8.7	10.1	10.6	11.8	14.2	14.5	12.5	11.2	11.3	10.6	†11.7	9.0	-2.7s	12.1	12.7	14.8	15.9	18.3	19.9	19.8	16.4	16.5	17.4	†19.7	16.1	-3.6s
4.5-5.0	7.1	7.5	9.1	9.5	9.7	12.0	10.6	9.4	8.5	7.7	†8.9	7.6	-1.4	11.0	10.9	11.7	13.3	15.9	16.6	16.5	14.1	15.4	14.5	†15.6	13.7	-1.9
5.5-6.0 (High)	7.8	8.0	8.2	9.4	10.1	11.7	10.3	9.5	8.3	8.4	†8.0	6.5	-1.5	11.6	10.7	12.2	12.8	13.4	15.4	15.4	14.4	15.6	14.5	†14.6	12.2	-2.4
Race (2-year average): <sup>d</sup>																										
White	—	9.0	10.0	10.8	12.6	13.9	13.5	12.5	11.5	11.1	10.6	†10.3 <sup>d</sup>	(-0.9) <sup>e</sup>	—	13.7	14.4	15.4	17.7	20.0	20.5	19.7	18.7	18.6	19.2	†19.1 <sup>d</sup>	(-0.4) <sup>e</sup>
Black	—	4.9	5.0	5.9	5.7	5.3	4.7	4.0	4.1	3.8	3.9	†4.2 <sup>d</sup>	(+0.4) <sup>e</sup>	—	4.3	4.6	5.4	5.4	4.5	4.8	4.7	4.5	4.2	4.7	†4.6 <sup>d</sup>	(+1.5) <sup>e</sup>
Hispanic	—	12.2	13.7	15.2	15.3	14.7	13.6	13.5	14.5	13.9	12.2	†12.5 <sup>d</sup>	(-1.1) <sup>e</sup>	—	11.8	13.7	16.1	16.9	18.8	19.1	17.5	17.9	17.8	15.8	†16.2 <sup>d</sup>	(-1.3) <sup>e</sup>

NOTES: † indicates some change in the question. See relevant footnote. See relevant figure to assess the impact of the wording changes.

Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available.

Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.

See Table D-64 for the number of subgroup cases. See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Use of "any illicit drug" includes any use of marijuana, LSD, other hallucinogens, crack, other cocaine, or heroin, or any use of amphetamines or tranquilizers not under a doctor's orders. The use of other narcotics and barbiturates has been excluded, because 8th and 10th graders appear to overreport their use (perhaps because they include the use of nonprescription drugs in their answers).

<sup>b</sup>In 2001 the question text was changed on half of the questionnaire forms for each grade. "Other psychedelics" was changed to "other hallucinogens" and "shrooms" was added to the list of examples. For the tranquilizer list of examples, Miltown was replaced with Xanax. The 2000 data presented here are based on all unchanged forms. The 2001 data are based on the changed forms only; N is one-half of N indicated. In 2002 the remaining forms were changed. The 2002 data are based on the new questions only. Data for "hallucinogens" and "hallucinogens other than LSD" are also affected by these changes.

<sup>c</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

<sup>d</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates. The 2002 data comprise half of the 2001 sample data double-weighted and all of the 2002 sample data.

<sup>e</sup>This value is our best estimate of the actual change. See the explanatory note on the last page of Appendix D for details.

**TABLE D-4**  
**Any Illicit Drug Other Than Marijuana:<sup>a,b</sup> Trends in Annual Prevalence of Use by Subgroups for Twelfth Graders**

	Percentage who used in last twelve months																												'01-'02 change
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001 <sup>c</sup>	2002 <sup>c</sup>	
	Class of:																												
	Approx. N = 9400 15400 17100 17800 15500 15900 17500 17700 16300 15900 16000 15200 16300 16300 16700 15200 15000 15800 16300 15400 15400 14300 15400 15200 13600 12800 12800 12900																												
Total	26.2	25.4	26.0	27.1	28.2	30.4	34.0	30.1	28.4	28.0	27.4	25.9	24.1	21.1	20.0	17.9	16.2	14.9	17.1	18.0	19.4	19.8	20.7	20.2	20.7	20.4	‡21.6	20.9	-0.7
Gender:																													
Male	25.9	25.7	26.3	27.9	29.4	30.2	32.8	31.0	28.9	28.2	27.9	26.2	24.3	22.2	21.0	19.2	17.0	15.5	17.8	18.5	20.7	21.7	21.7	21.7	22.5	21.5	‡23.3	22.0	-1.3
Female	26.2	24.4	25.3	25.7	26.3	30.0	34.3	28.3	27.3	26.9	26.2	24.8	23.3	19.3	18.5	16.0	14.8	13.8	15.8	16.9	17.3	16.8	18.8	18.0	18.5	18.6	‡19.0	19.0	0.0
College Plans:																													
None or under 4 years	—	28.7	30.1	30.0	31.8	35.5	38.3	34.0	32.3	32.9	31.6	31.3	28.8	24.5	25.5	23.1	20.1	19.5	19.8	22.9	23.9	24.2	25.8	26.5	24.4	24.7	‡24.5	27.2	+2.7
Complete 4 years	—	20.9	20.8	22.7	23.5	25.5	30.1	26.0	24.7	23.3	24.1	22.2	21.3	19.0	17.2	15.2	14.3	13.0	15.9	16.0	17.5	17.9	18.4	17.8	19.4	18.5	‡19.9	19.0	-0.9
Region:																													
Northeast North	26.0	26.1	27.8	30.7	32.0	32.1	38.0	33.5	31.2	33.8	32.9	29.5	25.5	20.2	19.2	17.1	15.6	14.7	18.6	17.2	20.2	22.9	24.1	20.7	19.5	21.7	‡22.4	21.5	-0.9
Central South	29.2	26.1	27.7	26.8	27.6	30.9	36.1	31.1	28.6	26.1	25.9	25.1	22.7	20.3	21.5	18.0	17.4	15.5	16.4	20.1	19.1	19.2	18.9	19.8	20.9	18.9	‡24.0	19.9	-4.1
West	22.5	23.4	22.9	24.0	23.2	25.8	26.1	24.7	23.8	24.2	21.0	20.6	21.1	20.0	18.1	16.9	14.4	14.0	16.0	17.3	19.0	18.6	19.8	20.3	21.2	19.0	‡18.6	21.3	+2.8
West	28.2	26.6	26.0	28.8	33.3	35.2	38.7	32.7	33.0	31.3	33.0	31.6	29.5	24.8	22.3	20.4	17.9	15.8	18.5	17.3	19.9	19.2	20.9	20.0	20.8	23.2	‡22.6	21.1	-1.5
Population Density:																													
Large MSA	30.3	27.5	27.1	30.2	32.1	34.6	38.3	33.8	31.5	30.5	30.4	28.3	24.5	20.7	16.9	16.0	14.2	13.5	15.1	16.7	20.2	18.9	18.6	19.0	17.6	19.4	‡23.6	20.6	-3.0
Other MSA	26.3	25.8	26.8	27.3	28.7	30.1	33.3	30.0	29.7	27.8	26.9	26.4	24.5	22.7	20.9	18.5	17.9	14.9	18.2	19.2	19.2	20.2	21.5	20.4	21.6	20.9	‡21.2	21.6	+0.4
Non-MSA	23.4	23.3	24.2	24.2	24.7	27.5	31.4	27.0	24.4	26.2	25.5	23.1	23.0	18.4	21.1	18.4	14.9	16.1	16.8	17.2	18.7	19.8	21.2	21.3	22.4	20.7	‡20.3	20.2	-0.1
Parental Education: <sup>d</sup>																													
1.0-2.0	—	23.2	23.2	24.7	25.2	28.2	29.2	25.7	25.6	27.3	25.8	23.2	21.5	19.7	18.2	15.2	17.4	14.9	15.6	17.8	19.4	16.9	19.9	20.0	22.2	20.0	‡17.3	17.8	+0.5
2.5-3.0	—	25.6	27.0	26.4	27.6	30.7	33.5	30.4	28.1	28.2	27.4	27.0	24.2	20.5	20.0	17.9	16.8	15.0	16.1	18.5	19.4	19.7	19.4	20.1	21.0	19.9	‡20.9	20.3	-0.6
3.5-4.0	—	26.1	26.2	27.8	29.2	30.7	34.7	30.9	28.6	29.3	28.9	26.6	24.7	20.5	21.4	19.1	16.3	15.0	17.8	17.6	19.2	19.8	20.4	21.0	21.9	20.5	‡24.5	22.0	-2.5
4.5-5.0	—	27.2	25.9	27.3	28.7	29.9	34.8	29.4	30.0	26.2	27.1	24.9	23.8	21.7	19.3	17.5	14.6	14.3	17.5	18.4	19.4	19.3	21.0	19.1	19.3	20.1	‡20.1	21.2	+1.2
5.5-6.0	—	25.6	24.8	28.6	30.4	30.8	36.7	31.3	29.0	26.2	23.8	23.8	24.9	22.0	19.6	17.2	14.9	14.3	17.6	16.5	18.3	20.2	21.7	18.9	19.4	20.3	‡18.7	19.8	+1.1
Race (2-year average): <sup>e</sup>																													
White	—	—	26.6	27.7	28.8	30.6	34.5	32.1	31.2	30.2	29.6	28.2	26.6	24.4	22.5	21.0	18.7	17.1	17.9	19.4	20.3	21.2	22.3	23.1	22.9	22.7	23.0	‡23.8 <sup>e</sup>	(+0.7) <sup>f</sup>
Black	—	—	14.2	13.4	13.0	13.8	13.2	14.5	15.2	12.9	12.0	12.1	11.1	10.3	8.6	6.5	5.7	5.3	4.8	6.1	6.9	6.0	6.4	7.1	6.8	6.4	6.3	‡7.2 <sup>e</sup>	(-1.5) <sup>f</sup>
Hispanic	—	—	23.8	23.5	23.3	24.7	27.6	25.5	25.2	26.2	27.2	26.2	23.0	20.5	17.7	15.6	15.8	15.1	15.6	16.5	17.9	19.7	18.9	17.5	18.5	21.2	18.2	‡17.8 <sup>e</sup>	(-3.7) <sup>f</sup>

NOTES: ‡ indicates some change in the question. See relevant footnote. See relevant figure to assess the impact of the wording changes.  
 Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available.  
 Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.  
 See Table D-65 for the number of subgroup cases. See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Use of "any illicit drug" includes any use of marijuana, LSD, other hallucinogens, crack, other cocaine, or heroin, or any use of other narcotics, amphetamines, barbiturates, methaqualone (excluded since 1990), or tranquilizers not under a doctor's orders.

<sup>b</sup>Beginning in 1982 the question about amphetamine use was revised to get respondents to exclude the inappropriate reporting of nonprescription amphetamines. The prevalence of use rate dropped slightly as a result of this methodological change.

<sup>c</sup>In 2001 the question text was changed on half of the questionnaire forms for each grade. "Other psychedelics" was changed to "other hallucinogens" and "shrooms" was added to the list of examples. For the tranquilizer list of examples, Miltown was replaced with Xanax. The 2000 data presented here are based on all unchanged forms. The 2001 data are based on the changed forms only; N is one-half of N indicated. In 2002 the remaining forms were changed. The 2002 data are based on the new questions only. Data for "hallucinogens" and "hallucinogens other than LSD" are also affected by these changes.

<sup>d</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

<sup>e</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates. The 2002 data comprise half of the 2001 sample data double-weighted and all of the 2002 sample data.

<sup>f</sup>This value is our best estimate of the actual change. See the explanatory note on the last page of Appendix D for details.

**TABLE D-5**  
**Marijuana: Trends in Annual Prevalence of Use by Subgroups for Eighth and Tenth Graders**

	Percentage who used in last twelve months																									
	8th Grade												10th Grade													
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	'01-'02 change	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	'01-'02 change
	<i>Approx. N = 17500 18600 18300 17300 17500 17800 18600 18100 16700 16700 16200 15100</i>												<i>14800 14800 15300 15800 17000 15600 15500 15000 13600 14300 14000 14300</i>													
Total	6.2	7.2	9.2	13.0	15.8	18.3	17.7	16.9	16.5	15.6	15.4	14.6	-0.8	16.5	15.2	19.2	25.2	28.7	33.6	34.8	31.1	32.1	32.2	32.7	30.3	-2.4s
Gender:																										
Male	7.3	7.4	10.5	15.1	17.7	19.6	19.2	18.0	18.1	16.7	18.1	17.0	-1.1	17.7	16.3	21.2	28.2	30.6	36.0	37.3	32.2	34.3	36.1	36.0	32.3	-3.7ss
Female	5.1	6.9	8.0	10.9	13.7	16.9	16.1	15.3	14.9	14.3	12.8	12.4	-0.4	15.1	13.9	16.9	21.9	26.5	31.4	32.3	30.1	29.7	28.4	29.6	28.4	-1.2
College Plans:																										
None or under 4 yrs.	15.8	17.5	22.4	27.7	30.3	34.6	34.5	35.0	34.9	33.6	34.4	33.1	-1.3	26.9	25.1	31.5	37.3	41.8	48.9	51.5	46.8	48.3	48.8	47.4	46.6	-0.9
Complete 4 yrs.	4.6	5.5	7.3	11.0	13.8	15.8	15.5	14.5	14.0	13.4	13.2	12.7	-0.5	14.2	13.0	16.5	22.4	26.4	31.0	32.0	28.2	29.3	29.7	30.3	27.7	-2.6s
Region:																										
Northeast	5.0	5.8	6.2	12.1	13.0	15.3	16.2	11.7	14.4	13.2	14.5	11.3	-3.1	17.1	14.9	22.4	25.6	28.8	34.8	34.6	35.4	34.4	30.3	34.1	31.7	-2.4
North Central	5.9	6.0	8.0	12.0	17.5	18.6	17.0	18.1	18.5	16.6	14.1	14.3	+0.2	15.8	14.8	17.4	23.4	26.6	33.1	34.4	28.5	31.6	31.1	31.7	29.0	-2.7
South	6.1	7.3	9.0	11.4	14.7	17.1	17.2	17.9	16.7	15.2	16.8	16.3	-0.6	14.5	12.5	16.4	23.8	28.4	33.9	34.4	30.7	30.9	31.4	31.2	28.9	-2.3
West	7.8	10.3	14.8	18.1	18.4	22.5	20.6	18.2	15.6	16.9	15.5	15.3	-0.2	19.4	20.4	24.0	30.0	32.2	32.4	36.5	30.7	32.0	37.1	36.4	33.4	-3.0
Population																										
Density:																										
Large MSA	5.2	6.7	8.0	13.1	15.6	18.3	16.4	16.0	15.6	14.5	12.4	12.7	+0.3	16.5	15.1	19.0	26.3	27.8	31.5	34.1	28.7	31.2	32.4	30.0	29.0	-0.9
Other MSA	7.2	8.3	10.9	15.7	17.2	19.5	18.2	17.4	15.4	14.8	17.4	15.2	-2.2	17.3	15.9	19.8	28.2	31.2	36.2	36.6	33.1	33.6	32.8	35.2	32.4	-2.8
Non-MSA	5.3	5.7	7.2	8.0	13.7	15.8	18.0	16.9	19.7	18.5	15.3	16.1	+0.8	14.9	13.9	18.2	18.5	24.8	30.9	32.5	30.2	30.0	31.1	30.9	27.6	-3.3
Parental Education: <sup>a</sup>																										
1.0-2.0 (Low)	13.2	12.7	13.6	18.7	23.0	20.2	24.8	25.0	25.8	26.2	26.0	24.2	-1.8	20.3	18.9	22.4	25.8	32.0	32.9	34.5	31.7	38.1	37.1	33.6	33.5	-0.1
2.5-3.0	7.0	7.7	10.7	14.5	17.9	20.6	20.3	20.0	20.8	19.4	19.5	18.7	-0.8	17.8	16.0	19.7	26.3	31.8	35.6	36.8	35.3	35.4	34.9	37.1	35.1	-2.0
3.5-4.0	6.2	7.0	9.7	13.2	17.2	20.2	19.5	17.7	16.3	15.9	16.7	15.4	-1.3	16.2	15.1	19.3	25.6	30.0	36.4	37.8	31.6	31.9	35.0	32.6	30.1	-2.6
4.5-5.0	3.7	5.4	7.4	10.9	12.7	16.2	15.7	13.7	11.7	10.8	11.1	11.4	+0.3	14.9	14.1	17.6	23.8	27.0	31.7	33.1	28.3	28.8	28.9	31.4	27.9	-3.5s
5.5-6.0 (High)	4.6	5.2	6.4	11.0	13.0	14.7	12.1	12.7	12.4	11.5	9.4	9.7	+0.3	15.9	13.7	18.5	23.3	23.4	30.3	30.5	27.7	30.6	27.3	29.4	25.8	-3.7
Race (2-year average): <sup>b</sup>																										
White	—	6.4	7.8	10.0	13.5	16.7	17.8	16.7	15.4	14.9	14.7	14.5	-0.3	—	17.0	18.0	22.6	27.7	32.0	35.3	34.2	32.5	32.6	32.9	32.7	-0.1
Black	—	4.1	5.7	8.9	11.9	14.0	15.3	16.0	16.3	16.1	14.6	12.7	-1.9	—	7.6	8.7	15.3	20.9	25.7	28.4	26.9	26.3	27.6	28.7	26.5	-2.2
Hispanic	—	11.9	13.9	18.1	20.4	20.8	21.8	22.7	22.8	20.1	19.9	21.1	+1.2	—	18.9	21.3	25.1	29.2	34.6	36.8	34.4	34.0	34.8	34.9	31.6	-3.3

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available.  
 Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.  
 See Table D-64 for the number of subgroup cases. See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

<sup>b</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**TABLE D-6**  
**Marijuana: Trends in Annual Prevalence of Use by Subgroups for Twelfth Graders**

	Percentage who used in last twelve months																								'01-'02 change				
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998		1999	2000	2001	2002
	Class of:																												
	Approx. N = 9400 15400 17100 17800 15500 15900 17500 17700 16300 15900 16000 15200 16300 16300 16700 15200 15000 15800 16300 15400 15400 14300 15400 15200 13600 12800 12800 12900																												
Total	40.0	44.5	47.6	50.2	50.8	48.8	46.1	44.3	42.3	40.0	40.6	38.8	36.3	33.1	29.6	27.0	23.9	21.9	26.0	30.7	34.7	35.8	38.5	37.5	37.8	36.5	37.0	36.2	-0.8
Gender:																													
Male	45.8	50.6	53.2	55.9	55.8	53.4	49.2	47.2	45.7	43.2	43.1	41.2	38.6	35.8	32.8	29.4	27.2	24.4	29.0	35.1	38.1	39.4	40.9	41.7	41.4	39.2	40.1	39.9	-0.1
Female	34.9	37.8	42.0	44.3	45.7	44.1	42.5	40.8	38.4	36.0	37.8	36.0	33.8	30.3	26.3	24.2	20.1	18.9	22.4	26.4	30.6	31.6	35.5	33.0	34.1	33.4	33.6	32.4	-1.1
College Plans:																													
None or under 4 years	—	46.8	50.7	51.6	53.1	51.7	49.7	48.2	46.0	44.2	44.0	42.7	40.6	36.2	34.4	31.1	27.6	27.5	29.1	34.4	39.0	41.7	44.6	43.0	43.2	40.3	41.5	40.9	-0.5
Complete 4 years	—	40.7	43.4	47.1	47.3	45.9	42.6	40.6	38.3	35.9	37.5	36.1	34.0	31.3	27.3	24.7	22.0	19.4	24.4	29.1	32.6	33.4	36.4	35.2	35.9	34.6	35.3	34.7	-0.6
Region:																													
Northeast	47.4	52.7	53.5	59.2	60.6	55.5	53.2	50.9	49.3	49.6	48.2	44.6	41.2	36.7	31.3	32.2	28.2	23.9	31.2	36.0	37.7	40.0	43.5	43.0	39.0	42.3	43.8	41.9	-1.9
North Central	40.1	44.0	48.1	51.6	52.2	48.9	46.8	45.6	42.0	36.4	40.8	40.2	37.4	34.3	33.0	28.7	26.1	22.7	26.0	30.5	36.9	36.9	36.5	33.8	38.0	34.5	36.9	37.5	+0.6
South	32.4	37.9	42.5	42.7	41.2	42.0	38.0	36.7	36.1	35.6	31.0	31.7	30.2	28.7	25.0	21.4	18.1	18.1	23.2	28.7	31.8	32.8	35.0	36.5	36.0	30.7	32.4	32.6	+0.2
West	44.1	45.8	46.8	49.1	51.9	51.7	49.6	45.5	44.8	43.2	46.2	41.2	39.6	35.6	32.3	28.3	26.8	26.1	26.4	30.0	33.8	35.6	42.6	39.0	39.8	43.1	38.4	35.2	-3.1
Population Density:																													
Large MSA	50.4	51.3	53.2	57.2	58.7	56.3	51.4	50.4	47.0	44.2	44.4	42.6	39.3	34.3	27.8	27.7	24.3	22.6	29.1	32.0	37.5	37.2	38.3	38.4	38.7	37.1	39.2	37.7	-1.5
Other MSA	40.3	44.2	48.9	50.8	51.9	49.8	46.4	44.8	44.0	41.0	40.7	39.4	36.9	34.7	30.3	28.3	27.5	22.1	26.2	32.7	34.9	38.6	40.5	38.8	39.1	38.1	36.7	38.0	+1.4
Non-MSA	32.9	39.8	41.2	43.3	43.3	41.9	41.6	38.5	36.5	35.3	37.3	34.7	32.2	29.0	30.0	23.5	17.5	21.0	23.1	25.8	31.0	29.6	34.9	33.5	34.7	32.9	35.1	30.8	-4.4
Parental Education: <sup>a</sup>																													
(Low)																													
1.0-2.0	35.2	38.9	41.0	42.5	46.0	43.7	41.8	38.9	39.7	35.7	37.1	33.4	30.7	30.7	23.3	21.0	22.4	21.2	23.0	26.3	30.9	31.3	34.8	34.2	35.5	36.5	33.9	30.8	-3.1
2.5-3.0	39.2	46.1	48.2	50.3	50.0	49.0	45.3	44.5	42.2	40.1	40.6	38.8	36.3	31.1	29.6	26.9	22.5	21.1	24.1	29.7	33.8	35.1	37.4	36.1	38.6	35.1	37.0	34.9	-2.1
3.5-4.0	38.5	44.9	49.5	51.4	52.7	49.8	47.0	46.5	42.2	41.4	41.0	40.1	36.8	33.4	31.4	27.6	24.0	22.7	26.6	31.5	34.2	36.1	38.1	39.0	38.6	36.8	38.4	38.5	+0.1
4.5-5.0	40.6	46.8	49.3	53.2	53.7	50.5	47.6	45.9	43.5	39.6	43.2	39.9	37.5	35.1	29.7	28.5	23.8	20.8	27.2	32.0	35.0	36.6	40.1	37.4	35.9	35.8	37.4	37.0	-0.4
5.5-6.0 (High)	38.7	47.5	48.6	55.2	51.2	52.0	48.5	45.7	43.7	39.9	37.9	38.9	38.6	35.9	30.7	29.4	28.2	22.6	28.0	32.3	37.5	36.7	39.7	38.3	39.2	38.0	35.2	36.1	+0.9
Race (2-year average): <sup>b</sup>																													
White	—	—	46.8	50.1	51.8	51.2	49.1	47.1	44.6	42.0	41.6	41.4	39.7	37.6	34.5	31.6	28.2	24.9	25.9	30.2	34.2	36.4	38.7	39.9	39.1	38.2	38.5	38.7	+0.2
Black	—	—	37.9	39.6	38.4	37.5	36.1	35.5	37.4	36.4	33.4	30.6	25.7	21.2	17.8	13.7	11.4	11.5	14.2	20.7	26.8	30.2	30.4	30.0	30.4	30.0	29.0	27.3	-1.7
Hispanic	—	—	45.8	43.4	42.1	44.1	41.2	38.8	38.3	38.8	37.8	36.7	33.3	29.6	25.0	21.6	23.6	24.7	23.5	25.7	29.7	32.3	36.4	37.2	37.8	40.5	37.6	34.6	-2.9

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available.  
Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.  
See Table D-65 for the number of subgroup cases. See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

<sup>b</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**TABLE D-7**  
**Inhalants: Trends in Annual Prevalence of Use by Subgroups for Eighth and Tenth Graders**

	Percentage who used in last twelve months																									
	8th Grade													10th Grade												
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	'01-'02 change	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	'01-'02 change
	<i>Approx. N = 17500 18600 18300 17300 17500 17800 18600 18100 16700 16700 16200 15100</i>													<i>14800 14800 15300 15800 17000 15600 15500 15000 13600 14300 14000 14300</i>												
Total	9.0	9.5	11.0	11.7	12.8	12.2	11.8	11.1	10.3	9.4	9.1	7.7	-1.4ss	7.1	7.5	8.4	9.1	9.6	9.5	8.7	8.0	7.2	7.3	6.6	5.8	-0.9
Gender:																										
Male	9.0	9.2	10.4	11.2	11.5	10.3	10.5	10.6	9.5	8.9	8.4	7.6	-0.8	7.4	7.6	9.1	9.7	10.3	10.1	9.1	8.4	7.6	7.7	6.7	5.4	-1.3s
Female	9.0	9.8	11.9	12.2	14.0	14.1	12.9	11.6	11.1	9.9	9.9	7.8	-2.2ss	6.6	7.5	7.7	8.6	8.9	8.9	8.2	7.6	6.9	7.0	6.5	6.0	-0.5
College Plans:																										
None or under 4 yrs.	15.0	15.6	17.7	18.3	19.6	18.2	18.1	20.9	17.9	17.2	15.1	14.5	-0.7	12.0	12.4	14.0	15.1	14.6	14.3	14.4	13.5	11.6	11.2	11.0	9.8	-1.3
Complete 4 yrs.	8.1	8.8	10.2	10.9	11.9	11.4	11.2	10.2	9.5	8.6	8.6	7.1	-1.5ss	5.9	6.4	7.3	7.8	8.7	8.7	7.7	7.0	6.5	6.7	5.9	5.2	-0.8
Region:																										
Northeast	8.0	8.6	11.3	12.0	13.1	11.7	12.1	9.1	9.8	8.7	9.4	6.9	-2.4	7.2	7.8	10.6	9.8	10.4	11.5	8.9	9.3	8.3	7.2	6.5	6.0	-0.5
North Central	9.8	10.5	9.9	10.3	13.8	13.3	11.3	11.3	10.6	10.6	8.8	8.0	-0.8	7.5	8.0	8.3	8.4	10.4	9.8	8.3	6.7	8.4	7.5	6.5	5.8	-0.7
South	8.9	9.1	10.0	11.3	12.1	11.3	11.6	11.3	9.9	8.4	9.5	8.4	-1.1	7.2	6.6	7.3	9.0	9.4	9.1	8.8	8.3	6.5	7.4	6.8	5.4	-1.5
West	8.8	9.8	14.2	14.0	12.4	12.9	12.6	12.4	10.9	10.5	8.6	6.4	-2.2	6.2	8.0	8.4	9.9	8.1	8.0	8.5	7.8	6.1	7.2	6.7	6.2	-0.5
Population																										
Density:																										
Large MSA	9.9	9.1	10.8	11.6	11.7	11.4	10.4	8.6	8.8	8.3	8.3	7.1	-1.2	7.7	7.8	8.5	7.9	8.7	8.1	8.1	6.7	6.9	7.1	6.0	5.1	-0.9
Other MSA	8.5	10.3	12.3	13.1	13.7	13.4	11.5	11.1	10.1	9.4	8.9	8.0	-1.0	7.1	7.4	8.4	9.8	9.7	9.6	8.4	7.7	7.0	6.8	6.9	5.4	-1.4s
Non-MSA	9.1	8.6	8.5	9.3	12.3	11.0	13.9	14.0	12.3	10.9	10.4	7.8	-2.6s	6.5	7.5	8.6	9.1	10.5	11.0	9.8	10.1	8.3	8.5	7.0	7.4	+0.4
Parental Education: <sup>a</sup>																										
1.0-2.0 (Low)	12.0	11.4	11.5	12.4	13.0	11.3	12.1	14.4	12.9	13.1	10.7	10.3	-0.4	7.0	8.2	10.2	8.7	9.4	10.8	9.3	9.7	8.7	8.5	7.6	5.6	-2.0
2.5-3.0	9.5	9.9	10.9	12.1	13.9	12.6	12.6	12.0	11.8	11.3	9.7	8.3	-1.4	8.0	7.9	9.1	9.5	11.0	9.9	8.5	9.1	8.0	8.1	7.5	6.0	-1.4
3.5-4.0	8.9	10.0	11.5	12.3	14.7	13.4	13.5	12.8	10.8	9.9	9.4	8.9	-0.5	7.5	8.3	8.3	9.6	10.2	10.1	9.4	8.1	6.9	7.4	5.9	6.3	+0.5
4.5-5.0	8.0	8.4	10.6	11.0	12.3	13.2	11.4	9.7	9.2	7.1	9.0	7.3	-1.7	6.4	6.5	7.2	8.7	9.4	8.4	8.3	7.1	6.7	6.5	6.8	5.6	-1.2
5.5-6.0 (High)	8.4	10.3	12.6	12.2	11.6	11.7	10.8	10.6	9.1	9.2	7.7	6.2	-1.5	6.6	6.7	8.2	8.2	7.0	10.1	8.2	6.7	7.2	7.2	5.5	5.2	-0.3
Race (2-year average): <sup>b</sup>																										
White	—	10.1	11.3	12.4	13.8	14.6	14.1	13.3	12.1	10.9	10.1	9.1	-1.0	—	8.3	8.8	9.6	10.6	11.0	10.4	9.6	8.9	8.4	7.9	7.1	-0.8
Black	—	4.4	4.6	5.3	5.0	4.2	3.8	4.2	4.2	4.3	4.8	5.0	+0.2	—	3.6	3.7	3.3	2.8	2.3	2.3	2.4	2.0	2.0	2.1	2.4	+0.4
Hispanic	—	10.4	11.5	12.5	13.3	12.7	11.4	11.5	12.7	12.2	11.0	9.9	-1.1	—	6.4	8.3	9.0	8.5	8.2	7.9	7.6	7.3	6.3	5.9	4.8	-1.0

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available.  
 Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.  
 See Table D-64 for the number of subgroup cases. See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

<sup>b</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**TABLE D-8**  
**Inhalants:<sup>a</sup> Trends in Annual Prevalence of Use by Subgroups for Twelfth Graders**

	Percentage who used in last twelve months																												'01-'02 change
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	
<i>Approx. N =</i>	9400	15400	17100	17800	15500	15900	17500	17700	16300	15900	16000	15200	16300	16300	16700	15200	15000	15800	16300	15400	15400	14300	15400	15200	13600	12800	12800	12900	
Total	—	3.0	3.7	4.1	5.4	4.6	4.1	4.5	4.3	5.1	5.7	6.1	6.9	6.5	5.9	6.9	6.6	6.2	7.0	7.7	8.0	7.6	6.7	6.2	5.6	5.9	4.5	4.5	0.0
Adjusted <sup>b</sup>	—	—	—	—	8.9	7.9	6.1	6.6	6.2	7.2	7.5	8.9	8.1	7.1	6.9	7.5	6.9	6.4	7.4	8.2	8.4	8.5	7.3	7.1	6.0	6.2	4.9	4.9	+0.1
Gender:																													
Male	—	3.8	5.1	5.6	6.7	5.9	5.1	5.8	5.8	6.5	6.9	7.8	8.3	8.2	7.8	8.8	8.2	8.0	9.2	9.6	9.9	9.1	8.3	7.5	6.5	6.8	5.5	5.8	+0.3
Female	—	2.0	2.4	2.8	4.2	3.5	3.2	3.1	2.8	3.8	4.5	4.7	5.6	4.9	4.0	4.9	5.0	4.5	4.8	6.0	6.2	6.1	5.2	5.1	4.9	5.1	3.5	3.3	-0.2
College Plans:																													
None or under 4 years	—	3.6	4.7	5.0	6.3	5.0	4.3	4.9	4.7	5.8	5.8	7.7	8.0	8.1	7.1	7.8	7.7	7.7	8.0	9.0	9.7	8.2	8.0	7.9	6.5	6.7	6.6	6.3	-0.3
Complete 4 years	—	2.2	2.9	3.4	4.5	4.3	4.0	4.1	3.9	4.7	5.7	5.2	6.4	6.0	5.4	6.4	6.3	5.7	6.7	7.4	7.4	7.3	6.5	5.7	5.4	5.5	3.9	4.2	+0.3
Region:																													
Northeast	—	3.2	4.1	4.4	6.4	6.0	5.2	6.2	5.0	6.1	8.0	5.6	6.7	6.0	6.3	7.4	6.7	6.0	8.9	10.3	10.3	10.8	9.4	8.0	6.2	6.3	5.7	5.4	-0.3
North Central	—	2.6	4.2	4.8	5.9	4.6	3.8	3.6	4.5	5.0	5.8	6.7	8.6	7.2	6.7	8.0	8.6	7.4	6.3	9.5	8.6	7.6	6.9	7.6	6.3	5.5	5.0	5.6	+0.6
South	—	3.8	3.3	3.6	4.3	3.4	3.2	3.8	3.8	4.6	4.2	5.7	6.1	6.8	5.5	6.4	5.0	4.8	6.5	6.2	7.0	6.5	5.6	5.1	5.2	5.5	3.4	4.1	+0.7
West	—	1.7	3.0	3.6	4.9	4.9	4.7	4.4	4.3	5.3	5.4	6.6	6.2	5.6	4.8	5.7	6.8	7.5	7.0	5.7	6.7	6.0	5.4	4.7	4.9	6.7	4.8	3.2	-1.6
Population Density:																													
Large MSA	—	2.9	3.4	3.4	5.1	5.7	4.7	5.5	4.8	5.3	5.9	5.2	6.0	6.5	5.1	6.7	5.2	6.0	7.4	7.6	8.5	7.8	5.9	5.5	4.8	6.3	4.4	4.4	+0.1
Other MSA	—	2.6	3.6	3.7	4.8	4.2	4.0	3.9	4.4	5.0	5.9	6.3	6.9	6.0	5.8	6.8	7.8	6.6	7.3	7.7	7.8	7.9	6.5	6.1	5.3	4.9	4.3	4.4	+0.1
Non-MSA	—	3.4	4.2	5.3	6.2	4.4	3.7	4.4	3.9	5.2	5.4	6.6	7.8	7.5	6.8	7.4	5.8	5.6	6.0	7.6	7.8	7.0	8.1	7.4	6.9	7.2	5.2	4.8	-0.4
Parental Education: <sup>c</sup>																													
(Low)																													
1.0-2.0	—	3.7	3.9	4.5	5.2	3.6	3.6	3.2	3.1	4.5	4.2	4.9	4.6	5.3	5.9	5.0	6.1	4.2	4.3	5.3	7.5	5.8	5.4	6.3	4.8	4.0	3.2	5.7	+2.5
2.5-3.0	—	3.1	4.1	4.0	5.0	4.8	4.0	4.8	4.0	5.2	5.6	6.1	6.8	6.3	5.5	6.9	6.6	6.7	6.0	7.8	8.0	7.9	6.3	6.0	5.4	5.2	5.7	4.3	-1.4
3.5-4.0	—	3.1	3.4	4.1	5.1	4.7	4.0	4.6	4.9	5.6	5.5	6.2	7.1	5.8	6.1	7.2	6.1	6.3	7.7	7.1	6.7	7.8	7.1	7.3	6.1	6.1	4.2	4.5	+0.3
4.5-5.0	—	2.7	3.0	3.9	5.8	4.3	4.4	4.4	5.2	5.0	7.0	6.9	7.2	7.0	5.7	7.4	7.4	6.3	7.6	8.9	8.9	7.4	7.9	5.3	5.6	5.9	3.8	4.7	+0.9
5.5-6.0	—	3.7	4.2	5.0	7.2	5.8	4.9	6.0	4.7	5.6	6.8	6.4	8.7	9.1	6.8	7.6	7.1	6.7	9.4	9.7	9.7	8.5	6.0	6.2	6.1	7.5	5.8	4.6	-1.2
(High)																													
Race (2-year average): <sup>d</sup>																													
White	—	—	3.6	4.3	5.1	5.3	4.7	4.7	4.8	5.1	5.9	6.5	7.3	7.6	7.0	7.2	7.6	7.2	7.6	8.6	9.1	9.0	8.6	7.9	7.0	6.4	5.9	5.2	-0.7
Black	—	—	1.5	1.3	2.1	2.2	2.1	1.9	1.8	2.2	2.0	2.1	3.0	3.1	2.2	2.1	2.7	2.5	2.2	2.4	2.6	2.2	1.9	1.7	1.4	1.9	2.2	1.9	-0.3
Hispanic	—	—	2.7	3.0	2.9	2.9	3.5	4.1	3.4	4.6	6.5	5.5	4.6	4.1	4.7	4.8	5.4	6.0	5.7	5.5	5.8	5.9	4.7	4.5	5.5	6.3	4.5	3.4	-1.1

NOTES: Level of significance of difference between the two most recent classes:  $s = .05$ ,  $ss = .01$ ,  $sss = .001$ . '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error. See Table D-65 for the number of subgroup cases. See Appendix B for definition of variables in table. Data based on four of five forms in 1976–88; N is four-fifths of N indicated in Table D-65. Data based on five of six forms in 1989–98; N is five-sixths of N indicated in Table D-59. Data based on three of six forms beginning in 1999; N is one-half of N indicated in Table D-65.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>All data are unadjusted for underreporting of amyl and butyl nitrites, except where otherwise noted.

<sup>b</sup>Adjusted for underreporting of amyl and butyl nitrites. See text for details.

<sup>c</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

<sup>d</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**TABLE D-9**  
**Hallucinogens: Trends in Annual Prevalence of Use by Subgroups for Eighth and Tenth Graders**

	Percentage who used in last twelve months																									
	8th Grade												10th Grade													
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001 <sup>a</sup>	2002 <sup>a</sup>	'01-'02 change	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001 <sup>a</sup>	2002 <sup>a</sup>	'01-'02 change
	Approx. N = 17500 18600 18300 17300 17500 17800 18600 18100 16700 16700 16200 15100												14800 14800 15300 15800 17000 15600 15500 15000 13600 14300 14000 14300													
Total	1.9	2.5	2.6	2.7	3.6	4.1	3.7	3.4	2.9	2.8	‡ 3.4	2.6	-0.8	4.0	4.3	4.7	5.8	7.2	7.8	7.6	6.9	6.9	6.1	‡ 6.2	4.7	-1.5s
Gender:																										
Male	2.2	2.6	2.8	3.0	4.0	4.3	4.0	3.7	3.3	3.2	‡ 3.8	2.9	-0.8	4.4	4.7	5.7	6.6	8.1	8.5	8.7	7.4	8.1	7.2	‡ 7.9	5.5	-2.4ss
Female	1.6	2.3	2.3	2.4	3.3	3.7	3.2	2.9	2.4	2.5	‡ 2.9	2.2	-0.7	3.6	3.8	3.6	4.8	6.1	7.0	6.4	6.3	5.7	4.9	‡ 4.6	3.9	-0.7
College Plans:																										
None or under 4 yrs.	5.1	7.2	7.1	6.7	9.6	9.6	10.1	9.2	9.4	7.7	‡ 9.5	7.8	-1.7	7.5	7.5	9.1	10.4	12.5	14.5	13.6	14.2	14.3	12.3	‡ 15.0	10.3	-4.7ss
Complete 4 yrs.	1.4	1.8	1.9	2.2	2.9	3.2	2.9	2.7	2.1	2.3	‡ 2.6	2.0	-0.5	3.3	3.6	3.7	4.8	6.2	6.6	6.5	5.6	5.7	5.1	‡ 4.8	3.9	-1.0
Region:																										
Northeast	1.5	1.6	1.9	2.9	3.4	3.7	2.8	2.4	2.6	2.3	‡ 2.9	1.5	-1.3	4.0	2.7	4.7	5.8	5.6	7.7	6.2	8.1	8.6	5.8	‡ 6.0	4.2	-1.8
North Central	1.6	2.4	1.7	2.2	3.8	3.9	3.8	3.5	3.4	3.5	‡ 2.7	2.7	0.0	3.4	4.3	4.6	5.7	7.8	9.0	7.0	5.6	6.7	6.1	‡ 6.0	5.1	-0.9
South	1.9	2.7	2.8	2.4	3.3	3.9	3.4	3.7	2.9	2.7	‡ 4.0	2.9	-1.2	3.6	3.9	3.6	5.1	7.3	7.5	8.3	7.6	6.5	5.7	‡ 5.3	4.0	-1.3
West	2.8	3.2	4.2	3.9	4.2	5.1	4.8	3.5	2.4	2.7	‡ 3.3	2.9	-0.4	5.2	6.5	6.7	7.1	7.6	6.6	8.5	6.1	6.1	6.9	‡ 8.7	5.9	-2.8
Population Density:																										
Large MSA	2.1	2.2	2.2	3.1	4.0	3.8	3.3	2.9	2.5	2.3	‡ 2.7	2.0	-0.7	4.1	4.6	4.9	6.0	7.1	8.6	7.8	6.3	5.8	7.5	‡ 5.0	4.7	-0.3
Other MSA	2.0	3.0	3.1	3.1	3.8	4.8	4.0	3.4	3.1	3.0	‡ 3.6	2.4	-1.2	4.8	4.4	4.9	6.4	8.0	8.2	7.9	7.6	7.8	5.8	‡ 6.6	4.9	-1.7
Non-MSA	1.5	2.0	1.8	1.6	3.0	3.2	3.5	3.8	2.8	3.2	‡ 3.6	3.5	-0.1	2.5	3.7	4.1	4.4	5.5	6.0	6.7	6.3	6.5	5.1	‡ 6.8	4.4	-2.4
Parental Education: <sup>b</sup>																										
1.0-2.0 (Low)	3.9	3.7	3.5	3.1	5.1	4.8	5.0	5.0	4.8	5.4	‡ 5.9	4.4	-1.5	3.7	4.9	6.0	6.1	7.7	8.0	6.5	8.3	7.0	5.2	‡ 6.4	5.3	-1.1
2.5-3.0	2.2	2.3	2.7	2.8	3.8	4.7	3.9	3.4	3.5	3.2	‡ 3.9	3.2	-0.6	4.3	4.2	4.5	5.5	7.6	8.5	7.3	8.2	8.1	5.8	‡ 6.7	5.2	-1.6
3.5-4.0	1.6	2.5	2.8	2.8	4.1	4.1	3.8	3.7	2.8	2.8	‡ 3.7	2.6	-1.1	3.7	4.6	4.8	5.9	7.6	8.6	8.2	6.6	6.6	6.7	‡ 6.1	4.8	-1.3
4.5-5.0	1.6	2.0	2.3	2.8	3.2	4.0	3.4	3.0	2.1	2.1	‡ 2.4	2.1	-0.3	4.1	3.8	4.5	5.5	6.6	6.9	8.2	6.1	6.6	6.3	‡ 6.0	4.0	-2.0s
5.5-6.0 (High)	1.4	2.4	2.0	2.5	3.2	3.5	3.5	3.1	2.5	3.1	‡ 2.3	1.7	-0.6	4.6	4.2	4.6	6.2	6.5	7.2	6.8	6.0	6.5	6.2	‡ 5.8	5.2	-0.5
Race (2-year average): <sup>c</sup>																										
White	—	2.2	2.6	2.8	3.6	4.5	4.5	3.9	3.2	3.1	2.9	‡ 3.2 <sup>c</sup>	(-0.7) <sup>d</sup>	—	4.9	5.1	5.6	7.1	8.6	8.9	8.4	8.2	7.6	6.6	‡ 6.3 <sup>c</sup>	(-1.2) <sup>d</sup>
Black	—	0.7	0.7	0.6	0.6	0.7	0.7	0.7	0.6	0.7	0.7	‡ 0.6 <sup>c</sup>	(0.0) <sup>d</sup>	—	0.2	0.6	1.1	1.2	0.9	1.0	1.1	1.0	1.0	1.3	‡ 1.2 <sup>c</sup>	(+0.2) <sup>d</sup>
Hispanic	—	3.8	4.1	4.0	4.0	4.1	4.2	4.6	4.5	4.0	3.4	‡ 3.5 <sup>c</sup>	(-0.1) <sup>d</sup>	—	3.6	4.5	5.7	6.3	6.6	7.3	7.3	6.4	5.2	4.4	‡ 4.5 <sup>c</sup>	(-0.5) <sup>d</sup>

NOTES: '‡' indicates some change in the question. See relevant footnote. See relevant figure to assess the impact of the wording changes. Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error. See Table D-64 for the number of subgroup cases. See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.  
<sup>a</sup>In 2001 the question text was changed on half of the questionnaire forms for each grade. "Other psychedelics" was changed to "other hallucinogens" and "shrooms" was added to the list of examples. The 2000 data presented here are based on all unchanged forms. The 2001 estimates are based on the changed forms only; N is one-half of N indicated. The 2002 data are based on the new questions only. Data for "any illicit drug other than marijuana" and "hallucinogens other than LSD" are also affected by these changes.

<sup>b</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.  
<sup>c</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates. The 2002 data comprise half of the 2001 sample data double-weighted and all of the 2002 sample data.  
<sup>d</sup>This value is our best estimate of the actual change. See the explanatory note on the last page of Appendix D for details.

**TABLE D-10**  
**Hallucinogens:<sup>a</sup> Trends in Annual Prevalence of Use by Subgroups for Twelfth Graders**

Percentage who used in last twelve months

	Class of:																							'01-'02 change						
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997		1998	1999	2000	2001 <sup>b</sup>	2002 <sup>b</sup>	
<i>Approx. N =</i>	9400	15400	17100	17800	15500	15900	17500	17700	16300	15900	16000	15200	16300	16300	16700	15200	15000	15800	16300	15400	15400	14300	15400	15200	13600	12800	12800	12900		
Total	11.2	9.4	8.8	9.6	9.9	9.3	9.0	8.1	7.3	6.5	6.3	6.0	6.4	5.5	5.6	5.9	5.8	5.9	7.4	7.6	9.3	10.1	9.8	9.0	9.4	8.1	‡ 9.1	6.6	-2.5 <sup>sss</sup>	
Adjusted <sup>c</sup>	—	—	—	—	11.8	10.4	10.1	9.0	8.3	7.3	7.6	7.6	6.7	5.8	6.2	6.0	6.1	6.2	7.8	7.8	9.7	10.7	10.0	9.2	9.8	8.7	‡ 9.0	7.4	-2.3 <sup>s</sup>	
Gender:																														
Male	13.7	11.6	10.8	11.6	11.8	11.7	10.9	9.6	8.6	7.9	8.1	7.2	7.5	7.2	7.4	7.7	7.5	7.1	8.9	9.2	11.9	12.4	12.0	11.0	11.4	9.6	‡ 11.1	8.4	-2.7 <sup>s</sup>	
Female	9.0	6.9	6.5	7.3	7.6	6.7	6.8	6.1	5.5	4.7	4.4	4.7	5.2	3.7	3.6	3.8	3.9	4.7	5.6	5.8	6.3	7.3	7.4	6.8	7.4	6.3	‡ 6.8	4.7	-2.1 <sup>ss</sup>	
College Plans:																														
None or under 4 years	—	11.2	10.6	11.0	11.3	11.2	10.7	9.5	8.9	8.3	7.7	7.4	7.9	6.4	7.1	6.6	7.0	7.8	8.1	8.4	11.9	12.1	11.3	12.0	10.5	10.3	‡ 10.4	9.8	-0.5	
Complete 4 years	—	6.9	6.4	7.3	7.5	7.1	7.4	6.2	5.4	4.7	5.0	4.7	5.4	4.7	4.8	5.3	5.3	5.1	6.9	7.0	8.2	9.0	9.0	7.8	8.7	7.0	‡ 8.0	5.5	-2.5 <sup>ss</sup>	
Region:																														
Northeast	13.2	10.9	10.6	13.0	12.9	12.2	12.9	11.4	8.7	11.3	9.9	7.9	7.5	5.8	5.6	6.6	7.0	7.1	9.0	9.0	10.1	13.3	13.9	10.7	9.8	9.3	‡ 9.8	9.1	-0.8	
North Central	13.0	10.3	9.7	10.7	11.1	11.3	10.3	9.1	8.9	6.0	6.8	6.6	6.9	5.3	6.6	5.7	6.5	5.9	6.8	8.1	9.2	8.8	7.6	8.4	9.8	7.0	‡ 11.4	6.4	-4.9 <sup>ss</sup>	
South	8.5	7.4	6.8	6.3	5.7	5.4	4.1	4.6	5.2	3.9	3.2	3.3	4.8	5.2	4.9	5.0	3.7	4.7	5.9	6.7	8.8	8.9	9.2	8.5	8.6	6.9	‡ 5.8	5.6	-0.2	
West	10.2	9.3	8.2	9.6	11.0	9.2	10.4	7.8	6.3	7.0	6.3	7.2	7.4	6.0	5.5	6.9	7.3	7.3	9.2	7.1	9.6	10.5	9.5	9.1	10.0	10.5	‡ 10.8	6.2	-4.6 <sup>ss</sup>	
Population Density:																														
Large MSA	13.9	11.1	9.9	11.9	12.3	11.6	12.0	10.9	9.2	8.8	8.3	7.6	7.9	6.5	5.4	5.7	5.1	6.2	7.3	8.1	11.0	10.5	8.8	8.7	8.4	8.9	‡ 11.5	6.8	-4.7 <sup>ss</sup>	
Other MSA	12.1	9.8	9.1	9.3	10.5	9.8	9.0	7.6	7.6	6.3	6.1	5.9	6.3	6.0	5.9	6.6	7.7	6.0	8.1	8.6	9.5	11.4	11.2	9.9	10.4	8.3	‡ 8.7	7.2	-1.4	
Non-MSA	8.5	7.7	7.5	8.3	7.1	7.1	6.8	6.5	5.3	5.0	5.0	4.9	5.3	3.5	5.0	4.5	3.3	5.5	6.3	5.1	7.0	7.4	8.3	7.4	8.8	7.0	‡ 7.3	5.2	-2.1	
Parental Education: <sup>d</sup>																														
(Low)																														
1.0-2.0)	8.9	7.4	6.8	7.7	7.1	8.0	6.7	6.5	6.5	5.4	4.8	5.4	5.8	4.9	4.2	3.8	4.9	3.6	4.9	5.0	7.2	7.4	7.3	7.9	9.0	7.0	‡ 6.3	5.1	-1.2	
2.5-3.0)	10.2	10.0	9.1	9.6	9.6	9.5	8.9	8.0	6.8	6.7	6.4	6.0	6.2	4.2	4.9	4.6	4.9	5.6	5.9	7.0	8.7	8.8	8.5	8.8	8.6	7.4	‡ 9.1	6.6	-2.5 <sup>ss</sup>	
3.5-4.0)	10.9	9.8	9.2	9.7	9.7	9.2	9.2	8.6	7.7	6.3	7.2	6.3	6.0	4.8	5.6	6.5	6.2	6.0	7.5	8.0	9.5	10.3	9.9	9.5	10.6	8.2	‡ 9.4	7.1	-2.4 <sup>ss</sup>	
4.5-5.0)	11.1	10.1	8.8	10.2	10.9	9.1	9.4	7.8	7.0	5.9	6.2	5.5	6.8	6.7	6.6	6.8	6.1	6.2	8.9	7.7	9.6	10.5	10.4	8.6	9.3	7.7	‡ 8.6	6.7	-1.9	
5.5-6.0)	8.9	9.4	9.5	10.2	11.7	9.9	10.6	9.0	7.0	7.6	4.3	5.9	7.2	7.2	7.0	8.2	7.3	7.4	8.9	9.0	9.5	11.4	11.6	9.4	8.4	9.6	‡ 8.8	5.9	-2.9	
(High)																														
Race (2-year average): <sup>e</sup>																														
White	—	—	9.8	9.9	10.5	10.3	10.0	9.3	8.3	7.5	7.0	6.7	6.8	6.8	6.4	6.7	6.8	6.9	7.9	8.6	9.5	10.8	11.6	11.3	10.7	9.9	9.0	‡ 8.8 <sup>e</sup>	(-0.9) <sup>f</sup>	
Black	—	—	2.4	2.3	2.0	1.9	1.9	1.8	2.2	1.7	1.2	1.6	1.5	1.0	0.9	0.8	0.6	0.7	0.8	1.2	1.2	1.7	1.9	1.4	1.2	1.6	1.4	‡ 1.6 <sup>e</sup>	(-0.7) <sup>f</sup>	
Hispanic	—	—	7.9	7.2	7.0	7.1	7.0	7.7	6.6	5.2	5.7	5.7	5.0	4.0	3.2	3.3	4.4	4.6	5.3	5.8	7.1	8.3	7.3	6.8	7.9	9.6	7.8	‡ 6.3 <sup>e</sup>	(-2.1) <sup>f</sup>	

NOTES: ‡ indicates some change in the question. See relevant footnote. See relevant figure to assess the impact of the wording changes.  
 Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available.  
 Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.  
 See Table D-65 for the number of subgroup cases. See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>All data are unadjusted for underreporting of PCP, unless otherwise indicated.

<sup>b</sup>In 2001 the question text was changed on half of the questionnaire forms for each grade. "Other psychedelics" was changed to "other hallucinogens" and "shrooms" was added to the list of examples. The 2000 data presented here are based on all unchanged forms. The 2001 data are based on the changed forms only; N is one-half of N indicated. In 2002 the remaining forms were changed. The 2002 data are based on the new questions only. Data for "any illicit drug other than marijuana" and "hallucinogens other than LSD" are also affected by these changes.

<sup>c</sup>Adjusted for underreporting of PCP. See text for details.

<sup>d</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

<sup>e</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates. The 2002 data comprise half of the 2001 sample data double-weighted and all of the 2002 sample data.

<sup>f</sup>This value is our best estimate of the actual change. See the explanatory note on the last page of Appendix D for details.



**TABLE D-11**  
**LSD: Trends in Annual Prevalence of Use by Subgroups for Eighth and Tenth Graders**

	Percentage who used in last twelve months																									
	8th Grade												10th Grade													
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	'01-'02 change	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	'01-'02 change
	<i>Approx. N = 17500 18600 18300 17300 17500 17800 18600 18100 16700 16700 16200 15100</i>												<i>14800 14800 15300 15800 17000 15600 15500 15000 13600 14300 14000 14300</i>													
Total	1.7	2.1	2.3	2.4	3.2	3.5	3.2	2.8	2.4	2.4	2.2	1.5	-0.7s	3.7	4.0	4.2	5.2	6.5	6.9	6.7	5.9	6.0	5.1	4.1	2.6	-1.6sss
Gender:																										
Male	2.0	2.1	2.5	2.6	3.4	3.7	3.5	3.2	2.7	2.6	2.3	1.7	-0.5	3.9	4.3	5.1	5.9	7.4	7.6	7.6	6.3	7.0	5.9	5.1	3.1	-1.9sss
Female	1.3	2.0	2.1	2.1	2.9	3.2	2.8	2.4	2.0	2.2	2.1	1.3	-0.8s	3.4	3.6	3.2	4.3	5.5	6.2	5.8	5.4	5.1	4.3	3.1	2.0	-1.1s
College Plans:																										
None or under 4 yrs.	4.5	6.4	6.4	6.2	8.5	8.2	9.3	7.8	8.2	6.7	5.8	5.7	-0.1	6.8	7.0	8.4	9.4	11.1	13.1	12.8	12.4	13.1	11.1	9.9	6.0	-3.8ss
Complete 4 yrs.	1.2	1.5	1.6	1.8	2.5	2.7	2.5	2.2	1.7	2.0	1.8	1.1	-0.7ss	3.0	3.4	3.3	4.2	5.6	5.8	5.7	4.7	4.9	4.1	3.2	2.0	-1.1ss
Region:																										
Northeast	1.3	1.4	1.8	2.6	2.9	2.9	2.3	2.1	2.2	1.9	1.9	0.9	-0.9	3.6	2.6	3.8	5.1	4.7	6.4	5.2	7.1	7.5	4.1	4.0	2.2	-1.8s
North Central	1.4	1.8	1.4	1.7	3.5	3.4	3.3	2.5	2.7	3.0	1.7	1.8	0.0	3.2	4.1	4.4	5.2	7.3	8.3	6.0	4.5	6.0	5.4	4.3	2.8	-1.6s
South	1.8	2.4	2.4	2.1	2.8	3.4	3.0	3.2	2.5	2.4	2.7	1.8	-0.9	3.3	3.7	3.2	4.6	6.8	6.8	7.9	6.5	5.8	5.0	3.5	2.3	-1.2
West	2.2	2.9	3.7	3.3	3.8	4.3	4.3	3.2	1.9	2.3	2.0	1.2	-0.8	4.8	5.9	6.1	6.3	6.5	5.7	7.4	5.2	5.1	5.9	5.3	3.2	-2.1s
Population Density:																										
Large MSA	1.9	2.0	2.0	2.7	3.6	3.2	2.9	2.6	2.2	2.0	1.8	1.3	-0.5	3.8	4.4	4.4	5.4	6.6	7.6	7.0	5.4	4.9	6.4	3.8	2.6	-1.2
Other MSA	1.7	2.5	2.8	2.8	3.3	4.1	3.6	2.9	2.7	2.6	2.3	1.5	-0.8	4.4	4.1	4.4	5.9	7.1	7.4	7.0	6.6	6.7	4.8	4.1	2.7	-1.4s
Non-MSA	1.3	1.6	1.4	1.3	2.4	2.6	2.8	2.9	1.9	2.8	2.4	1.9	-0.4	2.3	3.5	3.7	3.7	5.0	5.2	6.0	5.0	5.9	4.4	4.6	2.3	-2.3ss
Parental Education: <sup>a</sup>																										
1.0-2.0 (Low)	3.5	3.1	3.1	2.8	4.6	4.4	4.7	4.4	3.7	4.9	4.1	3.4	-0.8	3.1	4.4	5.5	5.5	6.9	7.6	5.9	7.9	6.3	4.9	3.9	2.7	-1.2
2.5-3.0	1.8	2.1	2.3	2.6	3.1	4.0	3.2	2.8	2.7	2.9	2.6	2.0	-0.6	4.0	4.2	4.2	5.1	6.9	7.6	6.6	7.0	7.3	5.1	4.8	2.9	-1.9ss
3.5-4.0	1.4	2.0	2.4	2.4	3.6	3.5	3.4	3.1	2.4	2.2	2.4	1.3	-1.2ss	3.4	4.1	4.2	5.3	6.9	7.9	7.4	5.6	5.8	5.6	4.3	2.8	-1.5s
4.5-5.0	1.4	1.5	2.1	2.1	2.6	3.4	2.9	2.5	1.9	1.8	1.5	1.2	-0.4	3.8	3.6	3.9	4.8	6.0	6.0	7.0	5.0	5.7	5.0	3.8	2.0	-1.8ss
5.5-6.0 (High)	1.3	2.0	2.0	2.1	2.9	3.0	2.9	2.4	1.9	2.3	1.3	0.8	-0.4	4.2	3.9	3.9	5.4	5.9	5.8	6.0	4.6	5.3	5.0	3.5	2.4	-1.1
Race (2-year average): <sup>b</sup>																										
White	—	1.9	2.3	2.5	3.1	3.9	3.9	3.2	2.6	2.6	2.6	2.0	-0.5	—	4.6	4.6	5.0	6.4	7.7	7.9	7.3	7.0	6.5	5.2	3.8	-1.5s
Black	—	0.5	0.4	0.5	0.5	0.6	0.6	0.6	0.5	0.5	0.5	0.4	-0.1	—	0.2	0.5	0.9	1.0	0.8	0.9	1.0	0.9	0.9	0.9	0.6	-0.3
Hispanic	—	3.3	3.7	3.6	3.3	3.5	3.9	4.2	3.9	3.5	3.2	2.4	-0.8	—	3.2	4.1	5.0	5.7	6.1	6.7	6.6	5.6	4.6	3.7	2.9	-0.9

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available.  
 Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.  
 See Table D-64 for the number of subgroup cases. See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

<sup>b</sup>To derive percentages for each racial subgroup, data for the specified year *and* the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**TABLE D-12**  
**LSD: Trends in Annual Prevalence of Use by Subgroups for Twelfth Graders**

	Percentage who used in last twelve months																										'01-'02 change		
	Class of:																												
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000		2001	2002
	<i>Approx. N = 9400 15400 17100 17800 15500 15900 17500 17700 16300 15900 16000 15200 16300 16300 16700 15200 15000 15800 16300 15400 15400 14300 15400 15200 13600 12800 12800 12900</i>																												
Total	7.2	6.4	5.5	6.3	6.6	6.5	6.5	6.1	5.4	4.7	4.4	4.5	5.2	4.8	4.9	5.4	5.2	5.6	6.8	6.9	8.4	8.8	8.4	7.6	8.1	6.6	6.6	3.5	-3.1sss
Gender:																													
Male	9.6	7.9	7.1	7.8	8.0	8.1	8.0	7.4	6.7	5.8	5.9	5.5	6.4	6.5	6.5	7.1	6.8	6.7	8.4	8.4	10.7	10.9	10.3	9.3	10.0	7.6	7.9	4.4	-3.4sss
Female	5.6	4.6	3.9	4.5	4.8	4.8	4.7	4.3	3.8	3.1	2.8	3.4	3.9	3.0	3.2	3.6	3.4	4.4	5.1	5.3	5.8	6.5	6.2	5.7	6.1	5.3	5.0	2.3	-2.7sss
College Plans:																													
None or under 4 years	—	7.5	6.7	7.2	8.0	8.2	8.0	7.5	6.9	6.1	5.6	5.9	6.6	5.7	6.5	6.2	6.4	7.6	7.5	7.7	11.2	11.4	10.3	10.9	9.4	8.7	8.2	5.7	-2.6s
Complete 4 years	—	4.7	4.0	4.6	4.5	4.7	5.0	4.3	3.8	3.1	3.4	3.3	4.3	4.1	4.2	4.8	4.7	4.8	6.4	6.3	7.3	7.7	7.4	6.3	7.3	5.6	5.7	2.7	-3.0sss
Region:																													
Northeast	8.5	8.0	7.2	8.0	7.9	6.8	9.0	8.0	5.6	7.0	5.4	5.1	5.3	4.7	5.1	5.9	6.1	6.6	8.6	8.2	8.8	11.9	11.8	8.2	7.8	7.1	6.7	5.4	-1.3
North Central	8.7	7.0	6.5	7.9	7.9	8.5	7.8	7.3	7.0	4.4	5.3	5.3	5.7	4.7	6.0	5.3	5.9	5.5	6.3	7.3	8.3	7.7	7.0	7.6	9.1	5.9	8.6	3.7	-4.9sss
South	5.4	4.7	3.7	3.7	3.4	4.3	3.4	3.9	4.4	3.5	2.8	2.6	4.2	4.7	4.2	4.7	3.4	4.4	5.5	6.3	8.1	7.9	8.1	7.4	7.7	6.0	4.7	3.1	-1.7s
West	7.6	5.9	5.0	5.8	8.3	6.5	6.3	4.8	4.2	4.5	4.6	5.9	6.2	5.2	4.4	6.4	6.5	7.0	8.5	6.2	8.5	8.8	6.9	7.1	7.7	7.9	6.6	2.1	-4.5sss
Population Density:																													
Large MSA	9.4	7.9	6.4	7.2	7.6	7.3	8.0	7.3	5.7	4.7	4.1	4.4	5.6	5.2	4.6	5.2	4.3	5.7	6.7	7.3	9.7	9.0	7.7	7.2	6.8	6.7	7.7	3.3	-4.4sss
Other MSA	7.4	6.8	5.6	6.1	7.3	6.8	6.9	6.3	6.0	4.9	4.8	4.9	5.4	5.6	5.3	6.1	7.0	5.8	7.6	7.9	8.7	10.0	9.3	8.4	9.2	6.9	6.4	4.0	-2.4ss
Non-MSA	5.7	4.8	4.8	5.8	4.9	5.6	4.9	4.8	4.4	4.2	4.1	4.0	4.4	3.1	4.3	4.2	3.0	5.1	5.6	4.6	6.5	6.5	7.3	6.1	7.4	5.9	5.6	2.7	-2.9ss
Parental Education: <sup>a</sup>																													
(Low)																													
1.0-2.0	6.1	4.8	4.5	5.0	4.5	5.2	4.8	5.0	4.9	4.1	3.0	3.9	4.4	4.1	3.6	3.4	4.3	3.3	4.6	4.4	6.6	6.7	6.8	6.8	8.6	5.6	5.4	2.4	-3.0s
2.5-3.0	6.5	6.8	5.8	6.1	6.3	6.8	6.5	6.1	5.1	4.8	4.5	4.6	4.9	3.8	4.3	4.4	4.4	5.2	5.6	6.5	8.1	8.2	7.3	7.8	7.6	6.4	6.7	3.4	-3.3sss
3.5-4.0	6.4	6.7	5.6	6.1	6.7	6.7	6.7	6.4	5.7	4.3	4.7	4.6	4.9	4.2	5.1	6.0	5.5	5.7	7.0	7.4	8.6	9.3	8.5	8.2	9.0	6.7	6.3	4.0	-2.4sss
4.5-5.0	7.0	6.4	5.3	6.7	7.5	5.7	6.4	5.7	5.2	4.3	4.8	4.1	5.8	6.2	5.9	6.2	5.3	5.8	8.3	6.9	8.6	8.7	8.6	6.5	8.0	6.0	6.7	3.1	-3.6sss
5.5-6.0	6.5	6.4	6.1	7.0	7.4	7.2	7.7	6.0	4.8	5.0	3.8	4.7	6.1	6.2	5.5	7.4	7.1	7.0	8.2	7.9	8.3	9.2	9.5	7.3	6.4	7.0	5.6	2.8	-2.8ss
(High)																													
Race (2-year average): <sup>b</sup>																													
White	—	—	6.3	6.3	6.8	7.0	7.2	6.9	6.2	5.5	5.0	4.9	5.4	5.8	5.7	6.1	6.3	6.4	7.4	8.0	8.6	9.7	10.1	9.5	9.1	8.3	7.5	5.8	-1.6s
Black	—	—	1.3	1.3	1.2	1.1	1.0	0.9	0.9	0.7	0.7	1.0	0.8	0.6	0.7	0.6	0.6	0.6	0.6	0.9	1.0	1.3	1.6	1.1	0.8	1.3	1.3	0.8	-0.5
Hispanic	—	—	6.1	5.0	4.9	5.2	4.5	5.2	5.0	4.1	3.9	3.9	4.0	3.1	2.3	2.7	3.6	4.1	5.1	5.4	6.4	7.4	6.3	5.9	7.0	7.6	5.8	3.8	-2.0

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available.  
Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.  
See Table D-65 for the number of subgroup cases. See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

<sup>b</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**TABLE D-13**  
**Hallucinogens Other Than LSD: Trends in Annual Prevalence of Use**  
**by Subgroups for Eighth and Tenth Graders**

Percentage who used in last twelve months

	8th Grade											10th Grade														
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001 <sup>a</sup>	2002 <sup>a</sup>	'01-'02 change	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001 <sup>a</sup>	2002 <sup>a</sup>	'01-'02 change
<i>Approx. N =</i>	17500	18600	18300	17300	17500	17800	18600	18100	16700	16700	16200	15100	14800	14800	15300	15800	17000	15600	15500	15000	13600	14300	14000	14300		
Total	0.7	1.1	1.0	1.3	1.7	2.0	1.8	1.6	1.5	1.4	† 2.4	† 2.1	-0.3	1.3	1.4	1.9	2.4	2.8	3.3	3.3	3.4	3.2	3.1	† 4.4	† 4.0	-0.4
Gender:																										
Male	0.8	1.1	1.2	1.6	1.9	2.1	2.1	1.8	1.8	1.5	† 2.8	† 2.4	-0.3	1.5	1.6	2.5	3.0	3.4	3.8	4.1	3.9	4.1	3.8	† 5.7	† 4.6	-1.0
Female	0.6	1.0	0.9	0.9	1.4	1.7	1.4	1.4	1.1	1.3	† 2.0	† 1.7	-0.3	1.1	1.1	1.2	1.7	2.1	2.7	2.5	2.8	2.3	2.4	† 3.1	† 3.4	+0.3
College Plans:																										
None or under 4 yrs.	1.7	3.6	2.9	3.6	4.8	5.2	4.7	5.1	5.3	3.9	† 7.4	† 6.5	-0.9	2.5	2.7	3.7	4.8	5.3	6.2	4.8	7.3	6.7	6.1	† 10.9	† 8.8	-2.0
Complete 4 yrs.	0.5	0.7	0.7	1.0	1.3	1.4	1.4	1.2	1.0	1.2	† 1.8	† 1.6	-0.2	1.1	1.1	1.5	1.9	2.3	2.7	3.0	2.6	2.6	2.6	† 3.3	† 3.3	-0.1
Region:																										
Northeast	0.4	0.6	0.7	1.4	1.8	2.1	1.7	1.2	1.4	1.3	† 2.1	† 1.3	-0.8	1.4	0.7	2.3	3.2	3.0	3.9	3.2	4.7	4.5	3.4	† 4.2	† 3.6	-0.6
North Central	0.6	1.3	0.6	1.1	1.6	1.8	1.8	1.9	1.7	1.8	† 1.8	† 2.1	+0.3	1.0	1.2	1.7	1.9	2.2	3.2	3.4	3.2	2.8	3.3	† 4.0	† 4.3	+0.3
South	0.7	1.0	1.0	1.0	1.5	1.7	1.4	1.8	1.6	1.3	† 2.9	† 2.2	-0.7	1.3	1.2	1.5	2.1	2.7	3.1	3.1	3.2	2.7	2.9	† 3.6	† 3.4	-0.3
West	1.4	1.3	1.9	1.9	1.9	2.6	2.7	1.3	1.1	1.4	† 2.4	† 2.6	+0.2	1.6	2.6	2.5	3.0	3.5	3.0	3.6	2.5	3.3	3.0	† 6.7	† 5.1	-1.7
Population Density:																										
Large MSA	0.7	0.8	0.7	1.6	1.6	1.8	1.4	1.3	1.1	1.2	† 1.9	† 1.6	-0.3	1.4	1.5	1.9	2.4	2.7	3.4	3.3	3.1	3.1	3.9	† 3.4	† 4.0	+0.7
Other MSA	0.7	1.3	1.3	1.4	1.8	2.2	1.9	1.6	1.5	1.7	† 2.6	† 1.9	-0.7	1.4	1.4	1.9	2.5	3.0	3.5	3.2	3.4	3.5	2.9	† 4.8	† 4.0	-0.8
Non-MSA	0.7	1.0	0.9	0.8	1.5	1.7	1.9	2.0	1.9	1.3	† 2.6	† 3.0	+0.4	1.0	1.2	2.0	2.3	2.5	2.7	3.5	3.5	2.7	2.8	† 4.5	† 3.9	-0.7
Parental Education: <sup>b</sup>																										
1.0-2.0 (Low)	1.5	1.8	1.4	1.6	2.4	2.2	2.6	2.7	2.6	2.5	† 5.0	† 3.4	-1.6	1.5	1.5	2.0	2.6	3.3	3.4	2.4	2.9	3.4	2.5	† 4.8	† 4.4	-0.4
2.5-3.0	0.8	0.7	1.1	1.1	1.7	2.1	2.0	1.3	1.9	1.5	† 2.3	† 2.6	+0.4	1.2	1.0	1.4	1.8	2.7	3.4	2.7	4.2	3.0	2.6	† 4.4	† 4.3	-0.1
3.5-4.0	0.4	1.2	1.2	1.2	1.8	2.0	1.6	1.8	1.3	1.3	† 2.6	† 1.9	-0.6	1.3	1.7	2.3	2.3	3.0	3.2	3.6	3.0	2.8	3.2	† 4.3	† 4.0	-0.3
4.5-5.0	0.8	0.9	0.7	1.5	1.6	2.0	1.6	1.5	0.9	1.1	† 1.6	† 1.7	0.0	1.2	1.5	1.9	2.6	2.5	3.3	3.7	3.0	3.7	3.7	† 4.4	† 3.5	-0.9
5.5-6.0 (High)	0.8	1.3	0.9	1.5	1.7	1.4	1.9	1.9	1.5	2.0	† 1.9	† 1.5	-0.5	1.8	1.1	2.1	2.8	2.5	3.5	3.6	3.7	3.7	3.7	† 3.9	† 4.6	+0.7
Race (2-year average): <sup>c</sup>																										
White	—	0.9	1.0	1.2	1.7	2.1	2.1	1.8	1.6	1.6	1.4	† 2.4 <sup>c</sup>	(-0.5) <sup>d</sup>	—	1.5	1.8	2.3	2.8	3.4	3.9	4.0	4.0	3.8	3.4	† 4.8 <sup>c</sup>	(-0.1) <sup>d</sup>
Black	—	0.4	0.5	0.5	0.4	0.4	0.3	0.3	0.3	0.3	0.3	† 0.5 <sup>c</sup>	(0.0) <sup>d</sup>	—	0.1	0.4	0.7	0.7	0.4	0.3	0.4	0.5	0.6	1.1	† 1.0 <sup>c</sup>	(+0.6) <sup>d</sup>
Hispanic	—	1.5	1.5	1.5	1.8	2.1	2.0	2.2	2.2	1.8	1.2	† 2.6 <sup>c</sup>	(-0.4) <sup>d</sup>	—	1.3	1.5	1.9	2.0	2.1	2.4	2.8	2.6	2.0	1.6	† 3.4 <sup>c</sup>	(-0.5) <sup>d</sup>

NOTES: † indicates some change in the question. See relevant footnote. See relevant figure to assess the impact of the wording changes.  
 Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available.  
 Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.  
 See Table D-64 for the number of subgroup cases. See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.  
<sup>a</sup>In 2001 the question text was changed on half of the questionnaire forms for each grade. "Other psychedelics" was changed to "other hallucinogens" and "shrooms" was added to the list of examples. The 2000 data presented here are based on all unchanged forms. The 2001 data are based on the changed forms only; N is one-half of N indicated. In 2002 the remaining forms were changed. The 2002 data are based on the new questions only. Data for "any illicit drug other than marijuana" and "hallucinogens" are also affected by these changes.  
<sup>b</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.  
<sup>c</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates. The 2002 data comprise half of the 2001 sample data double-weighted and all of the 2002 sample data.  
<sup>d</sup>This value is our best estimate of the actual change. See the explanatory note on the last page of Appendix D for details.

**TABLE D-14**  
**Hallucinogens Other Than LSD: Trends in Annual Prevalence of Use by Subgroups for Twelfth Graders**

	Percentage who used in last twelve months																										'01-'02 change		
	Class of:																												
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001 <sup>a</sup>	2002 <sup>a</sup>	
Approx. N =	9400	15400	17100	17800	15500	15900	17500	17700	16300	15900	16000	15200	16300	16300	16700	15200	15000	15800	16300	15400	15400	14300	15400	15200	13600	12800	12800	12900	
Total	9.4	7.0	6.9	7.3	6.8	6.2	5.6	4.7	4.1	3.8	3.6	3.0	3.2	2.1	2.2	2.1	2.0	1.7	2.2	3.1	3.8	4.4	4.6	4.6	4.3	4.4	‡ 5.9	5.5	-0.4
Gender:																													
Male	12.1	8.8	8.9	8.8	8.0	8.0	6.9	5.7	4.9	4.8	4.6	3.4	3.7	2.7	3.1	3.0	2.7	2.3	3.0	4.3	5.3	5.7	5.9	6.0	5.4	5.8	‡ 7.2	7.2	0.0
Female	7.5	5.0	4.9	5.5	5.3	4.2	4.0	3.6	3.1	2.7	2.5	2.5	2.6	1.4	1.1	1.1	1.3	1.2	1.3	1.9	2.1	2.8	3.2	3.0	3.1	2.9	‡ 4.2	3.5	-0.7
College Plans:																													
None or under 4 years	—	8.3	8.6	8.1	7.6	6.7	6.0	5.1	4.8	4.5	4.1	3.3	3.5	2.5	2.7	2.1	2.4	2.2	2.5	3.2	4.4	5.1	4.7	6.1	4.4	5.6	‡ 7.3	7.9	+0.6
Complete 4 years	—	5.2	4.9	5.7	5.3	5.1	5.0	4.1	3.1	3.0	2.9	2.5	2.8	1.8	1.9	1.9	1.9	1.5	2.0	2.9	3.4	4.0	4.4	3.9	4.0	3.8	‡ 5.0	4.6	-0.4
Region:																													
Northeast	12.0	7.8	8.2	10.3	10.2	10.0	9.0	8.1	6.1	8.4	7.1	5.1	4.8	2.6	2.5	2.9	3.5	2.5	2.6	5.1	5.3	6.1	6.6	6.3	5.5	5.0	‡ 6.9	7.5	+0.5
North Central	11.3	7.9	7.9	7.6	6.8	6.7	5.7	4.8	4.4	2.9	3.1	2.7	3.5	1.6	2.3	1.7	1.9	1.8	2.0	3.1	3.2	3.5	2.8	4.1	3.7	3.6	‡ 6.9	5.0	-1.8
South	7.1	5.7	5.4	4.8	4.1	3.1	2.0	1.8	2.4	1.5	1.5	1.4	1.7	2.0	1.9	1.7	1.0	1.3	1.8	1.9	3.1	3.6	4.0	3.5	3.3	3.3	‡ 3.1	4.5	+1.4
West	7.7	6.7	6.3	7.2	6.6	5.9	6.9	4.9	4.1	4.5	3.6	3.3	3.3	2.5	2.3	2.6	2.6	1.8	2.9	3.6	4.5	5.4	6.1	5.5	5.7	6.9	‡ 8.0	5.6	-2.4
Population																													
Density:																													
Large MSA	11.1	7.8	7.5	9.3	8.8	8.5	8.1	7.3	6.6	6.9	6.1	5.1	4.8	3.3	2.6	2.3	1.8	2.1	2.5	3.6	4.9	5.2	4.0	4.4	4.5	5.2	‡ 7.6	5.9	-1.7
Other MSA	10.7	7.3	7.2	6.9	7.2	6.5	5.0	3.7	4.0	3.1	3.0	2.4	2.5	1.7	2.0	2.4	2.6	1.7	2.2	3.6	3.7	4.7	5.4	5.1	4.2	4.3	‡ 5.4	5.8	+0.4
Non-MSA	6.8	6.1	6.1	6.1	4.7	4.1	4.4	4.0	2.4	2.4	2.4	2.1	2.9	1.6	2.1	1.5	1.2	1.4	2.0	1.8	2.7	3.1	3.6	3.7	4.2	3.8	‡ 4.8	4.3	-0.5
Parental Education: <sup>b</sup>																													
(Low)																													
1.0-2.0	7.5	5.1	5.4	5.7	4.7	5.8	3.9	3.7	3.6	2.8	2.7	2.3	3.4	2.7	2.0	1.5	1.9	1.3	1.7	2.2	2.7	3.5	2.7	3.7	2.2	3.8	‡ 3.8	4.3	+0.4
2.5-3.0	8.7	7.6	6.9	7.2	6.5	5.9	5.1	4.7	3.6	3.8	3.5	3.1	2.9	1.5	1.8	1.2	1.6	1.6	1.5	2.4	3.4	3.0	3.5	3.9	3.3	3.6	‡ 5.4	5.4	0.0
3.5-4.0	9.1	7.5	7.4	7.3	6.6	5.8	5.8	4.8	4.5	3.6	4.1	3.2	3.0	1.8	1.8	2.2	2.0	1.8	2.4	2.9	3.6	4.0	4.8	4.6	5.1	4.2	‡ 6.1	5.6	-0.5
4.5-5.0	9.7	8.4	7.0	7.8	7.5	6.4	6.0	4.7	3.9	3.8	3.6	2.7	3.3	2.2	2.6	2.8	2.4	1.7	2.7	3.7	4.2	5.2	5.3	5.0	4.4	4.6	‡ 5.5	5.8	+0.3
5.5-6.0 (High)	7.4	7.2	7.8	7.9	9.2	7.2	7.0	6.7	4.6	5.3	2.6	2.8	3.5	3.1	3.3	3.6	2.4	2.1	3.0	4.4	4.1	5.9	5.9	5.4	4.7	5.8	‡ 6.6	5.1	-1.5
Race (2-year average): <sup>c</sup>																													
White	—	—	7.6	7.6	7.5	7.0	6.3	5.6	4.7	4.3	4.0	3.5	3.4	3.0	2.4	2.4	2.4	2.2	2.2	3.0	3.8	4.4	5.2	5.6	5.2	4.8	4.7	‡ 6.4 <sup>e</sup>	(0.0) <sup>d</sup>
Black	—	—	1.6	1.6	1.3	1.4	1.3	1.2	1.6	1.3	0.8	0.9	0.9	0.6	0.5	0.4	0.3	0.3	0.5	0.7	0.8	0.8	0.7	0.6	0.6	1.0	0.9	‡ 0.8 <sup>e</sup>	(0.0) <sup>d</sup>
Hispanic	—	—	5.1	5.2	4.8	4.4	4.5	4.8	4.2	3.4	3.7	3.3	2.1	1.7	1.6	1.5	1.7	1.4	1.4	1.6	2.6	3.5	3.1	2.7	3.0	4.6	4.8	‡ 4.4 <sup>e</sup>	(-0.4) <sup>d</sup>

NOTES: '‡' indicates some change in the question. See relevant footnote. See relevant figure to assess the impact of the wording changes.

Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available.

Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.

See Table D-65 for the number of subgroup cases. See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>In 2001 the question text was changed on half of the questionnaire forms for each grade. "Other psychedelics" was changed to "other hallucinogens" and "shrooms" was added to the list of examples. The 2000 data presented here are based on all unchanged forms. The 2001 data are based on the changed forms only; N is one-half of N indicated. In 2002 the remaining forms were changed. The 2002 data are based on the new questions only. Data for "any illicit drug other than marijuana" and "hallucinogens" are also affected by these changes.

<sup>b</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

<sup>c</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates. The 2002 data comprise half of the 2001 sample data double-weighted and all of the 2002 sample data.

<sup>d</sup>This value is our best estimate of the actual change. See the explanatory note on the last page of Appendix D for details.

**TABLE D-15**  
**MDMA (Ecstasy): Trends in Annual Prevalence of Use by Subgroups for Eighth and Tenth Graders**

	Percentage who used in last twelve months																									
	8th Grade													10th Grade												
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	'01-'02 change	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	'01-'02 change
	<i>Approx. N = 17500 18600 18300 17300 17500 17800 18600 18100 16700 16700 16200 15100</i>													<i>14800 14800 15300 15800 17000 15600 15500 15000 13600 14300 14000 14300</i>												
Total	—	—	—	—	—	2.3	2.3	1.8	1.7	3.1	3.5	2.9	-0.6	—	—	—	—	—	4.6	3.9	3.3	4.4	5.4	6.2	4.9	-1.3s
Gender:																										
Male	—	—	—	—	—	2.2	2.7	2.3	1.7	3.1	3.4	3.1	-0.2	—	—	—	—	—	4.9	4.7	3.5	4.7	5.7	7.6	4.3	-3.2sss
Female	—	—	—	—	—	2.3	2.0	1.3	1.7	3.0	3.7	2.6	-1.0	—	—	—	—	—	4.2	3.1	2.9	4.2	4.8	4.9	5.2	+0.3
College Plans:																										
None or under 4 yrs.	—	—	—	—	—	4.8	6.1	4.8	5.3	6.5	9.2	9.1	-0.1	—	—	—	—	—	7.7	7.5	5.4	8.5	10.7	13.6	10.1	-3.5
Complete 4 yrs.	—	—	—	—	—	1.9	2.0	1.5	1.2	2.7	2.9	2.3	-0.6	—	—	—	—	—	4.0	3.3	2.9	3.7	4.5	5.1	4.1	-1.0
Region:																										
Northeast	—	—	—	—	—	2.1	1.5	1.6	1.8	2.4	3.8	2.0	-1.8	—	—	—	—	—	4.4	3.0	3.8	7.0	6.4	8.2	4.4	-3.8s
North Central	—	—	—	—	—	1.7	1.7	1.7	1.4	3.5	2.9	2.3	-0.6	—	—	—	—	—	3.6	3.2	2.2	2.3	5.2	4.8	4.6	-0.3
South	—	—	—	—	—	2.8	2.3	2.7	1.8	3.2	3.7	3.7	0.0	—	—	—	—	—	5.6	5.0	4.1	4.1	5.2	5.9	5.1	-0.8
West	—	—	—	—	—	2.3	3.8	0.8	1.7	2.9	3.6	3.0	-0.6	—	—	—	—	—	4.1	3.7	2.7	4.4	5.0	6.8	5.2	-1.6
Population																										
Density:																										
Large MSA	—	—	—	—	—	2.9	1.8	1.8	1.6	3.0	3.1	2.6	-0.5	—	—	—	—	—	5.6	4.0	2.5	5.2	7.0	7.3	5.1	-2.1
Other MSA	—	—	—	—	—	2.5	3.1	2.1	1.8	3.4	4.3	3.3	-1.0	—	—	—	—	—	4.6	3.6	4.1	4.7	5.3	5.5	5.2	-0.3
Non-MSA	—	—	—	—	—	1.2	1.5	1.5	1.6	2.5	2.5	2.5	0.0	—	—	—	—	—	3.3	4.2	2.7	2.8	3.7	6.3	3.7	-2.7s
Parental Education: <sup>a</sup>																										
1.0-2.0 (Low)	—	—	—	—	—	2.9	2.2	2.1	2.5	4.2	5.8	6.0	+0.3	—	—	—	—	—	4.8	3.0	1.9	3.7	7.0	7.2	5.8	-1.4
2.5-3.0	—	—	—	—	—	2.2	2.4	1.4	2.0	3.9	4.3	3.6	-0.6	—	—	—	—	—	4.7	3.9	3.1	4.4	4.9	6.5	5.5	-1.1
3.5-4.0	—	—	—	—	—	2.2	2.9	2.6	1.5	2.8	2.4	2.9	+0.5	—	—	—	—	—	4.7	5.2	4.3	4.0	6.3	7.0	5.5	-1.5
4.5-5.0	—	—	—	—	—	2.6	2.0	1.4	1.2	3.1	3.3	2.4	-0.9	—	—	—	—	—	4.2	2.5	2.9	4.3	5.0	5.3	3.9	-1.4
5.5-6.0 (High)	—	—	—	—	—	2.4	2.7	2.5	2.3	2.0	3.0	1.2	-1.8s	—	—	—	—	—	5.3	4.0	4.4	5.6	4.8	5.8	4.6	-1.2
Race (2-year average): <sup>b</sup>																										
White	—	—	—	—	—	—	2.7	2.4	1.9	2.5	3.2	2.9	-0.4	—	—	—	—	—	—	4.8	4.0	4.4	5.3	6.0	6.2	+0.1
Black	—	—	—	—	—	—	0.3	0.4	0.5	0.6	1.1	1.1	-0.1	—	—	—	—	—	—	0.8	1.2	1.3	1.5	2.2	1.8	-0.4
Hispanic	—	—	—	—	—	—	2.5	1.7	1.9	3.3	5.3	5.9	+0.6	—	—	—	—	—	—	3.6	2.3	2.4	4.6	5.4	4.3	-1.1

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error. See Table D-64 for the number of subgroup cases. See Appendix B for definition of variables in table. Data based on one of four forms in 1996–2001; N is one-third of N indicated in Table D-64. Data based on two of four forms in 2002; N is one-half of N indicated in Table D-64.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

<sup>b</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**TABLE D-16**  
**MDMA (Ecstasy): Trends in Annual Prevalence of Use by Subgroups for Twelfth Graders**

Percentage who used in last twelve months																													
	Class of:																							'01-'02 change					
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997		1998	1999	2000	2001	2002
<i>Approx. N = 9400 15400 17100 17800 15500 15900 17500 17700 16300 15900 16000 15200 16300 16300 16700 15200 15000 15800 16300 15400 15400 14300 15400 15200 13600 12800 12800 12900</i>																													
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.6	4.0	3.6	5.6	8.2	9.2	7.4	-1.8
Gender:																													
Male	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.8	5.6	4.8	5.6	8.1	10.5	8.2	-2.3
Female	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.2	2.5	2.7	5.6	8.2	8.0	6.4	-1.6
College Plans:																													
None or under 4 years	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.9	3.8	4.7	4.2	8.5	9.8	8.9	-0.9
Complete 4 years	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.0	3.9	3.3	6.2	8.0	8.7	7.1	-1.6
Region:																													
Northeast	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.3	6.9	3.7	9.4	8.8	10.1	10.3	+0.2
North Central	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.7	1.3	2.7	3.3	5.7	11.8	5.0	-6.9 <sup>sss</sup>
South	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.6	4.3	4.0	5.7	5.9	5.7	7.9	+2.3
West	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.9	4.1	4.0	5.0	14.4	10.3	6.8	-3.5
Population																													
Density:																													
Large MSA	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.6	3.6	3.2	6.1	8.7	10.9	8.4	-2.5
Other MSA	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.1	4.6	4.3	6.1	8.4	9.7	8.1	-1.5
Non-MSA	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.5	3.4	2.7	4.2	7.4	6.4	4.6	-1.8
Parental Education: <sup>a</sup>																													
(Low)																													
1.0-2.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.5	3.5	4.2	6.8	7.3	3.8	4.8	+1.0
2.5-3.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.0	3.1	3.2	5.1	7.7	10.3	8.0	-2.3
3.5-4.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.9	3.8	3.2	5.7	6.2	8.4	7.5	-0.9
4.5-5.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.0	2.9	4.3	6.2	8.3	11.2	7.3	-3.9 <sup>s</sup>
5.5-6.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.1	8.7	3.5	4.7	10.6	8.1	7.6	-0.5
(High)																													
Race (2-year average): <sup>b</sup>																													
White	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.2	4.7	5.1	7.6	9.6	8.5	-1.0
Black	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.4	0.4	0.5	1.3	2.4	1.7	-0.7
Hispanic	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.8	2.7	6.0	10.6	10.2	7.0	-3.3

NOTES: Level of significance of difference between the two most recent classes:  $s = .05$ ,  $ss = .01$ ,  $sss = .001$ . '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error. See Table D-65 for the number of subgroup cases. See Appendix B for definition of variables in table. Data based on one of six forms in 1996–2001; N is one-sixth of N indicated in Table D-65. Data based on two of six forms in 2002; N is two-sixths of N indicated in Table D-65.

SOURCE: The Monitoring the Future Study, the University of Michigan.

**CAUTION: Limited sample sizes (see "Notes" above). Use caution in interpreting subgroup trends.**

<sup>a</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

<sup>b</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**TABLE D-17**  
**Cocaine: Trends in Annual Prevalence of Use by Subgroups for Eighth and Tenth Graders**

	Percentage who used in last twelve months																									
	8th Grade												10th Grade													
	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	'01-'02 change	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	'01-'02 change
	<i>Approx. N = 17500 18600 18300 17300 17500 17800 18600 18100 16700 16700 16200 15100</i>												<i>14800 14800 15300 15800 17000 15600 15500 15000 13600 14300 14000 14300</i>													
Total	1.1	1.5	1.7	2.1	2.6	3.0	2.8	3.1	2.7	2.6	2.5	2.3	-0.3	2.2	1.9	2.1	2.8	3.5	4.2	4.7	4.7	4.9	4.4	3.6	4.0	+0.5
Gender:																										
Male	1.4	1.5	1.9	2.1	2.5	2.7	3.1	2.9	2.8	2.6	2.4	2.2	-0.2	2.2	2.0	2.5	3.1	3.5	4.5	4.7	4.9	5.2	4.7	3.8	4.2	+0.4
Female	0.9	1.5	1.5	2.1	2.6	3.1	2.5	3.1	2.7	2.6	2.6	2.3	-0.3	2.2	1.7	1.6	2.5	3.3	4.0	4.6	4.4	4.6	4.1	3.2	3.9	+0.7
College Plans:																										
None or under 4 yrs.	3.2	4.8	5.4	6.6	7.0	7.9	7.5	9.4	8.1	7.5	7.0	7.2	+0.2	4.7	4.0	5.1	6.6	7.2	10.0	10.4	10.7	11.6	9.7	9.1	10.1	+1.0
Complete 4 yrs.	0.8	1.0	1.1	1.5	2.0	2.2	2.2	2.3	2.0	2.0	2.0	1.8	-0.2	1.7	1.4	1.4	2.0	2.8	3.2	3.7	3.6	3.8	3.5	2.7	3.1	+0.4
Region:																										
Northeast	1.3	0.8	1.0	2.2	2.2	2.6	2.4	1.9	2.2	1.6	1.9	1.6	-0.2	1.5	1.0	2.0	2.4	2.5	3.0	3.0	4.9	4.6	3.1	2.3	2.4	+0.2
North Central	0.9	1.4	1.0	1.2	2.6	2.9	2.6	2.7	2.6	2.9	2.3	2.3	0.0	1.7	1.7	1.4	2.2	2.9	4.1	4.0	3.7	4.4	4.6	3.4	3.6	+0.2
South	1.1	1.7	2.1	2.5	2.4	2.7	2.6	3.8	3.1	2.2	3.2	2.6	-0.6	2.0	1.8	1.9	2.6	3.5	4.2	5.4	4.3	5.2	4.2	3.8	3.8	0.0
West	1.5	2.0	2.7	2.3	3.3	3.7	3.7	3.3	2.7	3.7	2.4	2.4	0.0	3.6	3.2	3.7	4.7	5.3	5.9	6.4	6.4	5.3	5.7	4.9	6.5	+1.7
Population																										
Density:																										
Large MSA	1.1	1.4	1.3	1.9	2.4	2.8	2.4	2.3	2.1	2.3	2.1	2.0	-0.1	1.9	1.6	1.6	2.3	3.4	3.8	4.5	4.3	4.1	4.3	3.2	3.6	+0.4
Other MSA	1.1	1.7	2.2	2.5	2.8	3.2	2.9	3.3	2.8	2.5	2.8	2.3	-0.5	2.7	2.1	2.3	3.1	3.5	4.7	4.3	4.7	5.1	4.2	3.7	4.4	+0.8
Non-MSA	1.2	1.3	1.2	1.4	2.4	2.7	3.0	3.4	3.2	3.1	2.5	2.6	+0.1	1.6	1.7	2.1	2.7	3.6	3.7	5.7	5.2	5.4	4.7	3.8	3.8	0.0
Parental																										
Education: <sup>a</sup>																										
1.0-2.0 (Low)	2.4	3.2	2.9	3.5	4.9	3.9	4.7	6.3	5.6	5.3	4.4	3.7	-0.6	3.3	3.5	3.2	3.8	5.3	7.4	6.3	8.1	8.2	7.7	5.6	7.9	+2.3
2.5-3.0	1.4	1.6	2.0	2.3	2.4	3.3	3.0	3.3	3.1	2.9	2.8	2.8	0.0	2.4	1.7	2.2	2.9	4.3	4.5	5.0	5.5	5.9	5.4	5.2	4.8	-0.4
3.5-4.0	0.7	1.2	1.8	2.1	2.8	3.3	2.8	3.1	2.8	2.5	2.4	2.2	-0.2	2.4	2.1	2.5	3.2	3.7	4.3	5.4	4.4	4.7	4.4	2.9	3.8	+0.9
4.5-5.0	0.7	1.0	1.0	1.6	1.9	2.7	2.6	2.2	1.7	1.8	2.1	2.0	-0.1	1.6	1.4	1.6	2.1	2.6	3.4	3.7	3.5	3.9	3.2	2.7	2.4	-0.3
5.5-6.0 (High)	1.2	1.5	1.1	1.9	2.5	2.5	2.3	2.5	2.5	2.2	1.6	1.5	-0.2	1.9	1.5	1.1	1.9	1.9	3.4	3.3	3.2	3.9	2.9	2.0	3.2	+1.3
Race (2-year average): <sup>b</sup>																										
White	—	1.2	1.3	1.6	2.3	2.8	3.0	2.8	2.6	2.5	2.5	2.4	-0.1	—	2.1	2.0	2.2	3.0	3.8	4.4	4.7	4.9	4.7	3.9	3.9	0.0
Black	—	0.7	0.7	0.7	0.6	0.6	0.5	0.7	0.8	0.8	0.8	0.8	0.0	—	0.6	0.6	1.0	0.9	0.7	0.8	1.0	0.9	0.6	0.8	1.0	+0.2
Hispanic	—	3.1	4.0	4.5	4.7	4.8	4.3	5.2	5.9	4.7	4.2	4.1	-0.1	—	3.7	3.7	4.9	5.5	7.0	8.5	8.3	8.2	8.0	6.6	6.0	-0.6

NOTES: Level of significance of difference between the two most recent classes:  $s = .05$ ,  $ss = .01$ ,  $sss = .001$ . '—' indicates data not available.  
 Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.  
 See Table D-64 for the number of subgroup cases. See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

<sup>b</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**TABLE D-18**  
**Cocaine: Trends in Annual Prevalence of Use by Subgroups for Twelfth Graders**

	Percentage who used in last twelve months																										'01-'02 change		
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000		2001	2002
	Class of:																												
	Approx. N = 9400 15400 17100 17800 15500 15900 17500 17700 16300 15900 16000 15200 16300 16300 16700 15200 15000 15800 16300 15400 15400 14300 15400 15200 13600 12800 12800 12900																												
Total	5.6	6.0	7.2	9.0	12.0	12.3	12.4	11.5	11.4	11.6	13.1	12.7	10.3	7.9	6.5	5.3	3.5	3.1	3.3	3.6	4.0	4.9	5.5	5.7	6.2	5.0	4.8	5.0	+0.2
Gender:																													
Male	7.5	7.5	9.3	11.4	14.6	14.8	13.8	13.1	13.2	13.8	14.8	14.3	11.3	9.1	8.1	6.6	4.1	3.7	4.0	4.5	4.8	6.0	6.6	6.8	7.3	5.8	5.4	5.9	+0.5
Female	3.9	4.4	4.9	6.5	9.3	9.8	10.4	9.6	9.3	9.1	11.2	10.9	9.2	6.5	4.9	3.8	2.6	2.4	2.3	2.8	3.1	3.5	4.2	4.5	5.0	3.9	4.1	4.0	-0.1
College Plans:																													
None or under 4 years	—	6.6	8.1	9.5	13.7	13.2	12.4	12.5	12.2	13.2	14.7	15.7	12.4	9.7	9.3	7.8	4.9	5.1	4.5	5.3	5.6	7.5	8.1	9.7	9.1	7.1	8.2	8.6	+0.4
Complete 4 years	—	5.0	5.5	7.7	9.5	10.8	11.5	9.9	9.9	9.7	11.4	10.4	9.0	6.7	5.3	4.1	2.8	2.4	2.8	3.0	3.4	4.0	4.4	4.5	5.4	4.2	3.7	3.9	+0.2
Region:																													
Northeast	5.3	6.6	7.9	11.8	13.8	14.2	16.8	16.9	15.2	19.5	20.8	17.9	13.3	9.1	7.3	6.5	3.8	2.8	3.1	3.1	3.8	5.5	6.6	5.9	4.3	4.1	4.8	5.0	+0.3
North Central	5.1	5.5	6.3	8.5	10.5	10.9	9.4	9.0	8.0	5.8	8.2	10.1	7.5	6.1	5.3	4.1	3.2	2.5	2.4	3.7	3.4	3.8	4.7	5.8	6.2	4.8	5.7	5.2	-0.5
South	5.4	5.1	6.0	6.8	8.5	7.8	6.8	6.3	7.7	7.7	7.5	7.1	7.0	6.2	6.0	4.8	3.0	3.2	3.1	3.4	3.6	4.6	4.8	5.8	6.9	4.7	3.9	5.0	+1.1
West	7.8	7.9	10.2	10.7	18.6	20.6	22.1	17.9	19.2	19.3	19.7	20.0	16.4	12.1	8.5	6.6	4.4	4.3	4.9	4.5	5.8	6.1	6.8	5.4	6.9	6.3	5.0	4.6	-0.4
Population Density:																													
Large MSA	7.3	8.6	8.6	12.3	16.6	18.7	17.5	17.2	16.9	16.8	18.8	18.8	12.9	9.3	6.4	5.6	4.1	3.6	2.7	3.3	4.4	4.8	4.7	5.4	5.0	4.1	4.3	4.1	-0.2
Other MSA	5.9	5.8	7.3	8.9	11.7	11.3	11.5	10.1	11.2	11.0	12.4	12.0	10.1	8.5	7.1	5.4	3.7	3.3	3.9	4.1	3.9	4.9	5.6	5.8	6.6	4.9	5.0	5.4	+0.5
Non-MSA	4.3	4.3	5.8	6.4	8.9	8.9	9.4	8.5	7.3	8.3	9.2	9.0	8.1	5.3	5.4	4.8	2.5	2.4	2.7	3.2	3.9	4.9	6.0	6.0	6.9	6.1	5.2	5.3	+0.1
Parental Education: <sup>a</sup>																													
(Low)																													
1.0-2.0	4.5	5.3	5.5	6.3	8.4	9.0	8.3	7.6	9.0	9.4	12.0	10.5	8.7	7.6	6.7	4.7	3.5	3.9	3.5	4.1	4.8	5.3	6.5	6.9	9.0	6.2	5.7	6.6	+0.9
2.5-3.0	4.6	6.1	6.8	8.7	11.1	11.2	10.5	11.0	9.8	10.9	12.7	12.9	9.9	7.4	6.4	5.6	3.8	3.3	3.0	4.0	3.9	5.0	5.5	6.3	6.0	4.6	6.0	5.3	-0.6
3.5-4.0	4.5	5.9	7.2	9.0	13.2	13.3	13.3	12.5	11.7	12.2	14.0	13.6	11.2	7.2	6.4	5.6	3.7	3.0	3.8	3.8	4.2	5.0	5.6	6.0	6.8	5.0	4.8	5.3	+0.5
4.5-5.0	6.3	7.6	8.1	10.4	14.0	13.6	14.9	13.6	13.1	12.2	13.7	12.2	10.0	8.7	7.1	4.4	3.1	2.9	3.0	3.1	3.7	4.8	5.2	5.0	5.4	5.3	4.4	4.2	-0.3
5.5-6.0 (High)	5.2	7.1	9.5	11.6	15.2	16.3	16.2	13.8	15.1	13.4	11.9	12.5	10.8	8.1	5.8	5.5	2.4	2.6	2.4	3.3	3.4	4.3	4.4	4.4	5.2	3.9	2.6	4.3	+1.7
Race (2-year average): <sup>b</sup>																													
White	—	—	6.5	8.3	10.9	12.8	13.0	12.6	11.8	11.9	13.0	13.5	12.0	9.6	7.6	6.3	4.6	3.3	3.1	3.5	4.0	4.5	5.5	6.3	6.7	6.2	5.5	5.7	+0.1
Black	—	—	4.8	4.6	4.6	5.2	4.8	5.2	7.2	6.3	5.3	5.8	4.8	3.8	2.9	1.7	1.5	1.2	0.8	0.9	1.0	0.8	0.9	0.9	0.9	1.0	1.0	0.9	-0.2
Hispanic	—	—	7.2	7.5	8.9	11.2	12.4	12.1	11.4	13.3	16.3	16.7	14.0	9.9	7.8	7.4	6.1	5.2	5.8	5.4	5.5	7.3	7.6	6.7	7.5	7.6	6.1	5.5	-0.6

NOTES: Level of significance of difference between the two most recent classes:  $s = .05$ ,  $ss = .01$ ,  $sss = .001$ . '—' indicates data not available.  
Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.  
See Table D-65 for the number of subgroup cases. See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

<sup>b</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.



**TABLE D-19**  
**Crack: Trends in Annual Prevalence of Use by Subgroups for Eighth and Tenth Graders**

	Percentage who used in last twelve months																									
	8th Grade													10th Grade												
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	'01-'02 change	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	'01-'02 change
	<i>Approx. N = 17500 18600 18300 17300 17500 17800 18600 18100 16700 16700 16200 15100</i>													<i>14800 14800 15300 15800 17000 15600 15500 15000 13600 14300 14000 14300</i>												
Total	0.7	0.9	1.0	1.3	1.6	1.8	1.7	2.1	1.8	1.8	1.7	1.6	-0.1	0.9	0.9	1.1	1.4	1.8	2.1	2.2	2.5	2.4	2.2	1.8	2.3	+0.5s
Gender:																										
Male	0.8	0.9	1.1	1.3	1.5	1.7	1.8	2.1	1.8	1.7	1.6	1.6	0.0	0.9	0.9	1.3	1.6	1.9	2.1	2.3	2.7	2.5	2.3	1.9	2.5	+0.5
Female	0.5	0.9	0.9	1.2	1.6	1.9	1.5	2.1	1.8	1.8	1.8	1.6	-0.3	0.8	0.9	0.7	1.0	1.6	2.1	2.2	2.2	2.3	2.1	1.7	2.2	+0.5
College Plans:																										
None or under 4 yrs.	2.0	2.9	3.4	4.6	4.2	4.9	4.7	7.5	5.3	5.2	4.4	5.7	+1.3	2.4	2.1	2.7	3.4	3.7	5.0	4.9	6.0	5.5	5.2	4.7	5.6	+0.9
Complete 4 yrs.	0.4	0.6	0.6	0.8	1.3	1.3	1.3	1.5	1.4	1.4	1.4	1.2	-0.2	0.6	0.6	0.7	0.9	1.5	1.5	1.8	1.9	1.8	1.7	1.4	1.8	+0.4s
Region:																										
Northeast	0.5	0.4	0.4	1.4	1.4	1.7	1.6	1.2	1.5	1.2	1.2	1.2	0.0	0.5	0.4	1.1	1.4	1.1	1.4	1.5	2.6	2.5	1.7	1.0	1.4	+0.4
North Central	0.6	1.0	0.8	0.9	1.4	1.9	1.6	1.9	1.9	1.9	1.7	1.5	-0.3	0.9	0.9	0.8	1.0	1.5	2.2	2.1	2.1	2.1	1.8	1.8	2.2	+0.4
South	0.7	1.0	1.2	1.6	1.4	1.7	1.4	2.5	1.9	1.4	2.0	1.7	-0.3	1.0	0.8	0.9	1.3	1.9	2.0	2.0	1.9	2.0	1.9	1.7	1.7	0.0
West	0.8	1.3	1.4	1.3	2.3	2.1	2.3	2.6	1.8	2.9	1.7	2.0	+0.3	1.1	1.4	1.7	1.9	2.8	2.8	3.8	3.9	3.2	3.8	3.3	4.4	+1.2
Population																										
Density:																										
Large MSA	0.5	0.8	0.7	1.3	1.5	1.8	1.5	1.6	1.2	1.6	1.4	1.5	0.0	0.9	0.8	0.7	0.9	1.9	1.7	2.3	2.2	2.2	2.4	1.9	2.2	+0.3
Other MSA	0.7	1.1	1.2	1.5	1.7	2.0	1.8	2.2	2.0	1.8	1.8	1.6	-0.3	0.9	0.9	1.1	1.5	1.6	2.4	1.7	2.4	2.3	2.0	1.8	2.5	+0.7s
Non-MSA	0.8	0.8	0.9	1.0	1.4	1.7	1.7	2.6	2.1	2.0	1.8	1.8	0.0	0.9	0.9	1.2	1.6	2.3	1.9	3.3	3.1	2.8	2.5	1.8	2.2	+0.4
Parental Education: <sup>a</sup>																										
1.0-2.0 (Low)	1.7	2.2	1.8	2.8	3.0	2.7	3.0	5.0	3.6	3.7	3.2	3.1	-0.1	1.3	1.7	1.8	1.9	3.0	3.9	3.4	4.5	3.4	4.8	3.0	3.9	+0.9
2.5-3.0	0.7	0.8	1.0	1.4	1.2	2.1	2.0	2.2	2.0	2.1	1.8	2.1	+0.2	1.0	0.8	1.0	1.1	2.4	2.5	2.4	3.1	2.9	2.9	2.5	2.6	+0.1
3.5-4.0	0.4	0.7	1.2	0.9	1.7	2.0	1.4	2.1	2.0	1.8	1.3	1.4	+0.1	0.9	1.0	1.4	1.5	1.7	1.9	2.6	2.0	2.5	2.2	1.4	2.2	+0.8s
4.5-5.0	0.4	0.6	0.5	1.1	1.3	1.5	1.5	1.6	1.0	1.0	1.5	1.2	-0.3	0.7	0.6	0.7	1.0	1.3	1.4	1.8	2.0	1.9	1.1	1.6	1.4	-0.2
5.5-6.0 (High)	0.8	1.0	0.6	1.4	1.6	1.5	1.5	1.6	1.9	1.8	1.3	1.3	-0.1	0.7	0.9	0.5	1.1	1.1	1.8	1.2	1.8	1.8	1.4	1.2	2.2	+1.0s
Race (2-year average): <sup>b</sup>																										
White	—	0.7	0.8	1.0	1.4	1.7	1.7	1.7	1.8	1.7	1.7	1.5	-0.1	—	0.9	0.9	1.1	1.5	1.9	2.2	2.3	2.4	2.2	1.8	2.0	+0.1
Black	—	0.4	0.4	0.5	0.5	0.4	0.4	0.5	0.5	0.4	0.5	0.6	+0.1	—	0.3	0.4	0.8	0.6	0.4	0.4	0.5	0.5	0.5	0.7	0.8	+0.1
Hispanic	—	1.9	2.0	2.1	2.7	3.0	2.8	3.6	3.9	2.9	2.6	2.7	+0.1	—	1.5	1.7	1.9	2.5	3.7	3.7	4.1	4.4	4.0	3.7	3.6	-0.1

NOTES: Level of significance of difference between the two most recent classes:  $s = .05$ ,  $ss = .01$ ,  $sss = .001$ . '—' indicates data not available.

Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.

See Table D-64 for the number of subgroup cases. See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

<sup>b</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**TABLE D-20**  
**Crack: Trends in Annual Prevalence of Use by Subgroups for Twelfth Graders**

	Percentage who used in last twelve months																										'01-'02 change		
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000		2001	2002
	Class of:																												
	Approx. N = 9400 15400 17100 17800 15500 15900 17500 17700 16300 15900 16000 15200 16300 16300 16700 15200 15000 15800 16300 15400 15400 14300 15400 15200 13600 12800 12800 12900																												
Total	—	—	—	—	—	—	—	—	—	—	—	4.1	3.9	3.1	3.1	1.9	1.5	1.5	1.5	1.9	2.1	2.1	2.4	2.5	2.7	2.2	2.1	2.3	+0.2
Gender:																													
Male	—	—	—	—	—	—	—	—	—	—	—	4.2	4.6	4.0	4.3	2.3	1.8	1.7	1.9	2.4	2.5	2.6	3.0	3.1	2.9	2.5	2.4	2.6	+0.2
Female	—	—	—	—	—	—	—	—	—	—	—	3.6	3.0	2.0	1.8	1.4	1.0	1.0	1.1	1.3	1.5	1.6	1.8	2.0	2.2	1.7	1.8	1.8	0.0
College Plans:																													
None or under 4 years	—	—	—	—	—	—	—	—	—	—	—	5.2	5.1	4.1	3.8	3.5	2.3	2.6	2.7	3.3	3.0	4.0	4.3	4.6	5.0	3.5	4.4	4.5	+0.2
Complete 4 years	—	—	—	—	—	—	—	—	—	—	—	2.8	2.7	2.3	2.7	1.2	1.1	1.0	1.2	1.4	1.7	1.6	1.7	1.9	1.9	1.7	1.5	1.7	+0.2
Region:																													
Northeast	—	—	—	—	—	—	—	—	—	—	—	6.0	4.0	2.3	3.3	2.0	1.3	1.3	1.2	1.5	1.6	2.1	2.6	3.0	2.4	1.8	2.0	2.0	0.0
North Central	—	—	—	—	—	—	—	—	—	—	—	3.1	3.5	2.4	2.2	1.6	1.5	1.4	1.3	2.2	2.0	2.3	2.2	2.6	2.8	2.0	2.6	2.6	0.0
South	—	—	—	—	—	—	—	—	—	—	—	1.6	2.8	2.6	3.3	1.8	1.2	1.2	1.5	1.6	1.7	1.7	1.8	2.0	2.3	1.8	1.2	1.9	+0.6s
West	—	—	—	—	—	—	—	—	—	—	—	7.5	6.1	5.6	3.8	2.7	1.8	2.1	2.1	2.3	3.5	2.6	3.4	3.2	3.4	3.2	3.0	2.8	-0.2
Population Density:																													
Large MSA	—	—	—	—	—	—	—	—	—	—	—	5.9	4.7	3.9	3.4	1.6	1.2	1.3	1.3	1.5	2.0	2.1	2.2	2.5	2.0	1.8	1.5	1.6	+0.1
Other MSA	—	—	—	—	—	—	—	—	—	—	—	3.5	3.5	3.2	3.3	2.0	1.7	1.6	1.8	2.1	2.1	1.9	2.3	2.4	2.5	2.1	2.2	2.4	+0.3
Non-MSA	—	—	—	—	—	—	—	—	—	—	—	3.5	3.7	2.0	2.2	2.0	1.2	1.3	1.4	1.9	2.1	2.5	2.8	2.9	3.6	2.8	2.8	2.8	0.0
Parental Education: <sup>a</sup>																													
(Low)																													
1.0-2.0	—	—	—	—	—	—	—	—	—	—	—	1.2	3.6	3.3	3.1	2.2	1.6	1.9	2.6	2.7	3.4	3.4	3.6	3.9	3.2	2.8	3.8	4.8	+1.1
2.5-3.0	—	—	—	—	—	—	—	—	—	—	—	5.3	4.2	2.6	3.1	2.2	1.5	1.9	1.6	2.2	2.3	2.4	2.5	2.8	2.8	2.1	2.6	2.2	-0.4
3.5-4.0	—	—	—	—	—	—	—	—	—	—	—	4.0	4.0	3.4	2.8	1.8	1.7	1.3	1.5	1.8	1.7	2.2	2.0	2.4	3.0	2.2	1.8	2.3	+0.4
4.5-5.0	—	—	—	—	—	—	—	—	—	—	—	2.9	3.4	3.1	2.6	1.1	0.9	1.0	1.4	1.1	1.9	1.6	2.5	2.1	2.2	1.8	1.9	1.7	-0.3
5.5-6.0	—	—	—	—	—	—	—	—	—	—	—	3.7	2.4	2.1	3.7	1.8	1.1	0.8	1.0	1.8	1.5	1.6	1.8	2.1	1.6	2.2	1.2	1.5	+0.3
(High)																													
Race (2-year average): <sup>b</sup>																													
White	—	—	—	—	—	—	—	—	—	—	—	3.8	3.4	3.1	2.1	1.6	1.3	1.3	1.6	1.9	2.0	2.2	2.6	2.8	2.5	2.2	2.3	0.0	
Black	—	—	—	—	—	—	—	—	—	—	—	1.9	2.5	2.0	1.3	1.0	0.6	0.6	0.9	1.0	0.7	0.5	0.3	0.4	0.5	0.5	0.5	0.7	+0.2
Hispanic	—	—	—	—	—	—	—	—	—	—	—	5.5	3.7	3.2	4.2	3.4	2.7	2.5	2.4	3.1	4.1	4.2	3.9	3.5	3.4	3.1	3.1	3.1	0.0

NOTES: Level of significance of difference between the two most recent classes:  $s = .05$ ,  $ss = .01$ ,  $sss = .001$ . '—' indicates data not available.

Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.

See Table D-65 for the number of subgroup cases. See Appendix B for definition of variables in table.

Data based on one of five forms in 1986; N is one-fifth of N indicated in Table D-65. Data based on two forms in 1987–89; N is two-fifths of N indicated in 1987–88 and two-sixths of N indicated in 1989 in Table D-65. Data based on six questionnaire forms beginning in 1990.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

<sup>b</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**TABLE D-21**  
**Other Cocaine: Trends in Annual Prevalence of Use by Subgroups for Eighth and Tenth Graders**

	Percentage who used in last twelve months																									
	8th Grade													10th Grade												
	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	'01-'02 change	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	'01-'02 change
	<i>Approx. N = 17500 18600 18300 17300 17500 17800 18600 18100 16700 16700 16200 15100</i>													<i>14800 14800 15300 15800 17000 15600 15500 15000 13600 14300 14000 14300</i>												
Total	1.0	1.2	1.3	1.7	2.1	2.5	2.2	2.4	2.3	1.9	1.9	1.8	-0.1	2.1	1.7	1.8	2.4	3.0	3.5	4.1	4.0	4.4	3.8	3.0	3.4	+0.4
Gender:																										
Male	1.1	1.2	1.5	1.7	2.0	2.2	2.5	2.3	2.3	1.9	1.8	1.7	0.0	2.0	1.9	2.2	2.7	3.1	3.7	4.1	4.1	4.6	4.2	3.3	3.6	+0.2
Female	0.8	1.2	1.2	1.8	2.2	2.6	1.9	2.4	2.2	1.8	2.0	1.9	-0.1	2.1	1.5	1.4	2.1	2.9	3.3	4.0	3.8	4.1	3.4	2.6	3.3	+0.8
College Plans:																										
None or under 4 yrs.	2.7	4.2	4.1	5.6	5.9	6.6	6.0	7.7	7.1	6.1	5.3	6.4	+1.1	4.4	3.3	4.5	5.9	6.3	8.4	9.0	9.3	10.5	8.3	8.2	8.7	+0.6
Complete 4 yrs.	0.6	0.7	0.9	1.2	1.6	1.8	1.7	1.8	1.7	1.4	1.5	1.3	-0.2	1.6	1.3	1.3	1.7	2.5	2.7	3.2	3.0	3.4	3.0	2.1	2.6	+0.4
Region:																										
Northeast	1.2	0.7	0.9	1.9	1.8	2.1	1.6	1.4	1.7	1.1	1.6	1.2	-0.4	1.3	1.0	1.8	2.0	2.2	2.2	2.5	4.3	4.1	2.5	2.0	1.8	-0.2
North Central	0.6	1.0	0.7	0.9	2.0	2.4	2.0	1.9	2.2	2.3	1.6	1.8	+0.2	1.6	1.3	1.3	1.8	2.5	3.4	3.4	3.1	3.9	4.0	3.0	3.2	+0.2
South	1.0	1.5	1.6	2.0	2.0	2.3	2.1	3.1	2.6	1.7	2.4	2.1	-0.3	1.9	1.6	1.7	2.2	2.9	3.5	4.8	3.7	4.7	3.9	3.2	3.3	+0.1
West	1.3	1.5	2.1	2.0	2.7	3.1	2.9	2.5	2.2	2.5	1.7	1.9	+0.2	3.4	3.1	3.2	4.3	4.8	5.2	5.3	5.2	4.6	4.6	3.9	5.5	+1.6
Population																										
Density:																										
Large MSA	0.9	1.1	1.0	1.6	2.0	2.5	1.7	1.8	1.8	1.6	1.6	1.4	-0.2	1.6	1.5	1.4	1.9	2.8	3.3	3.9	3.8	3.7	3.7	2.5	3.1	+0.6
Other MSA	0.9	1.4	1.8	2.1	2.1	2.6	2.2	2.5	2.3	1.8	2.2	1.8	-0.4	2.6	2.0	2.0	2.7	3.1	3.9	3.8	4.0	4.5	3.7	3.2	3.7	+0.5
Non-MSA	1.1	0.9	0.7	1.2	2.2	2.2	2.5	2.8	2.8	2.5	1.6	2.3	+0.7	1.4	1.4	1.9	2.5	3.1	3.2	4.9	4.2	4.8	4.0	3.2	3.3	+0.2
Parental																										
Education: <sup>a</sup>																										
1.0-2.0 (Low)	2.1	2.7	2.2	3.1	4.3	3.2	3.5	4.7	5.1	4.2	3.7	2.8	-0.9	3.1	2.7	2.7	3.1	5.0	6.1	5.5	6.7	7.6	6.3	4.8	7.1	+2.3
2.5-3.0	1.2	1.1	1.5	2.0	2.0	2.6	2.4	2.5	2.8	2.1	1.9	2.3	+0.4	2.2	1.6	2.0	2.6	3.6	3.6	4.3	4.5	5.1	4.4	4.5	3.9	-0.5
3.5-4.0	0.6	1.0	1.5	1.9	2.2	2.8	2.1	2.4	2.3	1.9	1.8	1.9	+0.1	2.2	2.0	2.2	2.7	3.3	3.8	4.6	4.0	4.2	4.0	2.5	3.2	+0.7
4.5-5.0	0.6	0.8	0.8	1.1	1.6	2.4	1.9	1.8	1.3	1.4	1.6	1.6	0.0	1.6	1.3	1.4	1.8	2.2	3.0	3.3	3.0	3.5	3.0	2.2	2.0	-0.1
5.5-6.0 (High)	1.0	1.2	0.8	1.2	2.0	1.9	1.7	1.8	1.8	1.3	1.1	0.8	-0.3	1.8	1.3	0.9	1.6	1.7	2.8	2.9	2.5	3.5	2.7	1.4	2.7	+1.4s
Race (2-year average): <sup>b</sup>																										
White	—	0.9	1.0	1.2	1.8	2.4	2.5	2.2	2.1	1.9	1.8	1.8	0.0	—	1.9	1.8	1.9	2.6	3.2	3.7	4.1	4.3	4.1	3.4	3.3	-0.1
Black	—	0.6	0.5	0.6	0.5	0.4	0.3	0.5	0.7	0.6	0.5	0.5	0.0	—	0.5	0.5	0.9	0.8	0.6	0.6	0.9	0.8	0.5	0.5	0.7	+0.2
Hispanic	—	2.6	3.3	4.0	4.3	4.1	3.3	4.0	4.9	3.9	3.2	3.1	-0.1	—	3.4	3.4	4.6	5.2	6.1	7.5	7.0	6.8	7.1	5.6	5.0	-0.6

NOTES: Level of significance of difference between the two most recent classes:  $s = .05$ ,  $ss = .01$ ,  $sss = .001$ . '—' indicates data not available.

Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.

See Table D-64 for the number of subgroup cases. See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

<sup>b</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**TABLE D-22**  
**Other Cocaine: Trends in Annual Prevalence of Use by Subgroups for Twelfth Graders**

	Percentage who used in last twelve months																									'01-'02 change			
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999		2000	2001	2002
	Class of:																												
	Approx. N = 9400 15400 17100 17800 15500 15900 17500 17700 16300 15900 16000 15200 16300 16300 16700 15200 15000 15800 16300 15400 15400 14300 15400 15200 13600 12800 12800 12900																												
Total	—	—	—	—	—	—	—	—	—	—	—	—	9.8	7.4	5.2	4.6	3.2	2.6	2.9	3.0	3.4	4.2	5.0	4.9	5.8	4.5	4.4	4.4	0.0
Gender:																													
Male	—	—	—	—	—	—	—	—	—	—	—	—	10.1	8.0	6.5	5.8	3.7	3.1	3.7	3.7	4.0	4.9	5.7	5.6	7.1	5.5	4.9	5.0	+0.1
Female	—	—	—	—	—	—	—	—	—	—	—	—	9.1	6.2	4.0	3.2	2.4	2.0	2.0	2.3	2.5	3.2	4.0	3.9	4.2	3.4	3.7	3.7	0.0
College Plans:																													
None or under 4 years	—	—	—	—	—	—	—	—	—	—	—	—	9.8	6.0	7.3	6.3	4.0	4.0	3.9	4.3	4.5	5.7	7.0	8.9	7.6	6.7	7.4	7.1	-0.2
Complete 4 years	—	—	—	—	—	—	—	—	—	—	—	—	8.3	6.7	4.2	3.7	2.8	2.0	2.5	2.5	2.9	3.5	4.1	3.5	5.2	3.7	3.4	3.4	+0.1
Region:																													
Northeast	—	—	—	—	—	—	—	—	—	—	—	—	12.9	7.0	4.9	5.6	3.4	2.8	2.3	2.8	4.2	5.2	5.9	4.7	4.1	3.7	4.4	4.3	-0.1
North Central	—	—	—	—	—	—	—	—	—	—	—	—	8.2	5.6	4.8	3.7	2.9	2.2	2.3	3.5	2.7	3.2	4.1	5.3	5.7	4.5	5.6	4.8	-0.8
South	—	—	—	—	—	—	—	—	—	—	—	—	5.8	5.8	4.6	4.1	2.8	2.5	2.6	2.6	3.1	4.2	4.6	4.9	6.6	4.0	3.9	4.4	+0.6
West	—	—	—	—	—	—	—	—	—	—	—	—	15.3	13.4	7.5	6.1	3.9	3.1	4.6	3.5	4.0	4.5	6.2	4.4	6.1	5.9	3.5	3.9	+0.4
Population Density:																													
Large MSA	—	—	—	—	—	—	—	—	—	—	—	—	13.3	9.8	5.6	5.0	3.7	3.1	2.6	2.6	3.7	3.9	4.2	4.8	4.8	3.7	4.1	3.5	-0.5
Other MSA	—	—	—	—	—	—	—	—	—	—	—	—	8.9	7.8	5.4	4.7	3.3	2.5	3.6	3.5	3.3	4.4	5.2	4.9	6.0	4.5	4.3	4.7	+0.4
Non-MSA	—	—	—	—	—	—	—	—	—	—	—	—	8.0	4.5	4.4	4.1	2.5	2.3	2.0	2.6	3.1	4.2	5.6	4.9	6.7	5.4	5.0	4.9	-0.1
Parental Education: <sup>a</sup>																													
(Low)																													
1.0-2.0	—	—	—	—	—	—	—	—	—	—	—	—	5.3	4.9	3.3	3.4	3.5	3.7	3.9	2.7	2.9	5.2	6.4	5.5	7.4	5.4	3.7	5.1	+1.4
2.5-3.0	—	—	—	—	—	—	—	—	—	—	—	—	10.5	6.5	4.6	5.0	3.5	2.3	2.3	3.2	3.4	3.8	4.9	5.3	5.0	3.8	5.6	4.7	-0.9
3.5-4.0	—	—	—	—	—	—	—	—	—	—	—	—	10.5	7.2	5.1	4.7	3.2	2.6	3.3	3.4	3.6	4.6	4.9	5.3	6.9	4.7	4.7	4.9	+0.2
4.5-5.0	—	—	—	—	—	—	—	—	—	—	—	—	9.0	7.7	6.1	4.1	2.7	2.3	2.9	2.6	3.2	3.9	4.4	4.2	5.5	4.5	3.9	3.4	-0.5
5.5-6.0	—	—	—	—	—	—	—	—	—	—	—	—	9.7	9.0	6.5	5.4	2.4	2.0	1.7	3.1	2.7	3.8	4.8	3.5	3.6	4.2	2.2	3.9	+1.7
(High)																													
Race (2-year average): <sup>b</sup>																													
White	—	—	—	—	—	—	—	—	—	—	—	—	9.3	7.0	5.3	4.2	2.9	2.6	2.9	3.3	3.9	5.0	5.6	6.0	5.7	5.0	5.1	+0.1	
Black	—	—	—	—	—	—	—	—	—	—	—	—	2.8	1.4	0.7	1.0	1.0	0.7	0.8	0.8	0.7	0.7	0.6	0.8	1.0	0.9	0.8	0.8	-0.2
Hispanic	—	—	—	—	—	—	—	—	—	—	—	—	6.3	5.1	5.1	5.0	4.3	5.1	5.1	4.0	5.6	6.9	6.0	5.8	6.6	5.8	4.7	-1.1	

NOTES: Level of significance of difference between the two most recent classes:  $s = .05$ ,  $ss = .01$ ,  $sss = .001$ . '—' indicates data not available.  
 Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.  
 See Table D-65 for the number of subgroup cases. See Appendix B for definition of variables in table.  
 Data based on one form in 1987-89; N is one-fifth of N indicated in 1987-88 and one-sixth of N indicated in 1989 in Table D-65. Data based on four of six forms beginning in 1990; N is four-sixths of N indicated in Table D-65.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

<sup>b</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**TABLE D-23**  
**Heroin: Trends in Annual Prevalence of Use by Subgroups for Eighth and Tenth Graders**

	Percentage who used in last twelve months																									
	8th Grade													10th Grade												
	1991	1992	1993	1994	1995 <sup>a</sup>	1996 <sup>a</sup>	1997 <sup>a</sup>	1998 <sup>a</sup>	1999 <sup>a</sup>	2000	2001	2002	'01-'02 change	1991	1992	1993	1994	1995 <sup>a</sup>	1996 <sup>a</sup>	1997 <sup>a</sup>	1998 <sup>a</sup>	1999 <sup>a</sup>	2000	2001	2002	'01-'02 change
	<i>Approx. N = 17500 18600 18300 17300 17500 17800 18600 18100 16700 16700 16200 15100</i>													<i>14800 14800 15300 15800 17000 15600 15500 15000 13600 14300 14000 14300</i>												
Total	0.7	0.7	0.7	1.2	1.4	1.6	1.3	1.3	1.4	1.1	1.0	0.9	-0.1	0.5	0.6	0.7	0.9	1.1	1.2	1.4	1.4	1.4	1.4	0.9	1.1	+0.1
Gender:																										
Male	0.9	0.8	0.8	1.3	1.6	1.5	1.4	1.5	1.4	1.0	1.0	0.8	-0.2	0.7	0.8	0.9	1.0	1.3	1.5	1.6	1.7	1.7	1.5	1.0	1.3	+0.2
Female	0.5	0.7	0.5	0.9	1.2	1.5	1.1	1.1	1.3	1.2	1.0	1.0	-0.1	0.4	0.4	0.4	0.8	0.8	0.9	1.3	1.1	1.2	1.2	0.8	0.8	0.0
College Plans:																										
None or under 4 yrs.	2.1	2.7	2.0	3.9	4.4	4.1	3.4	5.0	3.7	3.5	3.1	2.9	-0.2	1.4	1.4	1.9	2.0	2.2	2.4	2.9	2.7	3.4	3.8	2.5	2.7	+0.2
Complete 4 yrs.	0.4	0.4	0.5	0.7	1.0	1.1	1.1	0.9	1.1	0.8	0.8	0.7	0.0	0.3	0.4	0.4	0.7	0.9	1.0	1.2	1.2	1.1	1.0	0.7	0.8	+0.1
Region:																										
Northeast	0.5	0.6	0.7	1.3	1.4	1.8	1.1	1.1	1.3	1.1	1.1	0.8	-0.3	0.4	0.6	0.6	0.6	0.9	0.9	1.3	1.8	1.9	1.5	1.0	0.9	-0.1
North Central	0.4	0.8	0.5	1.1	1.4	1.6	1.4	1.3	1.6	1.4	1.0	1.0	+0.1	0.6	0.6	0.8	0.9	1.0	1.5	1.5	1.4	1.3	1.6	1.1	1.2	0.0
South	0.8	0.7	0.7	1.1	1.5	1.4	1.2	1.4	1.4	0.7	1.2	1.0	-0.3	0.6	0.5	0.6	1.0	1.3	1.4	1.5	1.3	1.4	1.5	0.9	0.8	0.0
West	1.0	0.7	1.1	1.1	1.2	1.6	1.4	1.3	1.2	1.4	0.7	1.0	+0.3	0.4	0.8	0.5	1.2	1.0	1.0	1.3	1.1	1.1	0.7	0.7	1.4	+0.7s
Population																										
Density:																										
Large MSA	0.5	0.7	0.7	1.2	1.2	1.4	1.0	1.0	1.3	1.0	0.9	0.7	-0.2	0.6	0.6	0.7	0.8	1.0	1.1	1.6	1.2	1.2	1.8	0.9	0.9	0.0
Other MSA	0.7	0.8	0.9	1.2	1.5	1.7	1.3	1.3	1.4	1.1	1.0	1.0	0.0	0.5	0.6	0.6	0.9	1.0	1.3	1.3	1.5	1.4	1.2	1.0	1.0	0.0
Non-MSA	0.8	0.7	0.4	1.0	1.5	1.5	1.5	1.6	1.5	1.0	1.1	1.1	0.0	0.4	0.6	0.7	1.0	1.3	1.2	1.6	1.5	1.6	1.2	0.9	1.4	+0.6
Parental Education: <sup>b</sup>																										
1.0-2.0 (Low)	1.5	1.4	0.8	2.0	2.6	2.0	2.3	3.5	2.8	1.7	2.6	1.2	-1.4s	0.4	0.5	1.2	1.3	1.8	1.0	1.3	1.7	2.4	1.3	1.1	2.0	+0.9
2.5-3.0	0.9	0.7	0.6	1.1	1.0	1.7	1.4	1.2	1.4	1.5	1.1	1.3	+0.2	0.8	0.7	0.7	0.8	1.0	1.2	1.3	1.2	1.5	1.7	1.3	0.8	-0.5
3.5-4.0	0.6	0.6	0.7	1.3	1.6	1.7	1.0	1.1	1.2	0.7	1.0	0.9	0.0	0.5	0.6	0.8	0.9	1.2	1.3	1.6	1.6	1.2	1.5	0.6	1.1	+0.5
4.5-5.0	0.4	0.5	0.8	0.8	1.2	1.4	1.1	1.1	1.1	0.8	0.6	0.8	+0.2	0.4	0.5	0.3	0.9	0.9	1.1	1.5	1.3	1.4	1.3	0.8	0.7	-0.1
5.5-6.0 (High)	0.5	0.8	0.6	1.3	1.6	1.0	1.5	1.4	1.8	1.0	0.8	0.6	-0.2	0.4	0.5	0.8	0.9	0.9	1.5	1.1	1.3	1.2	1.1	0.9	1.6	+0.8
Race (2-year average): <sup>c</sup>																										
White	—	0.6	0.6	0.8	1.2	1.6	1.6	1.3	1.2	1.2	1.0	1.0	-0.1	—	0.6	0.7	0.8	1.0	1.2	1.4	1.4	1.5	1.5	1.2	1.0	-0.2
Black	—	0.4	0.3	0.6	0.7	0.5	0.4	0.5	0.7	0.5	0.6	0.6	0.0	—	0.3	0.4	0.6	0.6	0.2	0.2	0.4	0.5	0.5	0.5	0.3	-0.2
Hispanic	—	1.4	1.4	1.5	1.8	2.1	1.7	1.7	2.2	2.0	1.4	1.2	-0.1	—	0.7	0.7	0.7	1.0	1.0	1.3	1.6	1.7	1.4	1.4	1.1	-0.2

NOTES: Level of significance of difference between the two most recent classes:  $s = .05$ ,  $ss = .01$ ,  $sss = .001$ . '—' indicates data not available.

Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.

See Table D-64 for the number of subgroup cases. See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>In 1995, the heroin question was changed in half of the forms. Separate questions were asked for use with injection and without injection. In 1996, the remaining form was also changed. Data presented here represent the combined data from all forms.

<sup>b</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

<sup>c</sup>To derive percentages for each racial subgroup, data for the specified year *and* the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**TABLE D-24**  
**Heroin: Trends in Annual Prevalence of Use by Subgroups for Twelfth Graders**

	Percentage who used in last twelve months																											'01-'02 change	
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995 <sup>a</sup>	1996 <sup>a</sup>	1997 <sup>a</sup>	1998 <sup>a</sup>	1999 <sup>a</sup>	2000	2001		2002
	Class of:																												
	Approx. N = 9400 15400 17100 17800 15500 15900 17500 17700 16300 15900 16000 15200 16300 16300 16700 15200 15000 15800 16300 15400 15400 14300 15400 15200 13600 12800 12800 12900																												
Total	1.0	0.8	0.8	0.8	0.5	0.5	0.5	0.6	0.6	0.5	0.6	0.5	0.5	0.5	0.6	0.5	0.4	0.6	0.5	0.6	1.1	1.0	1.2	1.0	1.1	1.5	0.9	1.0	+0.1
Gender:																													
Male	1.2	1.0	1.2	1.1	0.6	0.6	0.6	0.8	0.7	0.7	0.8	0.7	0.7	0.7	0.9	0.6	0.6	0.8	0.7	0.8	1.4	1.3	1.5	1.4	1.4	1.7	1.3	1.1	-0.2
Female	0.8	0.5	0.4	0.6	0.3	0.4	0.3	0.4	0.4	0.3	0.3	0.2	0.3	0.3	0.4	0.3	0.3	0.3	0.3	0.4	0.8	0.7	0.9	0.7	0.8	1.2	0.6	0.8	+0.3
College Plans:																													
None or under 4 years	—	0.9	1.1	1.0	0.7	0.6	0.5	0.7	0.9	0.6	0.7	0.8	0.5	0.8	0.9	0.6	0.5	0.9	1.0	1.1	1.5	1.8	1.8	1.7	1.3	2.2	1.3	2.3	+1.0s
Complete 4 years	—	0.6	0.5	0.6	0.3	0.3	0.5	0.4	0.3	0.4	0.5	0.4	0.4	0.3	0.5	0.4	0.4	0.5	0.4	0.5	0.9	0.8	1.0	0.8	1.0	1.1	0.7	0.7	-0.1
Region:																													
Northeast	1.1	0.7	0.7	0.6	0.6	0.5	0.5	0.9	0.6	0.6	0.8	0.7	0.6	0.5	0.9	0.8	0.2	0.5	0.9	0.7	1.0	1.6	1.7	1.3	1.2	1.0	1.2	1.2	0.0
North Central	1.3	1.0	1.0	0.8	0.5	0.7	0.6	0.5	0.4	0.6	0.6	0.4	0.6	0.3	0.6	0.3	0.8	0.6	0.5	0.9	0.7	0.7	0.9	1.0	0.9	1.4	1.3	1.0	-0.3
South	0.9	0.7	0.9	1.1	0.6	0.3	0.5	0.5	0.7	0.5	0.6	0.5	0.4	0.5	0.6	0.5	0.4	0.6	0.4	0.6	1.4	1.0	1.1	1.1	1.3	1.6	0.6	1.2	+0.7ss
West	0.7	0.6	0.5	0.8	0.2	0.4	0.5	0.3	0.5	0.4	0.3	0.5	0.5	0.7	0.7	0.3	0.3	0.8	0.5	0.4	1.0	0.9	1.2	0.6	0.9	1.8	0.8	0.5	-0.3
Population																													
Density:																													
Large MSA	1.3	1.0	0.5	0.7	0.4	0.3	0.3	0.7	0.6	0.6	0.7	0.7	0.3	0.4	0.5	0.4	0.4	0.4	0.6	0.4	1.4	1.1	1.1	0.9	0.8	1.9	1.1	1.0	-0.1
Other MSA	0.9	1.0	0.8	0.8	0.6	0.5	0.5	0.4	0.4	0.4	0.7	0.4	0.6	0.5	0.7	0.5	0.4	0.7	0.5	0.8	0.9	1.1	1.3	1.3	1.3	1.3	0.8	1.0	+0.2
Non-MSA	1.0	0.4	1.1	1.0	0.5	0.6	0.7	0.6	0.7	0.7	0.4	0.5	0.5	0.5	0.8	0.5	0.6	0.7	0.5	0.5	1.0	0.9	1.0	0.6	1.0	1.3	0.9	1.1	+0.1
Parental Education: <sup>b</sup>																													
(Low)																													
1.0-2.0	1.2	0.8	0.8	0.8	0.6	0.6	0.4	0.4	0.5	0.6	0.8	0.9	0.5	0.5	0.9	0.8	0.5	0.7	0.3	0.9	1.8	1.1	2.1	1.2	2.3	2.3	1.3	2.1	+0.8
2.5-3.0	0.8	0.9	0.8	0.9	0.5	0.6	0.6	0.7	0.6	0.5	0.5	0.4	0.4	0.7	0.7	0.4	0.4	0.6	0.4	0.8	1.1	0.9	1.0	1.0	0.9	1.6	0.5	1.0	+0.5
3.5-4.0	0.6	0.8	0.9	0.7	0.4	0.4	0.5	0.3	0.5	0.5	0.5	0.5	0.6	0.4	0.6	0.4	0.4	0.6	0.6	0.4	0.9	1.1	1.2	1.2	1.0	1.3	1.0	0.9	-0.1
4.5-5.0	1.2	1.4	0.6	0.9	0.6	0.4	0.3	0.6	0.4	0.4	0.7	0.3	0.3	0.3	0.6	0.4	0.6	0.7	0.7	0.3	1.1	1.0	1.1	1.0	1.1	1.5	1.0	0.7	-0.4
5.5-6.0	1.2	0.6	1.1	1.0	0.8	0.4	0.7	1.1	0.8	0.5	0.6	0.5	0.7	0.4	0.4	0.5	0.5	0.3	0.4	0.9	1.0	0.8	1.1	0.7	1.1	1.1	0.8	1.0	+0.3
(High)																													
Race (2-year average): <sup>c</sup>																													
White	—	—	0.8	0.8	0.6	0.5	0.4	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.5	0.6	0.5	0.5	0.5	0.5	0.8	1.0	1.2	1.2	1.1	1.3	1.3	1.0	-0.3
Black	—	—	0.6	0.6	0.5	0.5	0.6	0.7	0.6	0.4	0.5	0.5	0.5	0.7	0.6	0.3	0.2	0.5	0.4	0.3	0.4	0.5	0.5	0.4	0.3	0.5	0.4	0.5	0.0
Hispanic	—	—	1.2	2.0	1.7	0.4	0.3	0.4	0.6	1.1	1.0	0.9	0.9	0.5	0.5	0.6	0.6	0.9	0.7	0.5	1.2	1.5	1.1	0.8	1.0	2.0	1.6	0.8	-0.7

NOTES: Level of significance of difference between the two most recent classes:  $s = .05$ ,  $ss = .01$ ,  $sss = .001$ . '—' indicates data not available.  
 Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.  
 See Table D-65 for the number of subgroup cases. See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>In 1995, the heroin question was changed in half of the forms. Separate questions were asked for use with injection and without injection. Data presented here represent the combined data from all forms.

<sup>b</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

<sup>c</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**TABLE D-25**  
**Heroin with a Needle: Trends in Annual Prevalence of Use by Subgroups for Eighth and Tenth Graders**

	Percentage who used in last twelve months																									
	8th Grade													10th Grade												
	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	'01-'02 change	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	'01-'02 change
	<i>Approx. N = 17500 18600 18300 17300 17500 17800 18600 18100 16700 16700 16200 15100</i>													<i>14800 14800 15300 15800 17000 15600 15500 15000 13600 14300 14000 14300</i>												
Total	—	—	—	—	0.9	1.0	0.8	0.8	0.9	0.6	0.7	0.6	-0.1	—	—	—	—	0.6	0.7	0.7	0.8	0.6	0.5	0.4	0.6	+0.1
Gender:																										
Male	—	—	—	—	1.2	1.0	0.8	1.0	1.0	0.7	0.7	0.6	-0.2	—	—	—	—	0.8	0.8	0.9	1.0	0.8	0.6	0.5	0.6	+0.1
Female	—	—	—	—	0.5	1.0	0.7	0.7	0.8	0.6	0.7	0.6	-0.1	—	—	—	—	0.4	0.4	0.5	0.5	0.5	0.4	0.3	0.4	+0.1
College Plans:																										
None or under 4 yrs.	—	—	—	—	3.2	3.1	2.0	3.1	2.2	2.1	2.2	1.9	-0.3	—	—	—	—	1.6	1.4	1.5	1.6	1.7	1.7	1.4	1.5	+0.1
Complete 4 yrs.	—	—	—	—	0.6	0.7	0.6	0.6	0.7	0.5	0.6	0.5	0.0	—	—	—	—	0.4	0.5	0.6	0.6	0.5	0.3	0.3	0.4	+0.1
Region:																										
Northeast	—	—	—	—	0.8	1.3	0.5	0.6	1.0	0.8	0.9	0.6	-0.3	—	—	—	—	0.5	0.3	0.6	0.8	0.7	0.5	0.5	0.4	-0.1
North Central	—	—	—	—	0.9	1.1	0.7	0.9	1.2	0.9	0.7	0.8	+0.1	—	—	—	—	0.6	1.0	0.8	0.9	0.7	0.5	0.5	0.6	0.0
South	—	—	—	—	0.8	0.9	0.8	1.0	0.9	0.3	0.9	0.6	-0.3	—	—	—	—	0.6	0.7	0.8	0.8	0.6	0.6	0.3	0.5	+0.2
West	—	—	—	—	1.0	1.0	1.0	0.8	0.7	0.8	0.3	0.6	+0.3	—	—	—	—	0.5	0.5	0.6	0.6	0.6	0.4	0.5	0.8	+0.4
Population																										
Density:																										
Large MSA	—	—	—	—	0.9	0.7	0.6	0.8	0.8	0.7	0.7	0.4	-0.3	—	—	—	—	0.5	0.5	0.6	0.7	0.6	0.6	0.4	0.5	+0.2
Other MSA	—	—	—	—	0.9	1.2	0.8	0.8	0.9	0.6	0.6	0.7	+0.1	—	—	—	—	0.5	0.7	0.6	0.7	0.5	0.4	0.5	0.4	-0.1
Non-MSA	—	—	—	—	0.9	1.1	0.9	1.1	1.1	0.7	1.0	0.8	-0.1	—	—	—	—	0.8	0.8	1.1	1.0	1.0	0.6	0.4	1.0	+0.6s
Parental Education: <sup>a</sup>																										
1.0-2.0 (Low)	—	—	—	—	1.3	0.9	1.5	2.3	2.0	1.2	2.0	1.1	-0.9	—	—	—	—	1.6	0.6	0.7	1.3	1.2	1.0	0.5	1.2	+0.7
2.5-3.0	—	—	—	—	0.5	1.2	0.8	0.8	0.9	0.5	0.7	0.9	+0.2	—	—	—	—	0.5	0.8	0.6	0.6	0.7	0.8	0.7	0.3	-0.5s
3.5-4.0	—	—	—	—	0.8	1.2	0.6	0.6	0.9	0.4	0.6	0.6	0.0	—	—	—	—	0.7	0.7	0.9	0.9	0.6	0.5	0.2	0.6	+0.4s
4.5-5.0	—	—	—	—	1.0	0.8	0.7	0.7	0.5	0.4	0.5	0.5	0.0	—	—	—	—	0.4	0.5	0.7	0.6	0.6	0.3	0.3	0.3	0.0
5.5-6.0 (High)	—	—	—	—	1.0	0.6	0.9	0.9	1.2	0.9	0.7	0.4	-0.2	—	—	—	—	0.3	0.6	0.7	0.8	0.6	0.3	0.5	1.1	+0.6
Race (2-year average): <sup>b</sup>																										
White	—	—	—	—	—	1.1	1.0	0.7	0.8	0.7	0.6	0.7	+0.1	—	—	—	—	—	0.6	0.7	0.7	0.6	0.5	0.4	0.5	0.0
Black	—	—	—	—	—	0.3	0.2	0.3	0.4	0.3	0.5	0.5	0.0	—	—	—	—	—	0.1	0.1	0.3	0.3	0.3	0.3	0.2	-0.1
Hispanic	—	—	—	—	—	1.1	1.0	1.1	1.5	1.2	0.8	0.7	-0.1	—	—	—	—	—	0.6	0.6	0.8	1.0	0.9	0.9	0.7	-0.3

NOTES: Level of significance of difference between the two most recent classes:  $s = .05$ ,  $ss = .01$ ,  $sss = .001$ . '—' indicates data not available.  
 Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.  
 See Table D-64 for the number of subgroup cases. See Appendix B for definition of variables in table.  
 Data based on one of two forms in 1995; N is one-half of N indicated in Table D-64.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

<sup>b</sup>To derive percentages for each racial subgroup, data for the specified year *and* the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**TABLE D-26**  
**Heroin with a Needle: Trends in Annual Prevalence of Use by Subgroups for Twelfth Graders**

	Percentage who used in last twelve months																							'01-'02 change					
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997		1998	1999	2000	2001	2002
	Class of:																												
	Approx. N = 9400 15400 17100 17800 15500 15900 17500 17700 16300 15900 16000 15200 16300 16300 16700 15200 15000 15800 16300 15400 15400 14300 15400 15200 13600 12800 12800 12900																												
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.5	0.5	0.5	0.4	0.4	0.4	0.3	0.4	+0.1
Gender:																													
Male	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.7	0.9	0.9	0.6	0.6	0.6	0.5	0.5	0.0
Female	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.3	0.1	0.2	0.3	0.2	0.2	0.1	0.2	+0.1
College Plans:																													
None or under 4 years	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.9	1.2	0.9	0.8	0.5	1.0	0.7	0.9	+0.2
Complete 4 years	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.4	0.4	0.4	0.3	0.4	0.2	0.2	0.3	+0.1
Region:																													
Northeast	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.4	0.6	0.6	0.7	0.3	0.2	0.7	0.6	-0.2
North Central	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.5	0.4	0.8	0.4	0.5	0.4	0.2	0.6	+0.4
South	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.4	0.6	0.3	0.5	0.4	0.8	0.1	0.3	+0.2
West	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.8	0.5	0.5	0.1	0.3	0.1	0.4	0.2	-0.2
Population																													
Density:																													
Large MSA	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.6	0.7	0.3	0.3	0.4	0.8	0.4	0.5	0.0
Other MSA	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.4	0.5	0.6	0.5	0.3	0.3	0.3	0.3	0.0
Non-MSA	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.6	0.3	0.7	0.5	0.6	0.3	0.2	0.5	+0.3
Parental																													
Education: <sup>a</sup>																													
(Low)																													
1.0-2.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.7	0.9	1.8	0.8	1.5	1.2	0.7	0.8	+0.1
2.5-3.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.6	0.5	0.4	0.5	0.1	0.4	0.3	0.4	+0.1
3.5-4.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.2	0.3	0.3	0.4	0.5	0.2	0.1	0.5	+0.4
4.5-5.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.5	0.7	0.6	0.4	0.3	0.4	0.4	0.2	-0.2
5.5-6.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.6	0.5	0.5	0.2	0.4	0.2	0.3	0.2	-0.1
(High)																													
Race (2-year																													
average): <sup>b</sup>																													
White	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.4	0.5	0.5	0.4	0.3	0.2	0.2	0.0
Black	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.2	0.5	0.4	0.2	0.5	0.4	0.2	-0.2
Hispanic	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.0	0.7	0.5	0.6	1.0	0.6	0.4	-0.2

NOTES: Level of significance of difference between the two most recent classes:  $s = .05$ ,  $ss = .01$ ,  $sss = .001$ . '—' indicates data not available.  
 Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.  
 See Table D-65 for the number of subgroup cases. See Appendix B for definition of variables in table.  
 Data based on three of six forms; N is one-half of N indicated in Table D-65.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

<sup>b</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.



**TABLE D-27**  
**Heroin without a Needle: Trends in Annual Prevalence of Use**  
**by Subgroups for Eighth and Tenth Graders**

	Percentage who used in last twelve months																									
	8th Grade													10th Grade												
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	'01-'02 change	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	'01-'02 change
	<i>Approx. N = 17500 18600 18300 17300 17500 17800 18600 18100 16700 16700 16200 15100</i>													<i>14800 14800 15300 15800 17000 15600 15500 15000 13600 14300 14000 14300</i>												
Total	—	—	—	—	0.8	1.0	0.8	0.8	0.9	0.7	0.6	0.6	0.0	—	—	—	—	0.8	0.9	1.1	1.0	1.1	1.1	0.7	0.8	+0.1
Gender:																										
Male	—	—	—	—	1.0	0.9	0.9	0.9	0.8	0.5	0.6	0.6	0.0	—	—	—	—	0.9	1.1	1.2	1.2	1.3	1.1	0.8	0.9	+0.1
Female	—	—	—	—	0.6	0.9	0.7	0.8	0.8	0.8	0.6	0.7	+0.1	—	—	—	—	0.7	0.7	1.0	0.8	1.0	1.0	0.6	0.6	0.0
College Plans:																										
None or under 4 yrs.	—	—	—	—	3.2	2.1	2.2	3.4	2.7	2.4	1.9	1.7	-0.2	—	—	—	—	1.7	1.8	2.1	1.8	2.5	2.7	1.7	2.2	+0.5
Complete 4 yrs.	—	—	—	—	0.5	0.7	0.7	0.6	0.6	0.5	0.5	0.5	0.0	—	—	—	—	0.6	0.7	1.0	0.9	0.8	0.8	0.5	0.6	0.0
Region:																										
Northeast	—	—	—	—	0.9	1.1	0.8	0.7	0.7	0.6	0.7	0.3	-0.4	—	—	—	—	0.5	0.7	1.0	1.4	1.6	1.2	0.8	0.7	-0.1
North Central	—	—	—	—	1.0	1.0	0.9	0.9	1.0	0.8	0.6	0.7	0.0	—	—	—	—	0.5	0.8	1.2	0.7	1.0	1.2	0.8	0.9	0.0
South	—	—	—	—	0.8	0.8	0.7	0.9	0.9	0.5	0.6	0.7	+0.1	—	—	—	—	1.1	1.1	1.2	1.0	1.0	1.3	0.7	0.5	-0.1
West	—	—	—	—	0.7	1.1	1.1	0.9	0.9	0.8	0.5	0.7	+0.2	—	—	—	—	0.9	0.9	1.0	0.8	0.8	0.5	0.5	1.2	+0.7s
Population																										
Density:																										
Large MSA	—	—	—	—	0.9	1.0	0.6	0.5	0.8	0.7	0.5	0.6	+0.1	—	—	—	—	0.9	0.9	1.3	0.8	0.9	1.5	0.8	0.6	-0.2
Other MSA	—	—	—	—	0.8	1.0	0.9	1.0	0.8	0.8	0.8	0.5	-0.3	—	—	—	—	0.7	1.0	1.0	1.1	1.2	1.0	0.7	0.8	+0.1
Non-MSA	—	—	—	—	0.9	0.9	1.0	1.0	1.1	0.5	0.4	0.8	+0.4	—	—	—	—	0.9	0.7	1.1	1.0	1.2	0.9	0.7	1.0	+0.3
Parental Education: <sup>a</sup>																										
1.0-2.0 (Low)	—	—	—	—	1.9	1.5	1.3	2.4	1.7	1.1	1.3	0.5	-0.9	—	—	—	—	1.7	0.8	0.9	1.2	1.8	1.1	0.9	1.5	+0.6
2.5-3.0	—	—	—	—	0.7	0.9	1.1	0.7	1.0	1.3	0.6	0.8	+0.2	—	—	—	—	0.6	0.7	1.0	1.0	1.1	1.1	0.9	0.7	-0.2
3.5-4.0	—	—	—	—	0.5	1.2	0.5	0.8	0.6	0.5	0.6	0.6	0.0	—	—	—	—	0.9	1.0	1.3	1.2	0.9	1.3	0.5	0.8	+0.3
4.5-5.0	—	—	—	—	0.8	0.8	0.8	0.6	0.8	0.5	0.5	0.6	+0.1	—	—	—	—	0.5	0.8	1.1	1.0	1.0	1.0	0.6	0.5	-0.1
5.5-6.0 (High)	—	—	—	—	0.7	0.8	1.0	1.1	1.1	0.3	0.4	0.4	0.0	—	—	—	—	0.9	1.1	1.0	0.7	1.1	1.1	0.6	1.1	+0.5
Race (2-year average): <sup>b</sup>																										
White	—	—	—	—	1.0	1.0	0.8	0.8	0.8	0.7	0.6	-0.1	—	—	—	—	0.9	1.0	1.1	1.1	1.2	1.0	0.8	0.8	-0.2	
Black	—	—	—	—	0.2	0.2	0.4	0.5	0.3	0.3	0.3	0.0	—	—	—	—	0.1	0.1	0.2	0.3	0.3	0.3	0.4	0.3	-0.1	
Hispanic	—	—	—	—	1.5	1.2	1.1	1.4	1.1	0.8	1.0	+0.2	—	—	—	—	0.8	1.1	1.4	1.3	0.9	0.8	0.8	0.8	0.0	

NOTES: Level of significance of difference between the two most recent classes:  $s = .05$ ,  $ss = .01$ ,  $sss = .001$ . '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error. See Table D-64 for the number of subgroup cases. See Appendix B for definition of variables in table. Data based on one of two forms in 1995; N is one-half of N indicated in Table D-64.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

<sup>b</sup>To derive percentages for each racial subgroup, data for the specified year *and* the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**TABLE D-28**  
**Heroin without a Needle: Trends in Annual Prevalence of Use by Subgroups for Twelfth Graders**

	Percentage who used in last twelve months																							'01-'02 change					
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997		1998	1999	2000	2001	2002
	Class of:																												
	Approx. N = 9400 15400 17100 17800 15500 15900 17500 17700 16300 15900 16000 15200 16300 16300 16700 15200 15000 15800 16300 15400 15400 14300 15400 15200 13600 12800 12800 12900																												
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.0	1.0	1.2	0.8	1.0	1.6	0.8	0.8	0.0
Gender:																													
Male	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.4	1.3	1.4	1.0	1.3	1.8	1.3	0.9	-0.4
Female	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.7	0.7	0.9	0.7	0.8	1.5	0.4	0.7	+0.3
College Plans:																													
None or under 4 years	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.4	1.7	1.6	1.3	1.5	2.7	1.3	2.2	+0.9
Complete 4 years	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.9	0.8	1.0	0.6	1.0	1.3	0.7	0.4	-0.3
Region:																													
Northeast	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.9	1.9	1.9	1.1	1.3	0.9	1.3	1.1	-0.2
North Central	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.7	0.5	1.0	0.6	0.7	1.6	1.1	0.9	-0.2
South	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.4	0.9	1.1	1.1	1.2	1.8	0.3	0.9	+0.6ss
West	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.8	0.7	0.6	0.3	1.0	2.0	0.9	0.4	-0.6
Population																													
Density:																													
Large MSA	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.3	1.1	1.2	0.9	0.9	2.5	1.0	0.6	-0.5
Other MSA	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.8	1.2	1.1	0.9	1.2	1.2	0.8	1.1	+0.3
Non-MSA	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.0	0.4	1.2	0.4	0.8	1.4	0.7	0.6	-0.1
Parental Education: <sup>a</sup>																													
(Low)																													
1.0-2.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.0	0.8	1.7	0.5	2.0	2.7	1.5	1.8	+0.3
2.5-3.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.1	0.6	0.8	1.1	1.1	1.8	0.5	0.9	+0.4
3.5-4.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.9	1.1	1.3	0.9	0.8	1.7	0.8	1.0	+0.2
4.5-5.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.2	1.2	1.2	0.8	1.1	1.6	1.1	0.2	-0.9ss
5.5-6.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.6	1.0	1.0	0.5	1.0	0.6	0.8	0.8	0.0
(High)																													
Race (2-year average): <sup>b</sup>																													
White	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.1	1.3	1.2	1.1	1.4	1.3	1.0	-0.4
Black	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.2	0.3	0.3	0.1	0.4	0.4	0.4	-0.1
Hispanic	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.9	0.6	0.4	0.6	1.8	1.3	0.5	-0.8

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available.  
 Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.  
 See Table D-65 for the number of subgroup cases. See Appendix B for definition of variables in table.  
 Data based on three of six forms; N is one-half of N indicated in Table D-65.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

<sup>b</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

Other Narcotics: Annual prevalence of use by subgroups is not reported for 8th and 10th graders.

**TABLE D-29**  
**Other Narcotics: Trends in Annual Prevalence of Use by Subgroups for Twelfth Graders**

	Percentage who used in last twelve months <sup>a</sup>																												
	Class of:																												
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001 <sup>b</sup>	2002	'01-'02 change
<i>Approx. N = 9400 15400 17100 17800 15500 15900 17500 17700 16300 15900 16000 15200 16300 16300 16700 15200 15000 15800 16300 15400 15400 14300 15400 15200 13600 12800 12800 12900</i>																													
Total	5.7	5.7	6.4	6.0	6.2	6.3	5.9	5.3	5.1	5.2	5.9	5.2	5.3	4.6	4.4	4.5	3.5	3.3	3.6	3.8	4.7	5.4	6.2	6.3	6.7	7.0	6.7	7.0	+0.2
Gender:																													
Male	6.6	6.8	7.3	6.9	7.3	7.1	6.5	6.0	6.0	6.2	6.8	5.9	5.6	5.1	4.9	5.0	3.9	3.3	3.6	4.3	5.6	6.4	7.1	7.4	8.2	8.0	8.0	7.7	-0.3
Female	4.8	4.7	5.4	5.1	5.1	5.4	5.3	4.6	4.2	4.2	5.1	4.6	4.9	4.1	3.8	3.9	3.1	3.3	3.3	3.4	3.8	4.4	5.4	5.1	5.2	5.9	5.6	6.0	+0.5
College Plans:																													
None or under 4 years	—	6.8	8.0	6.8	7.3	7.4	7.2	6.1	6.1	6.1	6.6	6.7	6.1	4.8	5.3	5.7	3.8	4.3	4.2	4.9	5.6	7.0	8.2	8.4	7.0	7.8	7.5	8.7	+1.2
Complete 4 years	—	4.6	4.7	4.9	5.0	5.1	4.8	4.6	4.3	4.3	5.4	4.3	4.8	4.6	3.9	4.0	3.5	3.0	3.3	3.5	4.4	4.9	5.7	5.5	6.6	6.6	6.4	6.2	-0.3
Region:																													
Northeast	6.1	6.5	6.6	6.8	7.0	5.7	7.2	5.6	5.6	6.7	7.3	5.7	6.0	3.7	4.7	4.1	3.2	3.7	4.6	3.5	4.3	6.1	7.8	6.5	6.2	6.7	7.2	8.6	+1.5
North																													
Central	6.2	6.2	7.5	6.7	6.1	7.6	6.2	5.5	5.3	4.8	6.3	5.8	5.2	4.4	5.7	4.6	4.2	3.6	3.2	4.7	5.2	6.0	6.1	6.5	7.5	7.2	7.8	7.0	-0.8
South	4.9	5.0	5.2	4.5	5.2	5.0	4.1	4.5	4.4	4.5	3.8	4.2	4.3	4.7	3.2	4.1	2.7	2.7	3.2	3.8	4.5	5.1	6.1	6.5	7.5	6.6	5.7	6.7	+1.0
West	5.4	5.0	6.0	6.7	7.1	6.8	7.2	6.2	5.2	5.3	7.1	5.4	6.1	5.7	4.9	5.3	4.4	3.5	4.0	3.1	4.7	4.1	4.7	5.2	4.7	7.5	6.5	5.8	-0.7
Population																													
Density:																													
Large MSA	7.3	6.7	6.7	6.9	7.3	6.9	6.9	5.2	6.0	5.2	6.0	4.8	5.2	4.0	4.1	3.8	3.3	3.5	3.1	4.1	4.8	4.6	4.6	5.2	5.4	7.0	8.4	6.7	-1.7
Other MSA	5.5	6.1	6.3	5.9	6.3	7.0	6.3	5.7	5.3	5.1	6.4	5.6	5.3	5.2	4.9	4.6	3.9	3.1	3.7	3.7	4.7	5.4	7.2	6.8	7.4	7.2	5.6	7.6	+2.0s
Non-MSA	4.8	4.6	6.2	5.4	5.3	4.8	4.8	4.9	4.1	5.2	5.2	5.0	5.2	4.4	3.8	4.8	3.1	3.6	3.7	3.6	4.7	6.0	6.0	6.5	6.8	6.6	6.9	6.1	-0.8
Parental Education: <sup>c</sup>																													
(Low)																													
1.0-2.0	5.4	5.0	5.1	5.0	5.2	5.2	4.8	4.8	4.8	4.7	4.5	4.7	4.1	3.9	3.6	3.8	3.8	3.5	3.8	3.0	4.0	4.5	4.7	4.7	4.6	4.6	5.1	5.6	+0.5
2.5-3.0	5.1	5.9	6.4	6.2	5.9	5.8	5.6	4.9	5.0	5.2	5.5	5.0	4.4	4.3	4.0	4.1	3.2	3.5	2.9	3.8	4.2	5.6	5.3	5.9	5.9	6.4	6.4	5.5	-0.9
3.5-4.0	4.2	6.3	6.7	6.0	6.3	6.9	6.6	5.2	4.5	5.1	6.5	6.0	5.6	4.3	4.6	4.6	3.7	3.2	3.7	3.4	4.4	5.5	6.5	6.8	7.2	7.3	7.1	9.0	+1.9
4.5-5.0	6.4	6.3	6.6	6.4	6.7	7.0	6.3	6.4	6.0	5.6	6.4	4.8	5.4	5.4	4.2	4.7	3.6	3.4	3.7	4.3	5.5	5.4	6.8	6.2	7.4	7.9	7.0	7.0	0.0
5.5-6.0	6.5	6.5	7.9	6.1	7.8	6.8	6.8	7.1	5.3	4.9	6.8	5.4	7.8	5.6	6.4	5.7	4.1	3.2	4.5	4.8	5.5	5.6	7.6	6.6	7.4	7.5	7.0	6.5	-0.5
(High)																													
Race (2-year average): <sup>d</sup>																													
White	—	—	6.6	6.7	6.6	6.8	6.7	6.2	5.8	5.7	6.3	6.3	6.0	5.8	5.3	5.2	4.7	4.1	4.1	4.3	5.0	5.9	7.1	7.6	7.7	8.3	8.5	9.0	+0.4
Black	—	—	2.2	2.0	1.8	1.7	1.9	1.8	1.7	1.6	1.6	1.7	1.6	1.5	1.5	1.4	1.1	0.9	1.0	1.5	1.4	1.2	1.8	2.4	2.0	1.7	1.8	1.3	-0.5
Hispanic	—	—	3.8	3.5	3.5	3.7	4.3	4.1	4.0	4.2	3.6	3.0	2.4	2.2	2.5	2.4	2.3	2.1	2.3	2.2	2.5	3.7	3.1	2.8	3.6	4.6	4.5	4.6	0.0

NOTES: Level of significance of difference between the two most recent classes:  $s = .05$ ,  $ss = .01$ ,  $sss = .001$ . '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error. See Table D-65 for the number of subgroup cases. See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Only drug use not under a doctor's orders is included here.

<sup>b</sup>In 2002 the question text was changed in half of the questionnaire forms. The list of examples of narcotics other than heroin was updated: Talwin, laudanum, and paregoric—all of which had negligible rates of use by 2001—were replaced with Vicodin, Oxycontin, and Percocet. The 2001 data presented here are based on all forms. The 2002 estimates are based on the 2001 prevalence of use rate plus the increase observed from 2001 to 2002 in the half-sample in which the question did not change. Thus, the change score given in the right-hand column is the difference between the data from the unchanged forms only in both 2001 and 2002.

<sup>c</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

<sup>d</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**TABLE D-30**  
**Oxycontin: Trends in Annual Prevalence of Use by Subgroups for Eighth and Tenth Graders**

	Percentage who used in last twelve months																									
	8th Grade													10th Grade												
	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	'01-'02 change	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	'01-'02 change
	<i>Approx. N = 17500 18600 18300 17300 17500 17800 18600 18100 16700 16700 16200 15100</i>													<i>14800 14800 15300 15800 17000 15600 15500 15000 13600 14300 14000 14300</i>												
Total	—	—	—	—	—	—	—	—	—	—	—	1.3	—	—	—	—	—	—	—	—	—	—	—	—	3.0	—
Gender:																										
Male	—	—	—	—	—	—	—	—	—	—	—	1.9	—	—	—	—	—	—	—	—	—	—	—	—	3.6	—
Female	—	—	—	—	—	—	—	—	—	—	—	0.9	—	—	—	—	—	—	—	—	—	—	—	—	2.4	—
College Plans:																										
None or under 4 yrs.	—	—	—	—	—	—	—	—	—	—	—	4.3	—	—	—	—	—	—	—	—	—	—	—	—	6.5	—
Complete 4 yrs.	—	—	—	—	—	—	—	—	—	—	—	1.0	—	—	—	—	—	—	—	—	—	—	—	—	2.5	—
Region:																										
Northeast	—	—	—	—	—	—	—	—	—	—	—	1.0	—	—	—	—	—	—	—	—	—	—	—	—	3.6	—
North Central	—	—	—	—	—	—	—	—	—	—	—	1.7	—	—	—	—	—	—	—	—	—	—	—	—	2.1	—
South	—	—	—	—	—	—	—	—	—	—	—	1.5	—	—	—	—	—	—	—	—	—	—	—	—	3.7	—
West	—	—	—	—	—	—	—	—	—	—	—	0.9	—	—	—	—	—	—	—	—	—	—	—	—	2.6	—
Population																										
Density:																										
Large MSA	—	—	—	—	—	—	—	—	—	—	—	1.2	—	—	—	—	—	—	—	—	—	—	—	—	2.0	—
Other MSA	—	—	—	—	—	—	—	—	—	—	—	1.4	—	—	—	—	—	—	—	—	—	—	—	—	3.3	—
Non-MSA	—	—	—	—	—	—	—	—	—	—	—	1.5	—	—	—	—	—	—	—	—	—	—	—	—	3.7	—
Parental																										
Education: <sup>a</sup>																										
1.0-2.0 (Low)	—	—	—	—	—	—	—	—	—	—	—	2.9	—	—	—	—	—	—	—	—	—	—	—	—	6.5	—
2.5-3.0	—	—	—	—	—	—	—	—	—	—	—	2.0	—	—	—	—	—	—	—	—	—	—	—	—	3.8	—
3.5-4.0	—	—	—	—	—	—	—	—	—	—	—	1.0	—	—	—	—	—	—	—	—	—	—	—	—	2.0	—
4.5-5.0	—	—	—	—	—	—	—	—	—	—	—	0.9	—	—	—	—	—	—	—	—	—	—	—	—	1.7	—
5.5-6.0 (High)	—	—	—	—	—	—	—	—	—	—	—	1.3	—	—	—	—	—	—	—	—	—	—	—	—	4.4	—
Race (2-year average): <sup>b</sup>																										
White	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Black	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hispanic	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

NOTES: Level of significance of difference between the two most recent classes:  $s = .05$ ,  $ss = .01$ ,  $sss = .001$ . '—' indicates data not available.  
 Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.  
 See Table D-64 for the number of subgroup cases. See Appendix B for definition of variables in table.  
 Data based on one of four forms; N is one-third of N indicated in Table D-64.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

<sup>b</sup>To derive percentages for each racial subgroup, data for the specified year *and* the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**TABLE D-31**  
**Oxycontin: Trends in Annual Prevalence of Use by Subgroups for Twelfth Graders**

	Percentage who used in last twelve months																							'01-'02 change					
	Class of:																												
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	
<i>Approx. N = 9400 15400 17100 17800 15500 15900 17500 17700 16300 15900 16000 15200 16300 16300 16700 15200 15000 15800 16300 15400 15400 14300 15400 15200 13600 12800 12800 12900</i>																													
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.0	—
Gender:																													
Male	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.6	—
Female	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.6	—
College Plans:																													
None or under 4 years	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	7.0	—
Complete 4 years	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.2	—
Region:																													
Northeast	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.0	—
North Central	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.0	—
South	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.6	—
West	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.6	—
Population																													
Density:																													
Large MSA	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.7	—
Other MSA	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.8	—
Non-MSA	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.7	—
Parental Education: <sup>a</sup>																													
(Low)																													
1.0-2.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.3	—
2.5-3.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.3	—
3.5-4.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.9	—
4.5-5.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.2	—
5.5-6.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.0	—
(High)																													
Race (2-year average): <sup>b</sup>																													
White	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Black	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hispanic	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

NOTES: Level of significance of difference between the two most recent classes:  $s = .05$ ,  $ss = .01$ ,  $sss = .001$ . '—' indicates data not available.  
 Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.  
 See Table D-65 for the number of subgroup cases. See Appendix B for definition of variables in table.  
 Data based on two of six forms; N is two-sixths of N indicated in Table D-65.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

<sup>b</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**TABLE D-32**  
**Vicodin: Trends in Annual Prevalence of Use by Subgroups for Eighth and Tenth Graders**

	Percentage who used in last twelve months																									
	8th Grade													10th Grade												
	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	'01-'02 change	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	'01-'02 change
	<i>Approx. N = 17500 18600 18300 17300 17500 17800 18600 18100 16700 16700 16200 15100</i>													<i>14800 14800 15300 15800 17000 15600 15500 15000 13600 14300 14000 14300</i>												
Total	—	—	—	—	—	—	—	—	—	—	—	2.5	—	—	—	—	—	—	—	—	—	—	—	—	6.9	—
Gender:																										
Male	—	—	—	—	—	—	—	—	—	—	—	2.7	—	—	—	—	—	—	—	—	—	—	—	—	7.4	—
Female	—	—	—	—	—	—	—	—	—	—	—	2.4	—	—	—	—	—	—	—	—	—	—	—	—	6.1	—
College Plans:																										
None or under 4 yrs.	—	—	—	—	—	—	—	—	—	—	—	5.9	—	—	—	—	—	—	—	—	—	—	—	—	13.4	—
Complete 4 yrs.	—	—	—	—	—	—	—	—	—	—	—	2.1	—	—	—	—	—	—	—	—	—	—	—	—	5.7	—
Region:																										
Northeast	—	—	—	—	—	—	—	—	—	—	—	1.5	—	—	—	—	—	—	—	—	—	—	—	—	6.2	—
North Central	—	—	—	—	—	—	—	—	—	—	—	3.3	—	—	—	—	—	—	—	—	—	—	—	—	7.2	—
South	—	—	—	—	—	—	—	—	—	—	—	2.5	—	—	—	—	—	—	—	—	—	—	—	—	5.3	—
West	—	—	—	—	—	—	—	—	—	—	—	2.6	—	—	—	—	—	—	—	—	—	—	—	—	10.0	—
Population																										
Density:																										
Large MSA	—	—	—	—	—	—	—	—	—	—	—	2.6	—	—	—	—	—	—	—	—	—	—	—	—	5.7	—
Other MSA	—	—	—	—	—	—	—	—	—	—	—	3.0	—	—	—	—	—	—	—	—	—	—	—	—	7.9	—
Non-MSA	—	—	—	—	—	—	—	—	—	—	—	1.6	—	—	—	—	—	—	—	—	—	—	—	—	6.2	—
Parental Education: <sup>a</sup>																										
1.0-2.0 (Low)	—	—	—	—	—	—	—	—	—	—	—	3.3	—	—	—	—	—	—	—	—	—	—	—	—	6.1	—
2.5-3.0	—	—	—	—	—	—	—	—	—	—	—	3.9	—	—	—	—	—	—	—	—	—	—	—	—	8.0	—
3.5-4.0	—	—	—	—	—	—	—	—	—	—	—	3.4	—	—	—	—	—	—	—	—	—	—	—	—	7.5	—
4.5-5.0	—	—	—	—	—	—	—	—	—	—	—	1.4	—	—	—	—	—	—	—	—	—	—	—	—	5.7	—
5.5-6.0 (High)	—	—	—	—	—	—	—	—	—	—	—	1.3	—	—	—	—	—	—	—	—	—	—	—	—	6.6	—
Race (2-year average): <sup>b</sup>																										
White	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Black	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hispanic	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

NOTES: Level of significance of difference between the two most recent classes:  $s = .05$ ,  $ss = .01$ ,  $sss = .001$ . '—' indicates data not available.  
 Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.  
 See Table D-64 for the number of subgroup cases. See Appendix B for definition of variables in table.  
 Data based on one of four forms; N is one-third of N indicated in Table D-64.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

<sup>b</sup>To derive percentages for each racial subgroup, data for the specified year *and* the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**TABLE D-33**  
**Vicodin: Trends in Annual Prevalence of Use by Subgroups for Twelfth Graders**

	Percentage who used in last twelve months																							'01-'02 change					
	Class of:																												
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	
<i>Approx. N = 9400 15400 17100 17800 15500 15900 17500 17700 16300 15900 16000 15200 16300 16300 16700 15200 15000 15800 16300 15400 15400 14300 15400 15200 13600 12800 12800 12900</i>																													
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9.6	—
Gender:																													
Male	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	12.0	—
Female	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	7.5	—
College Plans:																													
None or under 4 years	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	13.0	—
Complete 4 years	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.4	—
Region:																													
Northeast	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.1	—
North Central	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	11.6	—
South	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.1	—
West	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	10.9	—
Population																													
Density:																													
Large MSA	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9.7	—
Other MSA	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	10.6	—
Non-MSA	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	7.8	—
Parental																													
Education: <sup>a</sup>																													
(Low)																													
1.0-2.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	12.1	—
2.5-3.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9.6	—
3.5-4.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9.5	—
4.5-5.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9.9	—
5.5-6.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.6	—
(High)																													
Race (2-year																													
average): <sup>b</sup>																													
White	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Black	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hispanic	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

NOTES: Level of significance of difference between the two most recent classes:  $s = .05$ ,  $ss = .01$ ,  $sss = .001$ . '—' indicates data not available.  
 Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.  
 See Table D-65 for the number of subgroup cases. See Appendix B for definition of variables in table.  
 Data based on two of six forms; N is two-sixths of N indicated in Table D-65.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

<sup>b</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.



**TABLE D-34**  
**Amphetamines: Trends in Annual Prevalence of Use by Subgroups for Eighth and Tenth Graders**

	Percentage who used in last twelve months <sup>a</sup>																									
	8th Grade													10th Grade												
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	'01-'02 change	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	'01-'02 change
	<i>Approx. N = 17500 18600 18300 17300 17500 17800 18600 18100 16700 16700 16200 15100</i>													<i>14800 14800 15300 15800 17000 15600 15500 15000 13600 14300 14000 14300</i>												
Total	6.2	6.5	7.2	7.9	8.7	9.1	8.1	7.2	6.9	6.5	6.7	5.5	-1.2s	8.2	8.2	9.6	10.2	11.9	12.4	12.1	10.7	10.4	11.1	11.7	10.7	-1.0
Gender:																										
Male	5.5	5.2	5.6	6.5	7.0	6.7	6.6	5.6	5.6	5.1	5.7	4.8	-0.9	7.0	7.0	8.2	8.6	9.6	10.5	10.3	9.0	9.2	10.3	10.6	9.6	-1.1
Female	6.9	7.9	8.8	9.3	10.3	11.3	9.6	8.7	8.2	7.7	7.5	6.2	-1.4s	9.3	9.3	10.9	11.7	14.1	14.2	13.9	12.3	11.5	11.8	12.7	11.8	-0.9
College Plans:																										
None or under 4 yrs.	11.6	12.9	14.6	14.5	17.1	15.5	14.1	15.4	14.0	14.2	12.0	12.2	+0.3	13.4	14.4	15.5	16.6	19.9	20.3	19.3	17.9	16.3	18.2	20.4	17.5	-2.9
Complete 4 yrs.	5.4	5.7	6.3	7.0	7.6	8.3	7.5	6.3	6.2	5.7	6.1	4.8	-1.3ss	7.1	6.9	8.4	8.9	10.6	11.1	10.9	9.5	9.5	10.0	10.3	9.7	-0.6
Region:																										
Northeast	5.1	4.3	5.9	6.9	7.3	7.6	6.5	5.5	5.6	5.0	5.5	3.4	-2.1s	6.1	5.4	7.8	8.7	9.8	11.5	10.7	11.0	12.1	9.8	10.5	9.3	-1.2
North Central	7.1	8.0	7.3	7.8	10.6	10.8	9.3	7.2	8.3	7.8	7.1	5.9	-1.2	10.3	9.4	9.5	10.5	13.3	14.0	11.0	9.8	10.3	11.1	10.7	10.4	-0.3
South	6.1	6.6	7.3	8.3	8.6	8.7	8.1	8.4	7.5	7.0	8.1	6.7	-1.5	8.1	8.7	10.9	11.2	12.8	12.6	14.2	12.6	10.8	12.0	14.0	12.2	-1.8
West	6.0	6.6	8.6	8.4	7.9	9.1	8.3	6.7	5.4	5.4	4.6	4.7	+0.2	7.7	8.4	9.5	9.4	10.6	10.6	11.1	8.5	8.2	10.9	9.9	9.6	-0.3
Population																										
Density:																										
Large MSA	5.8	4.8	5.6	6.6	7.2	7.9	6.4	5.4	5.2	5.2	5.0	4.2	-0.8	7.5	6.7	7.6	8.0	9.2	10.5	9.9	8.9	9.3	10.7	9.8	9.8	0.0
Other MSA	6.2	7.5	8.2	8.8	8.9	10.0	8.1	7.4	6.8	6.4	7.6	5.9	-1.6s	7.9	8.0	9.5	10.8	12.8	12.8	11.5	10.3	10.6	9.9	11.1	11.0	-0.1
Non-MSA	6.7	7.0	7.5	7.5	10.1	8.9	9.9	8.8	9.3	8.5	6.9	6.3	-0.7	9.3	10.0	11.6	11.2	13.3	13.7	15.5	13.8	11.5	13.6	15.1	11.2	-3.9ss
Parental Education: <sup>b</sup>																										
1.0-2.0 (Low)	8.3	8.4	10.2	11.2	11.8	10.1	9.6	11.2	8.9	9.7	7.4	6.3	-1.1	10.0	11.9	12.3	10.8	14.3	15.1	12.2	12.6	10.7	13.3	12.3	13.1	+0.8
2.5-3.0	6.6	7.3	8.2	9.0	10.6	9.9	9.2	8.1	7.8	8.1	8.2	7.3	-0.9	9.7	8.9	10.5	11.6	14.2	13.0	14.1	12.8	11.3	12.9	13.6	12.8	-0.8
3.5-4.0	6.7	7.4	7.8	8.5	10.1	10.3	8.9	7.7	8.2	6.8	7.8	5.7	-2.1ss	7.9	8.4	10.5	11.1	12.4	14.1	13.5	11.1	11.2	12.2	12.6	11.1	-1.5
4.5-5.0	5.3	5.5	6.4	6.6	6.8	8.6	7.5	6.2	5.6	5.2	5.9	4.9	-1.0	7.4	6.6	7.5	8.9	10.7	10.7	10.6	9.0	9.8	9.7	10.5	9.5	-1.0
5.5-6.0 (High)	5.7	5.4	5.3	5.7	6.4	8.7	7.3	6.4	5.8	5.2	4.5	4.3	-0.2	6.9	6.9	8.3	7.3	8.8	10.1	9.2	9.4	9.8	8.8	9.2	8.1	-1.2
Race (2-year average): <sup>c</sup>																										
White	—	6.8	7.4	8.1	9.3	10.2	9.9	9.0	8.4	8.0	7.8	7.2	-0.6	—	9.4	10.1	11.0	12.4	13.9	14.2	13.6	12.6	12.7	13.4	13.4	0.0
Black	—	3.3	3.4	3.9	3.9	3.4	3.0	2.8	2.7	2.4	2.3	2.7	+0.4	—	2.8	3.0	4.0	4.0	3.4	3.1	2.9	2.8	2.5	2.9	3.5	+0.6
Hispanic	—	7.2	7.7	8.6	8.7	8.6	8.1	7.2	7.0	6.8	6.6	5.9	-0.7	—	6.2	7.0	7.7	8.9	10.3	9.8	8.9	8.8	9.1	8.3	7.9	-0.4

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available.  
 Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.  
 See Table D-64 for the number of subgroup cases. See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Only drug use not under a doctor's orders is included here.

<sup>b</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

<sup>c</sup>To derive percentages for each racial subgroup, data for the specified year *and* the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**TABLE D-35**  
**Amphetamines, Adjusted: Trends in Annual Prevalence of Use by Subgroups for Twelfth Graders**

	Percentage who used in last twelve months <sup>a</sup>																								'01-'02 change					
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998		1999	2000	2001	2002	
	Class of:																													
	Approx. N = 9400 15400 17100 17800 15500 15900 17500 17700 16300 15900 16000 15200 16300 16300 16700 15200 15000 15800 16300 15400 15400 14300 15400 15200 13600 12800 12800 12900																													
Total	16.2	15.8	16.3	17.1	18.3	20.8	26.0	20.3	17.9	17.7	15.8	13.4	12.2	10.9	10.8	9.1	8.2	7.1	8.4	9.4	9.3	9.5	10.2	10.1	10.2	10.5	10.9	11.1	+0.2	
Gender:																														
Male	15.6	15.8	16.0	16.9	18.4	19.7	24.8	19.6	17.2	16.8	14.9	12.7	11.8	10.8	11.1	9.4	8.3	7.2	8.2	9.2	9.5	9.6	10.1	10.3	10.6	10.4	10.9	11.3	+0.4	
Female	16.5	15.4	16.4	17.1	17.8	21.8	26.9	20.3	17.9	18.2	16.4	13.8	12.4	10.9	10.5	8.6	7.9	6.9	8.5	9.4	8.9	8.8	10.2	9.8	9.6	10.5	10.6	10.7	+0.1	
College Plans:																														
None or under 4 years	—	19.3	20.5	20.0	21.8	25.8	30.9	23.7	20.9	22.2	19.7	17.7	16.0	13.9	15.1	12.6	11.0	9.7	11.0	13.4	12.3	12.8	14.1	13.6	12.7	13.9	14.4	14.8	+0.4	
Complete 4 years	—	11.9	11.5	13.7	14.5	16.5	22.3	16.8	14.5	14.2	13.3	10.9	10.2	9.5	9.1	7.4	7.0	6.1	7.6	8.0	8.3	8.4	8.9	9.0	9.5	9.6	9.8	10.1	+0.4	
Region:																														
Northeast	16.5	14.7	16.8	19.6	22.0	22.0	28.8	21.5	17.9	19.0	16.8	12.6	10.4	8.4	9.0	6.3	6.5	6.2	8.1	7.4	9.6	10.4	11.1	9.0	9.9	10.6	12.0	11.5	-0.5	
North Central	18.7	17.8	19.0	18.2	18.3	22.2	30.1	24.1	20.4	20.3	17.3	15.2	13.5	12.2	13.3	10.7	10.1	8.4	8.9	12.0	9.5	10.0	10.8	11.0	10.5	10.4	12.7	11.3	-1.4	
South	12.6	13.7	13.2	14.0	14.0	17.7	19.6	16.4	15.4	15.1	12.8	11.5	11.5	10.8	9.9	8.9	7.9	6.7	8.3	9.0	9.2	9.1	9.8	10.4	10.8	10.2	9.5	11.7	+2.3s	
West	18.5	17.2	16.0	17.8	20.7	22.1	26.6	18.7	18.2	16.9	17.3	15.0	13.4	11.8	11.1	10.2	7.8	6.9	8.3	8.4	8.9	8.3	9.1	9.6	8.8	10.9	9.7	9.6	0.0	
Population Density:																														
Large MSA	19.6	15.4	15.3	17.7	19.5	21.9	28.0	21.6	18.1	17.7	15.0	11.2	10.9	8.8	7.1	6.5	6.2	6.0	6.5	7.8	9.1	7.9	8.9	9.0	7.0	8.3	10.6	10.7	+0.1	
Other MSA	15.5	16.3	17.1	17.5	18.9	20.8	25.5	20.7	19.6	17.1	15.7	14.2	11.9	11.9	11.4	9.6	8.4	6.7	8.5	9.4	8.5	8.9	9.5	9.9	10.8	10.9	10.8	11.0	+0.1	
Non-MSA	14.8	15.4	15.9	16.0	16.6	19.9	25.1	18.8	15.6	18.5	16.6	14.1	14.0	11.3	13.3	10.6	9.5	9.0	9.8	10.9	10.8	11.9	13.0	12.2	12.4	12.4	11.4	12.1	+0.7	
Parental Education: <sup>b</sup>																														
(Low)																														
1.0-2.0	15.7	13.4	14.5	14.9	16.0	19.1	22.3	18.7	15.7	17.1	14.5	11.9	11.9	9.8	10.4	7.6	9.5	7.0	9.0	10.4	9.9	8.1	9.8	9.7	9.9	11.0	8.9	8.1	-0.8	
2.5-3.0	16.7	16.9	17.4	17.3	18.4	22.2	26.7	21.9	19.6	19.2	17.0	15.2	13.3	11.1	11.7	9.7	9.1	7.7	8.6	10.3	9.9	10.5	10.3	10.6	11.3	11.0	12.2	11.4	-0.9	
3.5-4.0	14.9	16.6	16.1	18.2	19.6	21.5	26.9	21.7	19.4	18.5	17.2	14.3	12.6	11.8	12.3	10.6	8.9	7.7	9.1	9.4	9.1	9.3	10.8	11.4	10.8	10.6	11.6	12.3	+0.7	
4.5-5.0	14.5	16.8	15.9	16.9	17.1	20.0	26.2	19.1	18.9	15.9	15.1	12.0	11.7	10.3	9.4	8.1	6.5	6.3	8.0	9.5	9.2	8.9	9.4	9.4	9.7	10.3	10.7	11.1	+0.5	
5.5-6.0	12.0	14.6	16.0	17.2	20.4	17.9	26.8	20.5	16.1	14.0	10.9	10.1	10.4	10.0	9.1	7.3	5.7	5.8	7.6	7.1	8.1	9.1	10.2	8.7	8.4	10.2	8.7	10.2	+1.5	
(High)																														
Race (2-year average) <sup>c</sup>																														
White	—	—	17.3	18.2	19.2	21.3	26.4	23.6	22.3	20.5	18.9	16.4	14.3	13.0	12.4	11.4	9.8	8.8	9.0	10.4	10.7	10.5	11.4	12.1	11.9	11.9	12.6	13.2	+0.6	
Black	—	—	5.3	4.7	4.2	5.3	5.8	6.0	5.7	4.7	4.3	4.0	3.8	3.9	3.6	3.1	2.7	2.2	2.3	3.4	3.4	2.9	2.8	2.8	2.5	2.6	3.0	2.9	-0.1	
Hispanic	—	—	12.3	12.2	12.8	14.5	17.5	12.3	11.5	13.2	14.6	10.8	8.7	9.6	9.0	7.0	6.1	6.0	6.2	6.4	7.1	7.8	7.3	7.0	7.6	9.2	9.2	7.9	-1.4	

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error. See Table D-65 for the number of subgroup cases. See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Beginning in 1982, the question about amphetamine use was revised to get respondents to exclude the inappropriate reporting of nonprescription amphetamines. The prevalence of use rate dropped slightly as a result of this methodological change. (In 1982 and 1983, these data were based on three of the five questionnaire forms.) Only drug use which was not under a doctor's orders is included here.

<sup>b</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

<sup>c</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**TABLE D-36**  
**Ritalin: Trends in Annual Prevalence of Use by Subgroups for Eighth and Tenth Graders**

	Percentage who used in last twelve months																									
	8th Grade													10th Grade												
	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	'01-'02 change	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	'01-'02 change
	<i>Approx. N = 17500 18600 18300 17300 17500 17800 18600 18100 16700 16700 16200 15100</i>													<i>14800 14800 15300 15800 17000 15600 15500 15000 13600 14300 14000 14300</i>												
Total	—	—	—	—	—	—	—	—	—	—	2.9	2.8	-0.1	—	—	—	—	—	—	—	—	—	—	4.8	4.8	0.0
Gender:																										
Male	—	—	—	—	—	—	—	—	—	—	3.2	3.2	+0.1	—	—	—	—	—	—	—	—	—	—	5.2	4.9	-0.3
Female	—	—	—	—	—	—	—	—	—	—	2.6	2.5	-0.2	—	—	—	—	—	—	—	—	—	—	4.3	4.6	+0.3
College Plans:																										
None or under 4 yrs.	—	—	—	—	—	—	—	—	—	—	8.1	7.7	-0.4	—	—	—	—	—	—	—	—	—	—	7.2	10.2	+3.0
Complete 4 yrs.	—	—	—	—	—	—	—	—	—	—	2.4	2.2	-0.1	—	—	—	—	—	—	—	—	—	—	4.3	3.8	-0.5
Region:																										
Northeast	—	—	—	—	—	—	—	—	—	—	1.5	2.8	+1.3	—	—	—	—	—	—	—	—	—	—	5.5	3.6	-1.9
North Central	—	—	—	—	—	—	—	—	—	—	3.0	3.0	0.0	—	—	—	—	—	—	—	—	—	—	4.6	4.8	+0.1
South	—	—	—	—	—	—	—	—	—	—	3.5	2.8	-0.7	—	—	—	—	—	—	—	—	—	—	5.3	5.2	0.0
West	—	—	—	—	—	—	—	—	—	—	2.9	2.5	-0.3	—	—	—	—	—	—	—	—	—	—	3.1	5.1	+2.0
Population																										
Density:																										
Large MSA	—	—	—	—	—	—	—	—	—	—	2.2	2.3	0.0	—	—	—	—	—	—	—	—	—	—	4.3	3.6	-0.7
Other MSA	—	—	—	—	—	—	—	—	—	—	2.9	3.1	+0.1	—	—	—	—	—	—	—	—	—	—	4.6	5.8	+1.2
Non-MSA	—	—	—	—	—	—	—	—	—	—	3.5	2.8	-0.7	—	—	—	—	—	—	—	—	—	—	5.8	4.3	-1.6
Parental																										
Education: <sup>a</sup>																										
1.0-2.0 (Low)	—	—	—	—	—	—	—	—	—	—	4.8	5.3	+0.5	—	—	—	—	—	—	—	—	—	—	5.0	7.7	+2.7
2.5-3.0	—	—	—	—	—	—	—	—	—	—	3.3	4.0	+0.7	—	—	—	—	—	—	—	—	—	—	5.4	5.9	+0.5
3.5-4.0	—	—	—	—	—	—	—	—	—	—	3.5	3.3	-0.2	—	—	—	—	—	—	—	—	—	—	5.0	4.2	-0.9
4.5-5.0	—	—	—	—	—	—	—	—	—	—	2.4	1.5	-0.9	—	—	—	—	—	—	—	—	—	—	4.2	3.6	-0.6
5.5-6.0 (High)	—	—	—	—	—	—	—	—	—	—	2.1	1.7	-0.3	—	—	—	—	—	—	—	—	—	—	4.6	4.7	+0.1
Race (2-year average): <sup>b</sup>																										
White	—	—	—	—	—	—	—	—	—	—	—	3.0	—	—	—	—	—	—	—	—	—	—	—	—	5.5	—
Black	—	—	—	—	—	—	—	—	—	—	—	1.0	—	—	—	—	—	—	—	—	—	—	—	—	1.8	—
Hispanic	—	—	—	—	—	—	—	—	—	—	—	3.8	—	—	—	—	—	—	—	—	—	—	—	—	3.1	—

NOTES: Level of significance of difference between the two most recent classes:  $s = .05$ ,  $ss = .01$ ,  $sss = .001$ . '—' indicates data not available.  
 Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.  
 See Table D-64 for the number of subgroup cases. See Appendix B for definition of variables in table.  
 Data based on one of four forms; N is one-third of N indicated in Table D-64.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

<sup>b</sup>To derive percentages for each racial subgroup, data for the specified year *and* the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**TABLE D-37**  
**Ritalin: Trends in Annual Prevalence of Use by Subgroups for Twelfth Graders**

	Percentage who used in last twelve months																							'01-'02 change					
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997		1998	1999	2000	2001	2002
	Class of:																												
	Approx. N = 9400 15400 17100 17800 15500 15900 17500 17700 16300 15900 16000 15200 16300 16300 16700 15200 15000 15800 16300 15400 15400 14300 15400 15200 13600 12800 12800 12900																												
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.1	4.0	-1.1
Gender:																													
Male	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.0	5.1	-0.8
Female	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.1	2.8	-1.3
College Plans:																													
None or under 4 years	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.4	7.7	+1.3
Complete 4 years	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.7	3.0	-1.7 <sup>ss</sup>
Region:																													
Northeast	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.7	4.5	-0.2
North Central	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	7.4	5.4	-1.9
South	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.1	3.4	-0.7
West	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.8	2.6	-1.2
Population																													
Density:																													
Large MSA	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	7.2	3.9	-3.2 <sup>s</sup>
Other MSA	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.7	4.0	+0.4
Non-MSA	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.4	4.0	-1.4
Parental Education: <sup>a</sup>																													
(Low)																													
1.0-2.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.6	5.3	-0.2
2.5-3.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.5	4.2	-0.3
3.5-4.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.0	3.9	-1.1
4.5-5.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.7	3.5	-1.1
5.5-6.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.6	3.9	-2.7
(High)																													
Race (2-year average): <sup>b</sup>																													
White	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.4	—
Black	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.8	—
Hispanic	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.1	—

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available.  
 Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.  
 See Table D-65 for the number of subgroup cases. See Appendix B for definition of variables in table.  
 Data based on two of six forms; N is two-sixths of N indicated in Table D-65.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

<sup>b</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**TABLE D-38**  
**Methamphetamine: Trends in Annual Prevalence of Use by Subgroups for Eighth and Tenth Graders**

	Percentage who used in last twelve months																									
	8th Grade												10th Grade													
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	'01-'02 change	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	'01-'02 change
	<i>Approx. N = 17500 18600 18300 17300 17500 17800 18600 18100 16700 16700 16200 15100</i>												<i>14800 14800 15300 15800 17000 15600 15500 15000 13600 14300 14000 14300</i>													
Total	—	—	—	—	—	—	—	—	3.2	2.5	2.8	2.2	-0.6	—	—	—	—	—	—	—	—	4.6	4.0	3.7	3.9	+0.2
Gender:																										
Male	—	—	—	—	—	—	—	—	3.1	2.2	2.5	2.0	-0.5	—	—	—	—	—	—	—	—	4.5	4.5	3.8	3.9	0.0
Female	—	—	—	—	—	—	—	—	3.2	2.8	3.0	2.4	-0.6	—	—	—	—	—	—	—	—	4.7	3.6	3.5	3.6	+0.1
College Plans:																										
None or under 4 yrs.	—	—	—	—	—	—	—	—	7.4	6.8	6.6	6.6	-0.1	—	—	—	—	—	—	—	—	9.1	8.8	7.0	9.1	+2.1
Complete 4 yrs.	—	—	—	—	—	—	—	—	2.7	2.0	2.3	1.7	-0.5	—	—	—	—	—	—	—	—	3.9	3.3	3.1	3.0	-0.1
Region:																										
Northeast	—	—	—	—	—	—	—	—	1.6	2.0	1.2	0.8	-0.4	—	—	—	—	—	—	—	—	5.1	4.1	2.3	1.5	-0.8
North Central	—	—	—	—	—	—	—	—	4.4	3.0	3.2	2.5	-0.7	—	—	—	—	—	—	—	—	4.6	4.0	3.8	3.0	-0.8
South	—	—	—	—	—	—	—	—	3.4	2.4	3.4	2.8	-0.6	—	—	—	—	—	—	—	—	4.0	3.8	4.0	4.6	+0.6
West	—	—	—	—	—	—	—	—	2.8	2.5	2.4	2.0	-0.5	—	—	—	—	—	—	—	—	5.1	4.4	4.6	5.8	+1.2
Population																										
Density:																										
Large MSA	—	—	—	—	—	—	—	—	2.2	2.1	1.6	1.3	-0.3	—	—	—	—	—	—	—	—	3.8	4.4	4.0	3.1	-0.9
Other MSA	—	—	—	—	—	—	—	—	3.6	2.6	3.4	2.5	-0.9	—	—	—	—	—	—	—	—	4.8	3.4	3.6	4.4	+0.8
Non-MSA	—	—	—	—	—	—	—	—	3.5	3.0	2.8	2.7	-0.1	—	—	—	—	—	—	—	—	5.2	4.8	3.6	3.7	+0.1
Parental																										
Education: <sup>a</sup>																										
1.0-2.0 (Low)	—	—	—	—	—	—	—	—	6.3	5.0	4.4	4.3	-0.1	—	—	—	—	—	—	—	—	7.2	7.0	5.6	6.2	+0.6
2.5-3.0	—	—	—	—	—	—	—	—	4.3	3.1	4.0	3.0	-1.1	—	—	—	—	—	—	—	—	4.2	4.3	4.6	4.9	+0.3
3.5-4.0	—	—	—	—	—	—	—	—	3.3	2.4	3.0	2.0	-1.0	—	—	—	—	—	—	—	—	4.8	4.3	3.2	3.7	+0.4
4.5-5.0	—	—	—	—	—	—	—	—	1.9	1.3	1.6	1.9	+0.3	—	—	—	—	—	—	—	—	4.8	3.5	3.6	2.4	-1.2
5.5-6.0 (High)	—	—	—	—	—	—	—	—	3.2	2.2	1.2	1.1	-0.1	—	—	—	—	—	—	—	—	3.3	3.5	2.5	4.0	+1.5
Race (2-year average): <sup>b</sup>																										
White	—	—	—	—	—	—	—	—	3.2	3.1	2.8	-0.2	—	—	—	—	—	—	—	—	—	4.7	4.1	4.1	0.0	
Black	—	—	—	—	—	—	—	—	1.1	0.8	0.6	-0.2	—	—	—	—	—	—	—	—	—	0.4	1.0	1.1	+0.1	
Hispanic	—	—	—	—	—	—	—	—	4.0	3.3	3.2	-0.1	—	—	—	—	—	—	—	—	—	3.9	3.0	4.4	+1.3	

NOTES: Level of significance of difference between the two most recent classes:  $s = .05$ ,  $ss = .01$ ,  $sss = .001$ . '—' indicates data not available.  
Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.  
See Table D-64 for the number of subgroup cases. See Appendix B for definition of variables in table.  
Data based on one of four forms; N is one-third of N indicated in Table D-64.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

<sup>b</sup>To derive percentages for each racial subgroup, data for the specified year *and* the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**TABLE D-39**  
**Methamphetamine: Trends in Annual Prevalence of Use by Subgroups for Twelfth Graders**

	Percentage who used in last twelve months																							'01-'02 change						
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997		1998	1999	2000	2001	2002	
	Class of:																													
	Approx. N = 9400 15400 17100 17800 15500 15900 17500 17700 16300 15900 16000 15200 16300 16300 16700 15200 15000 15800 16300 15400 15400 14300 15400 15200 13600 12800 12800 12900																													
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.7	4.3	3.9	3.6	-0.3	
Gender:																														
Male	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.0	4.4	4.3	4.3	-0.1
Female	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.5	4.2	3.4	3.0	-0.4
College Plans:																														
None or under 4 years	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.8	6.2	6.9	6.5	-0.3
Complete 4 years	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.0	3.8	3.2	2.7	-0.4
Region:																														
Northeast	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.1	4.5	3.4	1.6	-1.8s
North Central	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.1	4.1	4.7	4.5	-0.2
South	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.9	3.7	3.4	3.0	-0.3
West	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	7.1	5.4	4.4	5.4	+1.1
Population																														
Density:																														
Large MSA	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.2	3.6	2.7	2.1	-0.6
Other MSA	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.0	4.9	4.0	4.4	+0.4
Non-MSA	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.4	4.3	5.3	4.1	-1.2
Parental																														
Education: <sup>a</sup>																														
(Low)																														
1.0-2.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.0	7.7	5.0	3.5	-1.6
2.5-3.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.8	3.5	4.8	4.9	+0.1
3.5-4.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.2	3.9	3.8	3.8	0.0
4.5-5.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.7	4.2	3.1	2.9	-0.2
5.5-6.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.2	5.5	3.2	3.1	-0.2
(High)																														
Race (2-year																														
average): <sup>b</sup>																														
White	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.9	4.6	4.2	-0.4
Black	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.1	1.0	0.5	-0.5
Hispanic	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.9	4.6	3.9	-0.7

NOTES: Level of significance of difference between the two most recent classes:  $s = .05$ ,  $ss = .01$ ,  $sss = .001$ . '—' indicates data not available.  
 Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.  
 See Table D-65 for the number of subgroup cases. See Appendix B for definition of variables in table.  
 Data based on two of six forms; N is two-sixths of N indicated in Table D-65.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

<sup>b</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

Ice (Crystal Methamphetamine): Annual prevalence of use by subgroups is not asked of 8th and 10th graders.

**TABLE D-40**  
**Ice (Crystal Methamphetamine): Trends in Annual Prevalence of Use by Subgroups for Twelfth Graders**

Percentage who used in last twelve months																														
	Class of:																							'01-'02 change						
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997		1998	1999	2000	2001	2002	
<i>Approx. N = 9400 15400 17100 17800 15500 15900 17500 17700 16300 15900 16000 15200 16300 16300 16700 15200 15000 15800 16300 15400 15400 14300 15400 15200 13600 12800 12800 12900</i>																														
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.3	1.4	1.3	1.7	1.8	2.4	2.8	2.3	3.0	1.9	2.2	2.5	3.1	+0.6	
Gender:																														
Male	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.5	1.9	1.5	1.9	2.2	2.6	3.9	2.6	3.9	2.2	2.5	2.7	3.5	+0.8	
Female	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.0	0.9	1.0	1.2	1.3	2.1	1.7	2.1	2.1	1.6	1.9	2.1	2.5	+0.5	
College Plans:																														
None or under 4 years	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.4	1.9	2.2	2.6	2.4	4.3	5.1	3.8	5.0	2.3	3.8	4.2	4.8	+0.6	
Complete 4 years	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.2	1.2	1.0	1.4	1.5	1.8	2.1	1.9	2.4	1.8	1.7	2.0	2.6	+0.5	
Region:																														
Northeast	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.6	1.1	0.9	1.1	0.9	1.4	3.2	2.8	2.6	1.0	1.0	1.9	2.6	+0.7	
North Central	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.1	1.4	1.1	1.5	2.3	2.2	2.1	1.9	2.7	1.7	2.8	2.1	2.0	-0.2	
South	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.5	1.0	1.0	1.2	1.2	1.8	2.0	1.6	3.1	2.3	2.0	1.7	3.5	+1.8 <sup>ss</sup>	
West	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.5	2.2	2.6	3.2	2.8	4.7	4.9	3.7	3.4	2.5	2.9	4.7	4.0	-0.7	
Population																														
Density:																														
Large MSA	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.2	1.3	1.5	2.2	2.0	3.0	4.6	2.9	2.5	1.6	2.3	2.7	2.2	-0.5	
Other MSA	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.3	1.7	1.3	1.7	1.8	2.0	2.0	2.0	3.3	2.1	1.7	2.3	3.6	+1.3 <sup>s</sup>	
Non-MSA	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.2	0.8	1.2	1.2	1.6	2.3	2.6	2.1	2.8	2.0	3.0	2.5	3.2	+0.7	
Parental Education: <sup>a</sup>																														
(Low)																														
1.0-2.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.1	1.0	0.9	1.6	1.0	3.2	3.4	2.2	2.8	3.6	3.2	5.9	3.7	-2.2	
2.5-3.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.4	1.1	1.1	1.2	3.0	2.6	3.0	2.5	3.2	1.3	1.7	2.4	3.6	+1.2	
3.5-4.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.4	1.2	1.5	2.3	1.6	1.9	2.6	2.2	3.6	2.5	1.9	2.8	2.4	-0.4	
4.5-5.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.2	1.8	1.4	1.8	1.3	2.5	2.9	2.9	2.6	1.3	2.8	1.5	2.8	+1.3	
5.5-6.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.1	1.0	1.4	1.3	1.0	2.2	2.5	1.4	1.9	2.1	1.3	2.0	2.8	+0.8	
(High)																														
Race (2-year average): <sup>b</sup>																														
White	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.3	1.3	1.5	1.7	2.0	2.5	2.6	2.9	2.8	2.3	2.4	2.6	+0.2	
Black	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.8	1.0	0.8	0.5	0.5	0.3	0.5	1.0	0.7	0.7	1.1	1.6	+0.5	
Hispanic	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.3	1.8	2.3	2.1	2.7	4.0	2.8	1.7	1.7	2.4	3.4	3.6	+0.2	

NOTES: Level of significance of difference between the two most recent classes:  $s = .05$ ,  $ss = .01$ ,  $sss = .001$ . '—' indicates data not available.  
 Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.  
 See Table D-65 for the number of subgroup cases. See Appendix B for definition of variables in table.  
 Data based on two of six forms; N is two-sixths of N indicated in Table D-65.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

<sup>b</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.



Sedatives (Barbiturates): Annual prevalence of use by subgroups is not reported for 8th and 10th graders.

**TABLE D-41**  
**Sedatives (Barbiturates): Trends in Annual Prevalence of Use by Subgroups for Twelfth Graders**

	Percentage who used in last twelve months <sup>a</sup>																										'01-'02 change			
	Class of:																													
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000		2001	2002	
	<i>Approx. N = 9400 15400 17100 17800 15500 15900 17500 17700 16300 15900 16000 15200 16300 16300 16700 15200 15000 15800 16300 15400 15400 14300 15400 15200 13600 12800 12800 12900</i>																													
Total	10.7	9.6	9.3	8.1	7.5	6.8	6.6	5.5	5.2	4.9	4.6	4.2	3.6	3.2	3.3	3.4	3.4	2.8	3.4	4.1	4.7	4.9	5.1	5.5	5.8	6.2	5.7	6.7	+1.0s	
Gender:																														
Male	12.3	9.9	10.2	8.4	7.6	7.3	7.2	5.9	5.9	5.5	5.2	4.7	4.0	3.4	3.5	3.8	3.4	2.9	3.4	4.3	5.1	5.2	5.3	6.3	6.3	6.9	6.3	7.4	+1.1	
Female	9.9	9.2	8.4	7.7	7.0	6.0	5.8	5.0	4.2	4.0	3.9	3.8	3.2	3.0	3.0	3.0	3.2	2.6	3.3	3.8	4.2	4.4	4.8	4.8	5.3	5.4	5.1	5.9	+0.8	
College Plans:																														
None or under 4 years	—	11.6	11.4	9.1	9.3	9.0	8.1	7.4	6.7	6.2	6.2	6.1	4.7	4.1	4.8	4.7	4.3	3.9	3.8	5.4	5.9	6.7	6.6	6.9	7.0	7.0	7.1	9.8	+2.7ss	
Complete 4 years	—	7.3	6.8	6.8	5.2	4.8	5.1	3.8	3.8	3.7	3.6	3.0	3.0	2.7	2.5	2.8	2.9	2.3	3.2	3.7	4.4	4.3	4.6	5.1	5.5	6.0	5.4	6.0	+0.6	
Region:																														
Northeast	11.5	10.4	9.2	9.6	9.6	6.9	6.8	5.6	4.7	5.1	5.3	5.2	4.2	2.5	3.2	2.9	2.8	2.7	3.5	4.0	4.1	5.6	5.7	5.5	4.7	5.6	5.3	5.9	+0.6	
North Central	12.8	10.4	10.7	7.9	6.9	7.3	7.5	5.4	6.1	4.9	4.9	4.2	3.3	2.5	3.2	3.5	3.5	2.7	3.5	4.1	4.5	4.9	4.4	4.8	6.0	5.2	5.6	6.4	+0.8	
South	9.9	9.7	9.3	7.8	7.3	7.0	5.5	6.3	5.2	5.2	4.2	4.1	3.7	4.1	3.7	4.0	3.6	3.0	3.6	4.8	5.3	5.4	5.8	6.8	6.8	7.5	6.1	8.4	+2.3ss	
West	10.0	6.7	6.6	6.6	5.7	5.2	6.5	3.9	4.0	4.2	4.1	3.3	3.2	3.2	2.7	2.9	3.3	2.5	2.7	2.8	4.3	3.3	4.2	4.2	4.9	5.7	5.6	5.1	-0.5	
Population Density:																														
Large MSA	11.1	10.2	8.1	8.1	8.3	6.6	6.9	5.3	5.2	4.4	4.4	3.7	3.3	2.8	2.6	2.6	2.4	2.4	2.6	3.6	4.1	3.6	4.2	4.6	3.7	5.1	5.9	6.5	+0.6	
Other MSA	11.3	9.8	9.9	8.2	7.3	6.5	6.4	5.7	5.3	4.9	4.2	4.4	3.6	3.4	3.1	3.6	3.9	2.6	3.1	4.3	4.9	5.4	5.0	5.6	6.2	6.6	6.1	6.7	+0.6	
Non-MSA	9.8	9.0	9.5	8.1	7.0	7.2	6.6	5.5	5.0	5.5	5.4	4.5	3.9	3.2	4.4	3.9	3.3	3.4	4.3	4.1	5.0	5.4	6.4	6.8	7.4	6.8	4.9	7.0	+2.1s	
Parental Education: <sup>b</sup>																														
(Low)																														
1.0-2.0	10.3	9.1	8.0	7.5	7.8	8.0	6.5	5.8	6.1	4.7	5.0	4.8	3.8	4.3	4.1	3.1	3.6	3.9	3.8	4.5	4.9	4.8	4.3	6.4	7.5	5.2	6.3	5.1	-1.2	
2.5-3.0	10.3	10.2	10.3	8.2	7.3	7.2	6.5	5.7	5.7	5.2	5.3	4.6	3.6	3.1	3.4	3.7	3.7	2.4	3.6	4.5	5.2	4.9	4.9	6.3	6.2	7.1	5.3	7.1	+1.8s	
3.5-4.0	9.5	9.6	9.0	8.3	7.4	6.3	6.5	5.1	4.6	5.0	4.4	4.4	3.2	2.9	3.2	3.9	3.0	2.8	2.8	4.0	4.6	4.9	6.0	5.6	6.4	5.8	6.1	7.7	+1.6s	
4.5-5.0	10.7	10.1	9.1	7.8	6.6	5.9	6.4	5.0	4.4	4.3	4.1	3.3	3.9	3.3	2.8	3.1	3.3	2.9	3.4	4.0	4.4	5.0	5.1	5.0	5.0	6.7	5.9	6.3	+0.4	
5.5-6.0	9.0	10.3	8.3	8.0	7.2	5.4	6.8	5.8	3.7	4.0	3.1	3.4	3.6	3.1	3.4	2.9	3.6	2.4	3.8	3.6	4.1	4.6	4.6	5.0	5.1	5.5	5.8	6.6	+0.9	
(High)																														
Race (2-year average): <sup>c</sup>																														
White	—	—	10.2	9.3	8.2	7.5	7.2	6.5	5.8	5.5	5.1	4.7	4.2	3.7	3.5	3.7	3.8	3.5	3.6	4.3	4.9	5.4	5.9	6.5	6.7	6.9	7.0	7.5	+0.4	
Black	—	—	3.3	3.2	2.6	2.5	2.4	2.0	1.7	1.6	1.6	1.6	1.7	1.5	1.1	1.1	1.2	1.1	1.0	1.5	1.6	1.1	1.0	1.4	1.4	1.3	1.5	1.4	-0.1	
Hispanic	—	—	7.4	5.8	5.8	5.8	5.7	5.1	4.1	4.4	4.6	3.6	2.8	2.8	3.2	2.8	2.4	2.2	1.9	2.6	3.5	4.0	3.7	3.3	4.0	5.1	4.7	4.5	-0.2	

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available.  
 Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.  
 See Table D-65 for the number of subgroup cases. See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Only drug use not under a doctor's orders is included here.

<sup>b</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

<sup>c</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**TABLE D-42**  
**Tranquilizers: Trends in Annual Prevalence of Use by Subgroups for Eighth and Tenth Graders**

	Percentage who used in last twelve months <sup>a</sup>																									
	8th Grade												10th Grade													
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001 <sup>b</sup>	2002 <sup>b</sup>	'01-'02 change	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001 <sup>b</sup>	2002 <sup>b</sup>	'01-'02 change
	Approx. N = 17500 18600 18300 17300 17500 17800 18600 18100 16700 16700 16200 15100												14800 14800 15300 15800 17000 15600 15500 15000 13600 14300 14000 14300													
Total	1.8	2.0	2.1	2.4	2.7	3.3	2.9	2.6	2.5	2.6	‡ 2.8	2.6	-0.3	3.2	3.5	3.3	3.3	4.0	4.6	4.9	5.1	5.4	5.6	‡ 7.3	6.3	-1.0
Gender:																										
Male	1.5	1.6	1.8	1.9	2.0	2.3	2.6	2.3	2.1	2.1	‡ 2.5	2.2	-0.3	2.5	2.7	3.2	3.0	4.0	4.3	4.7	4.7	5.2	5.8	‡ 7.9	5.7	-2.2 <sup>ss</sup>
Female	2.1	2.3	2.4	2.8	3.3	4.0	3.2	3.0	2.9	3.1	‡ 2.9	2.8	-0.1	3.8	4.3	3.2	3.6	4.0	4.9	5.2	5.4	5.4	5.5	‡ 6.8	6.9	+0.2
College Plans:																										
None or under 4 yrs.	3.9	4.9	3.6	5.1	5.9	6.4	5.8	6.4	5.8	6.8	‡ 5.8	6.5	+0.7	5.0	6.0	5.8	6.0	7.4	9.4	8.6	8.3	8.6	10.0	‡ 13.5	11.6	-2.0
Complete 4 yrs.	1.5	1.5	1.9	2.0	2.3	2.8	2.6	2.2	2.0	2.2	‡ 2.5	2.1	-0.4	2.8	3.1	2.7	2.8	3.4	3.8	4.3	4.5	4.8	4.9	‡ 6.4	5.5	-0.9
Region:																										
Northeast	1.0	1.6	1.7	2.5	2.3	2.7	2.5	2.0	2.3	2.2	‡ 2.0	1.8	-0.2	2.7	2.8	3.4	2.8	2.6	3.9	3.6	5.7	5.5	3.9	‡ 6.2	4.6	-1.6
North Central	1.4	1.9	1.3	1.7	2.6	3.5	2.4	2.6	2.6	2.2	‡ 2.2	2.4	+0.1	2.4	3.0	2.5	2.6	3.2	4.4	3.7	3.4	4.6	5.4	‡ 5.6	5.5	-0.1
South	2.6	2.5	2.4	2.6	3.0	3.7	3.3	3.2	2.8	3.2	‡ 3.4	3.4	0.0	4.2	4.5	3.9	4.2	5.1	5.7	7.3	6.6	6.0	6.9	‡ 9.6	8.1	-1.5
West	1.8	1.6	3.0	2.7	2.4	2.9	3.0	2.3	1.9	2.5	‡ 3.2	1.9	-1.3	2.9	3.2	3.2	3.6	4.3	3.6	3.7	4.1	4.9	5.4	‡ 6.7	5.8	-1.0
Population																										
Density:																										
Large MSA	1.8	2.1	1.7	2.5	1.8	3.2	2.1	1.9	1.8	2.5	‡ 2.8	2.0	-0.8	3.2	3.3	2.7	2.6	3.2	4.2	3.9	4.1	5.0	5.5	‡ 5.8	5.1	-0.7
Other MSA	1.7	1.8	2.5	2.6	3.2	3.4	3.2	2.6	2.4	2.7	‡ 3.1	2.7	-0.4	3.0	3.8	3.3	3.9	4.1	4.6	4.4	5.2	5.5	5.4	‡ 7.0	6.8	-0.1
Non-MSA	2.2	2.2	1.6	1.9	2.6	3.1	3.2	3.6	3.4	2.7	‡ 2.3	2.9	+0.6	3.5	3.3	3.6	3.0	4.7	5.2	7.0	6.0	5.6	6.1	‡ 9.9	6.7	-3.1 <sup>ss</sup>
Parental Education: <sup>c</sup>																										
1.0-2.0 (Low)	3.6	3.8	2.5	3.2	3.9	4.9	4.3	5.5	5.0	5.6	‡ 3.7	5.0	+1.3	3.3	5.3	4.8	4.2	5.0	5.9	4.7	6.5	5.0	8.2	‡ 7.6	7.1	-0.6
2.5-3.0	1.6	2.1	2.5	2.6	2.7	3.5	3.1	2.8	3.3	3.6	‡ 3.7	3.6	0.0	3.6	3.5	3.1	3.3	4.5	5.2	5.3	6.3	5.9	6.2	‡ 7.9	7.5	-0.4
3.5-4.0	2.0	2.2	2.1	2.6	3.2	3.9	3.2	2.7	2.1	2.6	‡ 2.7	2.2	-0.5	3.2	3.4	3.5	3.4	4.3	5.0	5.5	4.9	5.2	5.6	‡ 8.1	6.7	-1.3
4.5-5.0	1.4	0.9	1.8	2.0	2.2	2.8	2.4	2.4	1.7	1.4	‡ 2.7	2.0	-0.6	2.5	3.9	2.9	2.9	3.5	4.1	4.2	4.5	5.7	5.2	‡ 6.7	5.8	-0.9
5.5-6.0 (High)	1.8	1.9	1.7	2.1	1.6	2.7	2.7	2.1	1.9	2.2	‡ 2.1	1.6	-0.5	3.5	2.3	3.1	3.4	3.2	3.6	4.4	4.0	5.3	4.7	‡ 6.9	4.6	-2.4 <sup>s</sup>
Race (2-year average): <sup>d</sup>																										
White	—	2.0	2.0	2.2	2.7	3.2	3.4	3.1	2.9	3.0	3.0	‡ 2.9 <sup>d</sup>	(+0.1) <sup>e</sup>	—	4.0	3.8	3.6	4.1	4.9	5.6	6.0	6.1	6.4	7.0	‡ 8.4 <sup>d</sup>	(-0.2) <sup>e</sup>
Black	—	0.9	1.1	1.2	1.2	1.3	1.2	0.9	0.7	0.5	0.5	‡ 0.7 <sup>d</sup>	(0.0) <sup>e</sup>	—	0.9	0.9	0.9	0.8	0.7	0.9	1.0	1.2	1.1	1.5	‡ 1.2 <sup>d</sup>	(+0.5) <sup>e</sup>
Hispanic	—	2.7	3.1	3.4	3.3	3.5	3.5	3.4	3.5	3.5	3.6	‡ 3.6 <sup>d</sup>	(+0.5) <sup>e</sup>	—	2.9	3.3	3.1	3.1	3.4	3.5	3.5	3.7	4.0	4.0	‡ 4.9 <sup>d</sup>	(0.0) <sup>e</sup>

NOTES: † indicates some change in the question. See relevant footnote. See relevant figure to assess the impact of the wording changes.  
 Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available.  
 Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.  
 See Table D-64 for the number of subgroup cases. See Appendix B for definition of variables in table.  
 SOURCE: The Monitoring the Future Study, the University of Michigan.  
<sup>a</sup>Only drug use not under a doctor's orders is included here.  
<sup>b</sup>In 2001, for the tranquilizer list of examples, Miltown was replaced with Xanax. The 2000 data presented here are based on all unchanged forms. The 2001 data are based on the changed forms only; N is one-half of N indicated. In 2002 the remaining forms were changed. The 2002 data are based on the new questions only. Data for "any illicit drugs other than marijuana" are also affected by this change.  
<sup>c</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.  
<sup>d</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates. The 2002 data comprise half of the 2001 sample data double-weighted and all of the 2002 sample data.  
<sup>e</sup>This value is our best estimate of the actual change. See the explanatory note on the last page of Appendix D for details.

**TABLE D-43**  
**Tranquilizers: Trends in Annual Prevalence of Use by Subgroups for Twelfth Graders**

	Percentage who used in last twelve months <sup>a</sup>																									'01-'02 change				
	Class of:																													
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999		2000	2001 <sup>b</sup>	2002 <sup>b</sup>	
	Approx. N = 9400 15400 17100 17800 15500 15900 17500 17700 16300 15900 16000 15200 16300 16300 16700 15200 15000 15800 16300 15400 15400 14300 15400 15200 13600 12800 12800 12900																													
Total	10.6	10.3	10.8	9.9	9.6	8.7	8.0	7.0	6.9	6.1	6.1	5.8	5.5	4.8	3.8	3.5	3.6	2.8	3.5	3.7	4.4	4.6	4.7	5.5	5.8	5.7	‡	6.9	7.7	+0.8
Gender:																														
Male	10.0	9.4	10.2	9.7	9.9	9.0	8.0	6.9	7.0	6.3	6.4	5.9	5.2	4.7	4.0	3.5	3.5	2.7	3.5	4.0	4.7	5.0	5.4	6.3	6.9	6.4	‡	7.9	8.4	+0.5
Female	11.1	11.0	11.4	10.1	9.3	8.5	7.7	7.1	6.7	5.8	5.7	5.8	5.8	4.8	3.5	3.5	3.6	3.0	3.3	3.5	4.1	4.0	3.9	4.7	4.8	4.9	‡	5.8	6.9	+1.1
College Plans:																														
None or under 4 years	—	11.5	12.3	11.1	11.0	10.7	9.4	8.0	8.0	7.4	6.8	7.2	6.7	5.1	4.8	4.3	4.2	3.9	3.9	4.5	5.6	5.6	6.2	6.8	6.4	6.7	‡	7.6	9.9	+2.3
Complete 4 years	—	8.9	9.0	8.6	8.1	7.2	6.9	6.3	5.8	5.2	5.5	5.1	4.9	4.6	3.3	3.2	3.4	2.5	3.3	3.5	4.1	4.2	4.0	5.1	5.6	5.2	‡	6.7	7.1	+0.4
Region:																														
Northeast	9.2	9.7	10.4	10.9	11.5	8.6	8.3	7.8	6.8	6.8	7.1	6.4	6.9	4.5	3.7	2.9	3.0	3.0	3.7	3.5	3.9	4.8	5.3	4.9	5.6	5.2	‡	5.7	6.8	+1.1
North Central	10.6	10.1	11.0	8.8	7.5	8.2	7.8	6.2	6.8	5.6	6.0	5.5	4.5	3.7	3.1	2.9	3.0	2.3	2.8	3.1	4.0	4.4	3.5	3.7	5.1	4.7	‡	8.1	6.5	-1.5
South	11.3	11.7	11.4	10.5	10.4	9.5	7.8	7.4	7.4	6.9	5.9	6.3	5.7	6.0	4.4	4.3	4.0	3.5	4.2	4.8	5.0	5.3	5.4	7.5	7.6	6.7	‡	7.4	10.4	+3.0ss
West	11.7	8.5	9.6	8.9	9.4	8.6	8.0	6.4	6.2	4.9	5.3	4.8	5.2	4.4	3.4	3.9	4.4	2.3	3.0	2.8	4.3	3.0	4.3	4.4	3.9	5.6	‡	5.5	5.8	+0.3
Population Density:																														
Large MSA	11.2	9.6	9.6	10.3	9.9	8.7	8.3	7.0	7.0	5.4	5.8	5.3	5.8	4.7	3.1	3.6	2.5	2.9	2.9	3.9	4.0	3.7	4.2	4.8	4.0	4.7	‡	7.9	7.8	-0.1
Other MSA	11.0	11.3	11.4	10.1	10.2	9.3	8.1	7.2	7.2	6.1	6.0	5.7	5.6	5.0	3.5	3.7	4.1	2.7	3.6	3.7	4.5	4.9	4.8	5.7	6.6	6.2	‡	6.4	8.2	+1.8s
Non-MSA	9.9	9.5	11.0	9.2	8.7	8.0	7.5	6.8	6.5	6.8	6.5	6.4	5.2	4.5	4.9	3.3	3.7	3.1	3.7	3.5	4.8	4.7	5.1	5.9	6.5	6.0	‡	6.7	6.8	+0.1
Parental Education: <sup>c</sup>																														
(Low)																														
1.0-2.0	11.2	10.1	9.4	9.4	9.1	7.8	7.1	6.1	6.0	6.5	5.3	6.7	5.7	3.9	3.6	3.4	4.0	3.9	3.3	4.2	3.9	4.2	3.9	6.4	5.2	6.4	‡	5.4	5.2	-0.2
2.5-3.0	9.8	10.3	11.5	10.1	8.8	9.1	8.0	7.3	7.2	6.5	6.2	5.8	5.4	4.6	3.9	3.2	3.6	2.8	3.3	3.5	4.7	4.0	4.3	5.2	6.2	5.3	‡	6.7	7.9	+1.2
3.5-4.0	9.8	11.2	11.1	9.5	10.4	8.9	8.3	6.7	6.9	5.8	6.4	6.5	5.3	4.5	3.4	4.4	3.1	2.7	3.5	3.6	4.3	4.7	4.6	6.0	6.4	5.6	‡	7.7	8.4	+0.7
4.5-5.0	11.3	11.7	11.4	10.5	10.0	8.1	7.4	7.6	6.6	5.8	6.3	4.7	5.9	5.5	3.8	3.1	3.9	3.0	3.4	3.7	4.5	4.6	5.4	4.9	5.4	5.9	‡	7.4	7.9	+0.5
5.5-6.0	9.3	12.0	10.1	11.0	11.4	10.3	9.1	7.6	7.1	6.3	5.5	5.4	5.4	5.6	4.9	4.0	4.0	2.2	4.2	4.2	4.1	5.3	5.1	5.5	5.6	5.8	‡	6.0	7.9	+1.9
(High)																														
Race (2-year average): <sup>d</sup>																														
White	—	—	11.4	11.1	10.5	9.9	9.1	8.3	7.8	7.3	6.8	6.6	6.3	5.9	5.0	4.2	4.1	3.7	3.7	4.2	4.6	5.1	5.5	6.2	6.8	6.9	‡	7.7	8.8 <sup>d</sup>	(+1.5) <sup>e</sup>
Black	—	—	4.3	4.2	3.6	3.1	3.0	2.5	2.3	2.1	1.7	1.7	2.0	2.0	1.2	0.7	0.9	1.3	1.0	1.1	1.2	0.9	0.8	1.0	1.0	0.7	‡	0.6	1.6 <sup>d</sup>	(-0.3) <sup>e</sup>
Hispanic	—	—	8.4	8.2	7.4	6.4	5.7	5.8	5.1	5.3	5.0	4.4	3.7	2.5	1.6	1.9	2.7	2.4	2.0	2.4	3.5	4.3	3.8	3.3	3.5	4.3	‡	3.9	5.1 <sup>d</sup>	(-1.2) <sup>e</sup>

NOTES: ‡ indicates some change in the question. See relevant footnote. See relevant figure to assess the impact of the wording changes.

Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available.

Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.

See Table D-65 for the number of subgroup cases. See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Only drug use not under a doctor's orders is included here.

<sup>b</sup>In 2001, for the tranquilizer list of examples, Miltown was replaced with Xanax. The 2000 data presented here are based on all unchanged forms. The 2001 data are based on the changed forms only; N is one-half of N indicated. In 2002 the remaining forms were changed. The 2002 data are based on the new questions only. Data for "any illicit drugs other than marijuana" are also affected by this change.

<sup>c</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

<sup>d</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates. The 2002 data comprise half of the 2001 sample data double-weighted and all of the 2002 sample data.

<sup>e</sup>This value is our best estimate of the actual change. See the explanatory note on the last page of Appendix D for details.

**TABLE D-44**  
**Rohypnol: Trends in Annual Prevalence of Use by Subgroups for Eighth and Tenth Graders**

	Percentage who used in last twelve months																									
	8th Grade													10th Grade												
	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	'01-'02 change	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	'01-'02 change
	<i>Approx. N = 17500 18600 18300 17300 17500 17800 18600 18100 16700 16700 16200 15100</i>													<i>14800 14800 15300 15800 17000 15600 15500 15000 13600 14300 14000 14300</i>												
Total	—	—	—	—	—	1.0	0.8	0.8	0.5	0.5	0.7	0.3	-0.4	—	—	—	—	—	1.1	1.3	1.2	1.0	0.8	1.0	0.7	-0.3
Gender:																										
Male	—	—	—	—	—	1.1	0.7	0.8	0.6	0.5	0.6	0.2	-0.4	—	—	—	—	—	1.1	1.4	1.4	1.2	1.0	1.1	0.4	-0.7
Female	—	—	—	—	—	1.0	0.9	0.9	0.2	0.6	0.7	0.2	-0.5	—	—	—	—	—	1.1	1.1	1.1	0.9	0.6	0.9	0.9	0.0
College Plans:																										
None or under 4 yrs.	—	—	—	—	—	2.5	1.5	3.0	0.9	2.2	2.0	1.0	-1.1	—	—	—	—	—	2.9	2.7	2.9	2.8	1.4	2.8	0.5	-2.3s
Complete 4 yrs.	—	—	—	—	—	0.8	0.7	0.6	0.4	0.4	0.5	0.2	-0.3	—	—	—	—	—	0.8	1.1	0.9	0.8	0.6	0.7	0.7	0.0
Region:																										
Northeast	—	—	—	—	—	0.9	0.3	0.9	0.3	0.6	0.9	0.2	-0.7	—	—	—	—	—	0.6	0.7	0.9	0.4	0.6	0.9	0.4	-0.5
North Central	—	—	—	—	—	0.9	0.8	0.8	0.3	0.4	1.0	0.4	-0.5	—	—	—	—	—	0.5	0.8	1.0	0.9	0.4	0.9	0.3	-0.6
South	—	—	—	—	—	1.3	1.1	0.9	0.7	0.9	0.6	0.4	-0.2	—	—	—	—	—	1.9	2.4	2.0	1.8	1.2	1.0	0.4	-0.5
West	—	—	—	—	—	1.0	0.7	0.8	0.5	*	0.4	0.1	-0.4	—	—	—	—	—	1.1	0.6	0.5	0.6	0.7	1.3	2.0	+0.7
Population																										
Density:																										
Large MSA	—	—	—	—	—	1.2	0.8	0.7	0.4	0.9	1.2	0.1	-1.1s	—	—	—	—	—	1.1	1.3	1.3	0.9	0.9	1.2	0.7	-0.5
Other MSA	—	—	—	—	—	1.1	0.9	1.0	0.6	0.5	0.5	0.3	-0.2	—	—	—	—	—	1.4	1.3	1.3	1.3	0.9	0.8	0.9	+0.1
Non-MSA	—	—	—	—	—	0.8	0.7	0.8	0.3	0.2	0.4	0.5	+0.1	—	—	—	—	—	0.6	1.3	1.0	0.7	0.5	1.2	0.3	-0.9
Parental																										
Education: <sup>a</sup>																										
1.0-2.0 (Low)	—	—	—	—	—	2.0	2.1	2.2	0.2	0.9	1.3	0.9	-0.4	—	—	—	—	—	1.7	1.3	1.7	1.2	1.3	2.3	0.4	-2.0
2.5-3.0	—	—	—	—	—	1.1	1.1	0.8	0.3	0.8	0.3	0.0	-0.3	—	—	—	—	—	1.0	1.1	1.6	1.6	0.5	1.1	0.9	-0.1
3.5-4.0	—	—	—	—	—	1.2	0.7	0.9	0.6	0.2	1.2	0.2	-1.0	—	—	—	—	—	1.5	1.6	1.0	0.8	0.8	0.7	1.0	+0.3
4.5-5.0	—	—	—	—	—	0.8	0.6	0.6	0.5	0.4	0.7	0.6	-0.1	—	—	—	—	—	0.7	1.5	0.9	0.6	0.7	1.1	0.7	-0.4
5.5-6.0 (High)	—	—	—	—	—	0.8	0.5	0.9	0.7	0.9	0.2	0.2	+0.1	—	—	—	—	—	1.1	0.8	1.3	1.1	0.8	0.3	0.2	-0.1
Race (2-year average): <sup>b</sup>																										
White	—	—	—	—	—	0.9	0.8	0.7	0.5	0.6	0.5	-0.1	—	—	—	—	—	1.4	1.5	1.5	1.0	1.0	1.0	1.0	0.0	
Black	—	—	—	—	—	0.4	0.4	0.4	0.3	0.4	0.4	0.0	—	—	—	—	—	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.0	
Hispanic	—	—	—	—	—	1.4	1.5	1.5	0.6	0.9	0.8	0.0	—	—	—	—	—	1.0	1.2	1.1	0.7	0.9	1.0	1.0	+0.1	

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available.

\*' indicates less than .05 percent but greater than 0 percent.

Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.

See Table D-64 for the number of subgroup cases. See Appendix B for definition of variables in table.

Data based on one of two forms in 1996; N is one-half of N indicated in Table D-64. Data based on three of four forms in 1997-98; N is two-thirds of N indicated in Table D-64.

Data based on two of four forms in 1999-2001; N is one-third of N indicated in Table D-64. Data based on one form in 2002; N is one-sixth of N indicated in Table D-64.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

<sup>b</sup>To derive percentages for each racial subgroup, data for the specified year *and* the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**TABLE D-45**  
**Rohypnol: Trends in Annual Prevalence of Use by Subgroups for Twelfth Graders**

	Percentage who used in last twelve months																						'01-'02 change <sup>a</sup>						
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996		1997	1998	1999	2000	2001	2002
	Class of:																												
	Approx. N = 9400 15400 17100 17800 15500 15900 17500 17700 16300 15900 16000 15200 16300 16300 16700 15200 15000 15800 16300 15400 15400 14300 15400 15200 13600 12800 12800 12900																												
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.1	1.2	1.4	1.0	0.8	0.9	1.6	—
Gender:																													
Male	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.8	1.2	1.7	1.0	0.8	1.1	2.3	—
Female	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.3	1.1	1.1	1.0	0.7	0.6	1.0	—
College Plans:																													
None or under 4 years	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.4	0.5	1.8	1.0	0.1	1.2	2.5	—
Complete 4 years	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.8	1.3	1.3	1.0	0.9	0.8	1.4	—
Region:																													
Northeast	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.9	0.6	1.2	0.8	0.3	1.7	1.2	—
North Central	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.0	0.5	1.0	0.8	0.9	0.5	1.8	—
South	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.8	2.2	2.6	1.6	1.3	1.0	1.5	—
West	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.1	0.8	0.0	0.2	0.1	0.8	2.0	—
Population																													
Density:																													
Large MSA	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.3	0.9	0.8	0.3	0.3	1.0	1.6	—
Other MSA	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.3	1.5	2.2	1.4	1.1	1.2	2.0	—
Non-MSA	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.7	0.7	0.6	0.9	0.7	0.3	1.1	—
Parental Education: <sup>b</sup>																													
(Low)																													
1.0-2.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.6	0.4	0.6	4.7	0.0	4.2	3.7	—
2.5-3.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.5	0.6	1.0	0.3	0.4	0.4	2.9	—
3.5-4.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.8	1.4	1.1	1.1	1.5	0.8	0.8	—
4.5-5.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.9	1.7	2.7	0.3	0.6	0.8	1.6	—
5.5-6.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.8	1.7	1.4	0.7	0.0	0.2	0.8	—
(High)																													
Race (2-year average): <sup>c</sup>																													
White	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.2	1.6	1.5	0.9	0.8	—	—
Black	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.1	0.0	0.2	0.4	0.2	—	—
Hispanic	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.0	1.3	1.0	0.6	1.3	—	—

NOTES: Level of significance of difference between the two most recent classes:  $s = .05$ ,  $ss = .01$ ,  $sss = .001$ . '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error. See Table D-65 for the number of subgroup cases. See Appendix B for definition of variables in table. Data based on one of six forms in 1996–2001; N is one-sixth of N indicated in Table D-65. Data based on two of six forms in 2002; N is two-sixths of N indicated in Table D-65.

SOURCE: The Monitoring the Future Study, the University of Michigan.  
**CAUTION: Limited sample sizes (see "Notes" above). Use caution in interpreting subgroup trends.**

<sup>a</sup>The 2001 and 2002 data are not comparable due to changes in the questionnaire forms.

<sup>b</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

<sup>c</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**TABLE D-46**  
**Alcohol: Trends in Thirty-Day Prevalence of Use by Subgroups for Eighth and Tenth Graders**

	Percentage who used in last thirty days																									
	8th Grade												10th Grade													
	1991	1992	1993 <sup>a</sup>	1994 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001	2002	'01-'02 change	1991	1992	1993 <sup>a</sup>	1994 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001	2002	'01-'02 change
	Approx. N = 17500 18600 18300 17300 17500 17800 18600 18100 16700 16700 16200 15100												14800 14800 15300 15800 17000 15600 15500 15000 13600 14300 14000 14300													
Total	25.1	26.1	‡24.3	25.5	24.6	26.2	24.5	23.0	24.0	22.4	21.5	19.6	-1.9s	42.8	39.9	‡38.2	39.2	38.8	40.4	40.1	38.8	40.0	41.0	39.0	35.4	-3.6ss
Gender:																										
Male	26.3	26.3	‡25.3	26.5	25.0	26.6	25.2	24.0	24.8	22.5	22.3	19.1	-3.3ss	45.5	41.6	‡40.6	43.5	39.7	42.6	42.5	40.0	42.3	43.3	41.1	35.3	-5.8sss
Female	23.8	25.9	‡23.7	24.7	24.0	25.8	23.9	21.9	23.3	22.0	20.6	20.0	-0.6	40.2	38.3	‡35.6	34.8	37.8	38.3	37.9	37.7	38.1	38.6	36.8	35.7	-1.1
College Plans:																										
None or under 4 yrs.	37.2	39.6	‡41.1	41.4	40.0	41.7	40.2	41.2	41.6	38.3	37.0	35.3	-1.8	53.6	49.5	‡48.6	52.0	52.2	53.3	51.6	52.4	53.7	53.9	52.2	47.1	-5.1s
Complete 4 yrs.	23.1	24.2	‡22.2	23.6	22.6	24.0	22.8	21.0	22.0	20.4	19.7	18.2	-1.6	40.6	37.9	‡36.1	36.4	36.4	38.3	38.1	36.5	37.9	39.1	36.8	33.5	-3.2ss
Region:																										
Northeast	24.3	23.8	‡21.0	25.4	24.1	26.9	24.8	21.2	25.7	25.6	23.3	19.3	-4.0	48.0	42.3	‡42.4	37.4	38.3	41.4	41.1	41.6	44.8	42.0	37.8	36.3	-1.5
North Central	26.6	28.3	‡24.7	24.2	24.7	26.9	22.8	23.9	25.7	24.1	21.2	19.1	-2.1	43.5	40.3	‡37.4	39.6	38.9	39.1	38.6	37.6	40.9	42.5	41.0	35.7	-5.3s
South	25.1	26.8	‡25.4	25.6	25.5	26.3	26.4	23.8	24.4	20.9	22.8	21.6	-1.2	41.7	38.2	‡38.0	40.5	39.4	41.7	40.8	39.9	38.8	39.1	38.3	33.7	-4.6s
West	23.1	23.5	‡25.6	27.2	23.1	24.8	22.7	22.2	19.8	20.2	18.1	17.0	-1.1	39.6	39.8	‡35.6	38.2	38.0	38.9	39.9	35.5	36.1	41.1	38.2	37.2	-1.0
Population																										
Density:																										
Large MSA	25.4	27.4	‡21.2	23.8	22.3	24.9	23.1	21.4	21.7	21.2	19.4	17.4	-1.9	43.6	40.4	‡39.0	36.3	34.6	37.9	37.8	34.2	39.7	42.4	37.6	32.0	-5.6ss
Other MSA	24.3	26.1	‡26.0	27.4	25.3	27.4	24.9	22.4	23.4	21.3	21.5	20.1	-1.4	41.4	38.6	‡36.2	40.1	39.9	41.0	40.2	39.0	39.7	39.3	38.3	35.2	-3.1
Non-MSA	26.2	24.2	‡24.9	23.8	26.0	25.7	25.4	26.0	28.1	26.1	24.1	21.4	-2.7	44.8	41.9	‡41.3	40.6	41.3	42.1	42.6	43.7	41.0	42.4	41.8	40.4	-1.4
Parental Education: <sup>b</sup>																										
1.0-2.0 (Low)	30.7	32.8	‡28.0	33.5	30.8	28.1	29.7	28.9	30.7	30.2	28.5	27.6	-0.9	42.1	40.4	‡37.5	38.6	43.5	43.2	39.2	39.9	40.6	41.1	38.6	38.2	-0.5
2.5-3.0	27.0	27.2	‡28.0	27.4	27.8	30.1	26.2	26.5	27.9	26.3	27.0	23.2	-3.8s	43.9	40.9	‡40.6	41.5	42.3	42.6	41.1	41.2	42.3	42.8	41.4	38.0	-3.5s
3.5-4.0	25.1	26.3	‡25.9	26.7	26.8	27.6	27.8	24.5	25.2	23.0	23.3	21.2	-2.1	44.2	40.0	‡38.0	40.6	38.8	42.2	41.6	40.1	40.2	42.8	41.0	36.4	-4.5ss
4.5-5.0	22.8	24.6	‡20.6	22.6	21.0	25.0	22.6	20.2	20.4	18.4	17.2	17.0	-0.2	40.7	39.4	‡36.2	37.7	37.9	37.8	39.3	36.9	38.7	40.2	37.0	33.7	-3.3s
5.5-6.0 (High)	24.0	25.2	‡22.3	23.6	20.5	21.5	20.5	21.3	22.1	19.0	16.4	15.1	-1.3	44.9	41.7	‡39.3	35.4	34.3	39.6	38.9	37.0	40.9	39.0	37.1	32.0	-5.0s
Race (2-year average): <sup>c</sup>																										
White	—	26.6	27.1	‡25.3	25.4	26.6	26.7	24.8	24.7	24.7	23.2	21.5	-1.7	—	44.1	43.1	‡40.4	41.0	42.2	43.0	42.7	43.0	43.9	42.7	40.0	-2.6
Black	—	18.6	19.7	‡19.4	18.7	18.1	17.9	16.1	16.1	16.0	15.0	14.8	-0.2	—	30.2	29.3	‡29.7	28.0	23.9	24.6	25.1	24.4	24.7	25.3	24.3	-1.0
Hispanic	—	31.0	32.3	‡33.5	32.4	29.7	29.8	29.5	29.0	26.7	25.7	26.5	+0.8	—	41.0	39.9	‡37.7	40.5	44.0	42.8	39.4	39.6	40.5	40.2	37.9	-2.3

NOTES: ‡ indicates some change in the question. See relevant footnote. See relevant figure to assess the impact of the wording changes.  
 Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available.  
 Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.  
 See Table D-64 for the number of subgroup cases. See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>In 1993, the question text was changed slightly in one form to indicate that a "drink" meant "more than a few sips." The 1993 data are based on the changed forms only; N is one-half of N indicated. In 1994 the question text was changed in the remaining form. Beginning in 1994, the data are based on all forms.

<sup>b</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

<sup>c</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**TABLE D-47**  
**Alcohol: Trends in Thirty-Day Prevalence of Use by Subgroups for Twelfth Graders**

	Percentage who used in last thirty days																							'01-'02 change						
	Class of:																													
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993 <sup>a</sup>	1994 <sup>a</sup>	1995	1996	1997	1998	1999	2000	2001	2002		
Approx. N =	9400	15400	17100	17800	15500	15900	17500	17700	16300	15900	16000	15200	16300	16300	16700	15200	15000	15800	16300	15400	15400	14300	15400	15200	13600	12800	12800	12900		
Total	68.2	68.3	71.2	72.1	71.8	72.0	70.7	69.7	69.4	67.2	65.9	65.3	66.4	63.9	60.0	57.1	54.0	51.3	‡48.6	50.1	51.3	50.8	52.7	52.0	51.0	50.0	49.8	48.6	-1.2	
Gender:																														
Male	75.0	74.5	77.8	77.5	76.7	77.4	75.7	74.1	74.4	71.4	69.8	69.0	69.9	68.0	65.1	61.3	58.4	55.8	‡54.2	55.5	55.7	54.8	56.2	57.3	55.3	54.0	54.7	52.3	-2.4	
Female	62.2	61.8	65.0	67.1	67.0	66.8	65.7	65.4	64.3	62.8	62.1	61.9	63.1	59.9	54.9	52.3	49.0	46.8	‡43.4	45.2	47.0	46.9	48.9	46.9	46.8	46.1	45.1	45.1	0.0	
College Plans:																														
None or under 4 years	—	69.9	72.8	72.7	72.2	73.5	72.1	71.6	70.5	69.0	67.9	66.6	68.6	65.0	61.6	58.7	57.1	54.9	‡52.4	53.6	55.9	54.8	56.1	56.0	55.2	54.3	55.5	53.0	-2.5	
Complete 4 years	—	66.5	69.4	71.6	71.4	70.8	70.0	68.6	68.1	65.7	64.6	64.8	65.7	63.6	59.1	56.4	52.7	50.0	‡47.4	48.9	49.6	49.3	51.4	50.9	49.8	48.3	47.9	47.4	-0.5	
Region:																														
Northeast	76.9	75.7	76.6	78.0	81.1	79.4	80.4	76.7	74.4	73.6	72.3	67.6	69.1	66.7	61.7	65.3	59.6	51.5	‡56.1	53.1	55.0	56.5	56.7	56.2	57.2	58.0	54.3	50.9	-3.3	
North	71.1	73.2	76.4	77.2	73.9	75.1	73.6	75.0	74.4	70.6	66.8	71.3	70.7	67.9	65.9	61.5	59.7	58.0	‡51.6	53.8	55.3	51.5	51.5	51.9	51.1	52.3	54.5	52.1	-2.4	
Central	62.8	60.2	64.7	67.0	65.7	65.5	62.9	61.3	64.3	62.1	60.0	58.2	60.7	58.6	55.1	51.0	49.1	48.1	‡47.7	49.2	50.6	51.1	51.1	51.4	49.5	44.9	45.9	46.8	+0.8	
South	60.0	62.2	64.4	63.1	65.5	67.6	65.3	63.8	62.9	63.6	66.2	64.5	66.7	65.0	59.3	51.6	49.7	46.7	‡39.8	44.2	43.2	42.1	52.7	49.2	47.8	48.3	44.9	45.0	+0.1	
West																														
Population Density:																														
Large MSA	75.3	72.6	74.0	75.5	77.3	78.0	75.5	72.9	69.2	66.6	67.4	66.2	66.3	63.8	56.9	59.2	52.9	49.0	‡50.6	49.5	50.6	51.6	51.1	49.1	48.9	51.2	49.7	50.3	+0.6	
Other MSA	68.5	67.0	72.0	72.7	72.0	70.8	69.1	69.3	69.8	66.2	65.1	64.8	66.9	64.1	60.7	57.4	55.7	50.8	‡47.1	49.2	50.6	50.1	53.4	53.9	52.8	48.8	49.6	48.8	-0.9	
Non-MSA	63.2	66.5	67.8	68.4	67.3	69.0	68.9	67.6	69.0	69.0	65.9	65.2	65.5	63.8	61.7	54.4	52.0	54.1	‡49.8	52.5	53.4	51.4	52.9	51.6	50.1	50.8	50.0	45.9	-4.1	
Parental Education: <sup>b</sup>																														
(Low)																														
1.0-2.0	58.7	62.5	62.0	62.7	64.6	65.9	62.1	61.3	61.2	58.1	58.7	56.1	56.3	54.5	47.8	47.2	49.9	45.6	‡36.6	43.5	45.9	41.2	43.8	43.8	46.8	43.4	42.9	42.2	-0.7	
2.5-3.0	70.0	71.4	72.5	71.9	71.1	72.0	70.7	69.4	69.2	67.4	65.9	65.3	67.0	64.6	59.7	57.2	53.3	52.3	‡49.0	49.9	52.0	48.2	51.0	50.1	50.5	50.0	49.0	47.9	-1.1	
3.5-4.0	69.2	67.9	73.5	75.0	74.6	73.3	71.5	72.7	70.4	69.6	66.9	66.7	67.2	64.3	62.9	57.7	54.3	51.2	‡51.2	50.1	50.6	51.4	52.1	55.6	51.1	51.3	51.4	50.9	-0.5	
4.5-5.0	69.6	71.3	74.5	77.0	76.0	74.4	73.1	74.5	73.1	69.3	68.9	68.0	68.8	66.0	62.1	60.8	54.8	51.0	‡49.8	52.6	51.8	53.6	55.3	52.4	50.2	48.1	51.5	48.9	-2.6	
5.5-6.0	67.3	72.5	77.1	79.2	75.9	77.2	77.4	74.1	75.0	70.3	67.9	69.9	70.5	67.3	62.2	60.8	58.0	55.7	‡53.2	52.2	55.1	54.2	57.4	54.7	56.0	54.0	49.5	51.1	+1.6	
(High)																														
Race (2-year average): <sup>c</sup>																														
White	—	—	72.8	75.0	75.3	75.4	75.4	74.6	73.9	72.8	71.2	70.2	71.0	70.6	67.3	63.8	60.0	56.8	‡55.6	‡54.0	54.5	54.8	56.4	57.7	56.3	55.1	55.3	54.0	-1.3	
Black	—	—	49.5	48.7	47.2	47.6	46.7	46.0	47.7	45.5	42.8	42.1	39.4	39.8	39.5	35.8	33.7	31.7	‡32.4	‡33.8	35.2	36.5	34.3	33.3	32.2	30.0	29.4	30.1	+0.7	
Hispanic	—	—	63.0	64.5	63.8	63.6	62.0	60.3	59.1	59.7	58.1	56.3	57.2	57.8	52.9	49.1	51.5	53.8	‡50.5	‡45.9	48.7	47.5	48.2	49.8	50.2	51.2	48.9	47.5	-1.5	

NOTES: ‡ indicates some change in the question. See relevant footnote. See relevant figure to assess the impact of the wording changes.  
 Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available.  
 Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.  
 See Table D-65 for the number of subgroup cases. See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>In 1993, the question text was changed slightly in three of six forms to indicate that a "drink" meant "more than a few sips." The 1993 data are based on the changed forms only; N is one-half of N indicated. In 1994 the question text was changed in the remaining forms. Beginning in 1994, the data are based on all six forms.

<sup>b</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

<sup>c</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.



**TABLE D-48**  
**Been Drunk: Trends in Thirty-Day Prevalence by Subgroups for Eighth and Tenth Graders**

	Percentage who had been drunk in last thirty days																									
	8th Grade													10th Grade												
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	'01-'02 change	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	'01-'02 change
	<i>Approx. N = 17500 18600 18300 17300 17500 17800 18600 18100 16700 16700 16200 15100</i>													<i>14800 14800 15300 15800 17000 15600 15500 15000 13600 14300 14000 14300</i>												
Total	7.6	7.5	7.8	8.7	8.3	9.6	8.2	8.4	9.4	8.3	7.7	6.7	-1.0	20.5	18.1	19.8	20.3	20.8	21.3	22.4	21.1	22.5	23.5	21.9	18.3	-3.6sss
Gender:																										
Male	8.4	7.4	7.8	9.0	8.2	9.7	8.4	8.5	10.2	8.2	7.8	7.1	-0.7	22.3	18.6	21.4	23.2	21.9	23.0	24.6	22.3	25.4	26.2	24.2	19.3	-5.0sss
Female	7.0	7.6	7.8	8.3	8.2	9.5	7.9	8.2	8.6	8.1	7.4	6.3	-1.1	18.7	17.5	18.1	17.2	19.6	19.8	20.2	19.9	19.8	20.9	19.7	17.4	-2.3s
College Plans:																										
None or under 4 yrs.	15.8	17.2	18.4	20.0	17.2	19.3	18.7	21.4	22.4	18.9	18.9	15.5	-3.4	29.5	26.3	29.0	31.1	31.4	32.0	35.5	33.5	34.6	35.1	34.8	27.4	-7.3sss
Complete 4 yrs.	6.4	6.1	6.4	7.3	7.3	8.2	7.1	6.9	8.0	7.0	6.5	5.9	-0.6	18.6	16.4	17.9	18.0	19.0	19.7	20.3	19.1	20.7	21.8	19.8	16.8	-3.0sss
Region:																										
Northeast	5.7	6.4	6.2	8.2	8.2	9.7	7.9	6.9	9.4	8.3	8.0	5.3	-2.7s	23.9	18.8	20.0	19.0	19.5	22.4	21.9	23.1	25.8	22.8	19.9	18.1	-1.8
North Central	7.7	7.6	7.3	8.3	8.3	10.2	8.2	10.4	11.6	9.7	8.2	7.0	-1.2	21.8	18.9	20.1	21.0	22.6	22.0	23.3	21.8	26.0	27.6	24.0	18.7	-5.4ss
South	8.8	8.2	8.3	8.8	8.4	9.1	8.3	7.8	9.5	7.4	8.1	7.6	-0.5	19.2	16.8	19.8	20.9	20.9	21.4	22.0	21.9	20.3	21.4	21.5	17.5	-4.0ss
West	7.3	6.9	9.4	9.6	8.2	9.8	8.3	8.3	6.6	8.1	6.0	5.9	-0.1	18.2	18.3	19.0	19.5	19.5	19.3	22.6	17.0	19.0	22.4	21.2	19.5	-1.8
Population																										
Density:																										
Large MSA	7.4	7.0	6.0	7.6	7.2	8.9	6.7	6.9	7.8	7.1	6.3	5.2	-1.1	20.6	17.6	17.6	16.1	18.2	19.6	20.7	17.2	21.6	23.4	19.5	16.5	-3.0
Other MSA	7.3	7.4	8.4	9.7	8.9	9.9	8.6	7.5	8.4	7.2	7.9	7.3	-0.6	20.1	17.3	18.2	21.7	21.8	21.9	21.8	21.2	22.7	22.5	21.6	18.0	-3.5ss
Non-MSA	8.4	8.2	8.8	7.9	8.6	10.0	9.2	11.7	13.3	12.0	8.9	7.3	-1.5	21.1	19.9	24.7	21.8	21.8	22.4	25.5	25.4	23.4	25.4	25.3	21.4	-3.9
Parental																										
Education: <sup>a</sup>																										
1.0-2.0 (Low)	13.4	11.0	10.4	12.5	13.1	11.1	11.5	13.1	14.5	14.0	12.1	10.5	-1.5	20.9	18.2	22.2	20.0	23.4	22.1	19.7	20.1	21.8	21.3	22.0	17.3	-4.7s
2.5-3.0	9.2	8.8	9.2	9.3	9.6	11.9	9.3	9.5	11.7	10.5	9.7	8.5	-1.2	22.5	18.5	21.4	21.2	22.9	23.4	22.5	23.3	23.4	24.5	22.6	19.9	-2.8
3.5-4.0	6.9	7.6	8.5	9.3	9.4	10.4	10.2	9.1	9.9	8.0	8.7	6.7	-2.0s	20.4	19.4	19.4	22.1	21.4	22.1	24.1	21.3	23.3	24.5	22.8	19.5	-3.3ss
4.5-5.0	6.1	6.5	5.9	7.5	6.4	8.7	6.7	7.0	6.9	5.6	5.7	5.5	-0.2	19.7	17.1	18.2	18.7	19.7	19.5	22.3	20.2	21.7	24.1	21.4	17.4	-4.0ss
5.5-6.0 (High)	6.8	4.9	6.7	7.6	6.0	7.1	5.8	6.9	8.7	7.1	4.6	4.8	+0.2	20.6	18.5	18.6	17.9	17.9	22.3	22.4	20.4	24.0	23.1	21.5	16.8	-4.7s
Race (2-year average): <sup>b</sup>																										
White	—	7.7	7.8	8.4	8.9	9.7	9.7	9.1	9.8	10.0	9.0	8.0	-1.0	—	21.6	20.8	22.0	22.7	23.7	25.0	25.5	25.7	26.7	25.8	23.2	-2.6s
Black	—	5.4	5.1	5.6	5.6	5.5	4.6	3.9	4.9	4.7	4.0	4.0	0.0	—	9.4	10.3	10.1	9.8	8.5	8.6	8.8	7.6	8.6	9.5	8.6	-0.9
Hispanic	—	9.9	9.9	10.8	10.8	10.8	10.4	9.8	9.9	8.5	7.8	8.4	+0.6	—	16.2	15.9	17.0	18.6	20.1	19.5	18.0	17.8	18.0	18.7	17.4	-1.3

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available.  
 Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.  
 See Table D-64 for the number of subgroup cases. See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

<sup>b</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**TABLE D-49**  
**Been Drunk: Trends in Thirty-Day Prevalence by Subgroups for Twelfth Graders**

Percentage who had been drunk in last thirty days

	Class of:																						'01-'02 change						
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996		1997	1998	1999	2000	2001	2002
<i>Approx. N = 9400 15400 17100 17800 15500 15900 17500 17700 16300 15900 16000 15200 16300 16300 16700 15200 15000 15800 16300 15400 15400 14300 15400 15200 13600 12800 12800 12900</i>																													
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	31.6	29.9	28.9	30.8	33.2	31.3	34.2	32.9	32.9	32.3	32.7	30.3	-2.4
Gender:																													
Male	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	37.1	35.2	34.5	34.5	37.8	35.4	39.2	39.0	37.9	38.4	37.0	34.3	-2.7
Female	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	25.4	24.5	23.5	26.8	28.8	27.3	29.1	26.6	27.7	26.7	28.4	26.9	-1.5
College Plans:																													
None or under 4 years	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	32.2	31.4	32.6	32.2	37.6	31.4	38.1	33.7	36.1	35.0	36.3	31.7	-4.6
Complete 4 years	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	30.9	29.2	27.4	29.4	31.4	31.0	32.3	32.0	31.7	30.6	31.3	29.3	-2.1
Region:																													
Northeast	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	36.4	30.0	35.0	35.2	35.5	37.2	35.9	35.6	37.5	39.3	33.9	33.6	-0.4
North Central	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	37.2	38.2	32.5	34.1	38.2	31.5	33.7	34.8	33.4	34.8	39.2	35.0	-4.2
South	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	26.5	25.2	26.4	29.1	31.2	31.0	34.5	30.1	30.8	26.5	28.8	28.4	-0.3
West	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	28.5	26.6	23.2	25.4	27.1	24.7	32.7	33.5	32.2	32.8	28.8	25.0	-3.8
Population																													
Density:																													
Large MSA	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	30.4	26.1	29.4	28.7	32.0	31.5	31.5	32.2	29.2	30.5	30.6	32.9	+2.3
Other MSA	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	33.5	29.8	26.9	29.9	31.7	33.0	33.7	34.0	35.4	34.5	31.7	29.1	-2.6
Non-MSA	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	29.4	33.7	32.0	34.4	36.9	28.2	38.2	31.4	32.5	30.5	36.7	29.2	-7.6
Parental Education: <sup>a</sup>																													
(Low)																													
1.0-2.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	20.4	20.5	23.6	25.7	25.4	18.8	23.7	24.6	20.8	28.4	22.2	20.0	-2.1
2.5-3.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	30.2	30.0	26.4	30.3	30.0	27.4	31.5	28.0	30.5	33.1	32.2	27.0	-5.2
3.5-4.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	31.0	31.3	29.2	29.9	34.4	31.1	32.7	34.1	34.0	31.2	32.0	32.4	+0.4
4.5-5.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	34.4	29.4	32.8	33.5	36.5	35.8	37.7	36.0	32.8	31.9	36.1	31.0	-5.1
5.5-6.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	40.5	34.3	30.4	30.7	34.9	34.6	39.8	39.9	40.6	35.5	33.6	34.5	+1.0
(High)																													
Race (2-year average): <sup>b</sup>																													
White	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	34.7	33.6	34.0	36.4	36.6	37.7	39.3	37.8	37.0	37.7	36.6	-1.1
Black	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	11.0	12.5	14.1	13.2	13.0	13.8	13.8	14.9	14.9	12.0	12.1	+0.1
Hispanic	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	27.2	24.8	23.0	24.2	26.2	26.9	25.9	27.5	29.8	25.5	23.5	-2.0

NOTES: Level of significance of difference between the two most recent classes:  $s = .05$ ,  $ss = .01$ ,  $sss = .001$ . '—' indicates data not available.  
 Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.  
 See Table D-65 for the number of subgroup cases. See Appendix B for definition of variables in table.  
 Data based on two of six forms; N is two-sixths of N indicated in Table D-65.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

<sup>b</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**TABLE D-50**  
**Alcohol: Trends in Two-Week Prevalence of Five or More Drinks in a Row**  
**by Subgroups for Eighth and Tenth Graders**

Percentage reporting 5+ drinks in a row on one or more occasions

	8th Grade												'01-'02 change	10th Grade												'01-'02 change
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002		1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	
<i>Approx. N =</i>	17500	18600	18300	17300	17500	17800	18600	18100	16700	16700	16200	15100	14800	14800	15300	15800	17000	15600	15500	15000	13600	14300	14000	14300		
Total	12.9	13.4	13.5	14.5	14.5	15.6	14.5	13.7	15.2	14.1	13.2	12.4	-0.8	22.9	21.1	23.0	23.6	24.0	24.8	25.1	24.3	25.6	26.2	24.9	22.4	-2.4s
Gender:																										
Male	14.3	13.9	14.8	16.0	15.1	16.5	15.3	14.4	16.4	14.4	13.7	12.5	-1.2	26.4	23.7	26.5	28.5	26.3	27.2	28.6	26.7	29.7	29.8	28.6	23.8	-4.8sss
Female	11.4	12.8	12.3	13.0	13.9	14.5	13.5	12.7	13.9	13.6	12.4	12.1	-0.4	19.5	18.6	19.3	18.7	21.5	22.3	21.7	22.2	21.8	22.5	21.4	21.0	-0.4
College Plans:																										
None or under 4 yrs.	24.4	26.4	29.3	29.3	29.2	29.9	30.3	30.5	33.9	29.3	29.6	28.1	-1.5	33.0	31.8	35.1	36.4	37.5	38.2	39.4	38.2	39.3	39.3	40.2	34.3	-5.9sss
Complete 4 yrs.	11.1	11.5	11.3	12.5	12.7	13.3	12.5	11.6	13.0	12.3	11.2	10.9	-0.3	20.8	18.9	20.5	20.8	21.5	22.5	22.7	22.0	23.4	24.2	22.4	20.4	-2.0s
Region:																										
Northeast	10.3	10.7	10.0	12.6	12.6	15.1	13.0	11.3	14.5	13.8	12.6	10.0	-2.6	25.1	19.9	23.2	21.3	22.1	23.8	23.4	25.6	28.1	25.4	22.7	21.4	-1.3
North Central	13.4	14.2	12.8	13.7	14.2	16.0	14.2	14.4	17.4	15.6	12.5	12.1	-0.4	23.7	21.3	23.5	24.8	25.3	25.3	24.0	24.2	27.1	28.3	26.7	22.1	-4.5s
South	14.1	14.8	15.5	14.9	15.7	15.8	15.3	14.2	15.7	13.7	15.3	14.0	-1.3	22.7	21.5	22.6	24.6	24.5	25.6	25.6	25.2	24.2	24.9	24.2	21.8	-2.5
West	12.3	12.8	15.0	16.5	14.4	15.3	14.6	13.9	12.2	13.3	11.0	12.1	+1.1	20.7	21.7	22.5	22.5	23.1	23.6	27.9	21.8	23.8	26.5	25.7	24.9	-0.8
Population																										
Density:																										
Large MSA	12.4	12.5	10.6	12.3	12.3	14.5	13.7	12.2	13.1	12.8	11.1	10.8	-0.3	21.6	19.3	20.9	19.0	20.2	22.2	22.5	20.0	24.3	25.7	22.6	19.4	-3.3
Other MSA	12.4	14.0	14.5	15.7	14.2	15.7	14.0	13.0	14.2	12.8	13.2	12.6	-0.5	22.1	20.0	21.2	24.4	24.1	24.9	24.8	24.0	24.6	25.4	23.9	22.7	-1.2
Non-MSA	14.4	13.5	15.5	14.4	17.8	16.9	16.4	16.6	19.7	18.5	15.9	13.9	-1.9	25.5	25.2	28.1	26.8	28.1	27.6	28.9	30.1	29.3	28.2	29.5	26.2	-3.3
Parental																										
Education: <sup>a</sup>																										
1.0-2.0 (Low)	21.8	21.8	19.7	20.4	23.2	20.1	22.5	20.0	23.7	22.5	21.0	19.5	-1.5	25.7	25.6	26.8	25.5	30.5	27.2	25.5	26.5	28.4	27.5	26.3	26.7	+0.4
2.5-3.0	15.1	16.0	15.6	17.1	17.8	18.4	16.2	16.4	19.6	18.7	16.6	15.2	-1.4	26.0	22.4	25.7	25.7	26.7	27.8	26.1	27.9	28.7	29.4	27.4	25.1	-2.3
3.5-4.0	12.8	13.0	13.9	14.8	15.0	15.9	15.8	14.5	16.1	13.2	13.9	13.2	-0.6	21.7	21.3	22.8	24.7	24.6	25.4	26.5	24.8	25.6	26.1	25.6	22.7	-2.9s
4.5-5.0	10.2	10.3	10.3	11.8	11.0	13.1	11.7	10.9	11.0	10.0	9.8	9.8	0.0	20.8	19.7	19.9	21.7	21.6	22.0	23.1	21.5	23.3	25.0	23.4	19.1	-4.3sss
5.5-6.0 (High)	9.8	9.5	10.1	11.2	10.5	12.1	10.6	10.7	11.2	11.0	8.1	8.8	+0.7	22.4	19.5	20.4	19.3	19.0	24.0	24.0	21.5	24.9	24.6	23.1	20.6	-2.5
Race (2-year average): <sup>b</sup>																										
White	—	12.7	12.6	12.9	13.9	15.1	15.1	14.1	14.3	14.9	13.8	12.7	-1.1	—	23.2	23.0	24.5	25.4	26.2	26.9	27.0	27.2	28.1	27.4	25.5	-1.9
Black	—	9.6	10.7	11.8	10.8	10.4	9.8	9.0	9.9	10.0	9.0	9.4	+0.3	—	15.0	14.8	14.0	13.3	12.2	12.7	12.8	12.7	12.9	12.6	12.4	-0.2
Hispanic	—	20.4	21.4	22.3	22.0	21.0	20.7	20.4	20.9	19.1	17.6	17.8	+0.1	—	22.9	23.8	24.2	26.8	29.6	27.5	26.3	27.5	28.3	27.7	26.5	-1.2

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available.  
 Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.  
 See Table D-64 for the number of subgroup cases. See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

<sup>b</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**TABLE D-51**  
**Alcohol: Trends in Two-Week Prevalence of Five or More Drinks in a Row by Subgroups for Twelfth Graders**

Percentage reporting 5+ drinks in a row on one or more occasions																													
Class of:																													
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	'01-'02 change
<i>Approx. N = 9400 15400 17100 17800 15500 15900 17500 17700 16300 15900 16000 15200 16300 16300 16700 15200 15000 15800 16300 15400 15400 14300 15400 15200 13600 12800 12800 12900</i>																													
Total	36.8	37.1	39.4	40.3	41.2	41.2	41.4	40.5	40.8	38.7	36.7	36.8	37.5	34.7	33.0	32.2	29.8	27.9	27.5	28.2	29.8	30.2	31.3	31.5	30.8	30.0	29.7	28.6	-1.1
Gender:																													
Male	49.0	47.9	50.0	51.4	51.9	52.1	51.6	49.8	50.4	47.5	45.3	46.1	46.1	43.0	41.2	39.1	37.8	35.6	34.6	37.0	36.9	37.0	37.9	39.2	38.1	36.7	36.0	34.2	-1.8
Female	26.4	25.9	29.3	29.6	30.9	30.5	30.8	31.1	31.0	29.6	28.2	28.1	29.2	26.5	24.9	24.4	21.2	20.3	20.7	20.2	23.0	23.5	24.4	24.0	23.6	23.5	23.7	23.0	-0.7
College Plans:																													
None or under 4 years	—	41.8	44.7	44.3	44.5	46.3	46.7	45.7	44.9	43.5	41.6	41.3	42.7	38.5	38.2	35.8	34.4	32.8	32.7	34.0	35.2	33.9	36.2	36.3	35.4	35.7	35.9	34.0	-1.9
Complete 4 years	—	31.5	33.9	35.9	37.7	36.9	37.4	36.5	37.2	34.6	33.0	34.1	35.0	32.8	30.5	30.3	27.9	26.0	25.8	26.3	27.8	28.8	29.5	30.0	29.5	27.6	27.8	27.2	-0.5
Region:																													
Northeast	43.0	40.8	40.0	43.5	47.4	48.0	49.3	43.3	42.2	42.9	42.4	37.1	37.2	34.3	33.3	37.2	33.4	25.8	30.3	29.2	31.2	33.7	33.5	33.5	33.7	35.1	31.8	30.7	-1.1
North Central	40.6	42.8	44.5	45.3	44.8	45.4	44.9	47.9	47.2	44.3	39.7	42.6	43.5	39.9	40.4	37.9	34.6	34.6	30.1	31.9	34.3	31.5	31.6	32.6	31.6	33.9	34.5	33.4	-1.2
South	32.1	30.8	36.3	36.4	36.7	34.4	34.7	34.6	37.6	33.5	29.7	31.7	33.4	30.4	28.5	27.2	26.3	24.7	27.1	26.9	28.6	30.2	30.6	30.7	30.0	24.9	26.6	26.8	+0.2
West	29.0	32.8	34.2	33.3	34.0	36.0	35.6	32.5	33.3	34.5	36.1	35.9	36.6	35.4	30.8	26.3	26.3	26.0	22.0	24.5	24.2	24.0	29.6	29.5	28.6	29.3	26.0	23.9	-2.1
Population Density:																													
Large MSA	37.9	37.0	38.1	39.5	42.2	44.8	43.4	40.9	38.8	37.9	37.6	36.4	34.8	32.5	28.8	34.5	28.6	25.5	27.6	26.8	28.3	29.8	29.9	27.9	27.1	29.7	29.0	29.9	+0.9
Other MSA	36.1	36.8	39.5	40.1	40.8	38.9	39.5	39.7	41.0	37.3	35.4	35.5	38.6	35.3	33.7	31.8	30.1	27.0	26.5	27.1	28.4	30.3	31.1	33.1	32.2	29.3	29.0	28.0	-1.0
Non-MSA	36.9	38.0	40.5	41.3	40.9	41.4	42.2	41.3	42.0	41.2	37.6	39.1	38.3	35.9	35.8	30.6	30.4	31.9	29.2	31.5	34.0	30.5	33.2	32.4	32.4	31.7	31.9	28.2	-3.8
Parental Education: <sup>a</sup>																													
(Low)																													
1.0-2.0	31.6	34.1	35.6	36.3	36.0	37.0	37.0	35.3	37.2	34.8	31.8	31.7	33.9	30.7	25.4	25.3	26.8	23.4	21.9	24.0	26.6	24.8	22.6	26.3	27.4	25.1	24.8	22.2	-2.6
2.5-3.0	37.5	41.1	41.8	40.9	42.3	43.3	43.2	41.4	41.2	39.8	38.2	37.9	38.9	35.7	34.0	32.7	29.9	28.1	27.6	28.5	31.2	28.6	30.4	30.3	30.8	29.2	30.2	28.5	-1.7
3.5-4.0	35.1	36.4	39.5	41.3	41.4	42.1	42.4	42.4	40.9	39.3	36.9	37.9	38.3	34.7	34.3	32.0	30.4	27.9	28.4	28.4	29.5	29.8	31.0	33.2	30.5	30.5	30.3	28.6	-1.7
4.5-5.0	34.4	36.9	37.2	42.4	43.8	40.8	40.8	41.9	41.9	38.6	37.1	37.1	37.2	35.1	34.2	34.5	29.9	28.1	28.4	29.3	29.9	32.4	32.4	32.3	30.6	29.9	30.9	30.9	0.0
5.5-6.0 (High)	29.9	34.5	41.1	37.2	41.9	38.5	39.3	40.9	42.1	38.2	34.9	36.7	37.2	34.7	31.8	34.1	30.6	30.4	29.0	29.0	30.7	33.1	34.9	32.4	34.2	32.7	28.6	30.6	+2.0
Race (2-year average): <sup>b</sup>																													
White	—	—	40.5	42.4	43.5	44.3	44.9	44.9	44.5	43.6	41.5	40.3	40.9	40.0	37.9	36.6	34.6	32.1	31.3	31.5	32.3	33.4	35.1	36.4	35.7	34.6	34.5	33.7	-0.7
Black	—	—	19.0	19.3	18.9	17.7	17.1	17.1	18.3	17.2	15.7	16.4	15.8	15.2	15.7	14.4	11.7	11.3	12.6	14.4	14.9	15.3	13.4	12.3	12.3	11.5	11.8	11.5	-0.2
Hispanic	—	—	36.4	37.2	33.6	33.1	34.8	32.9	32.5	33.0	31.7	30.8	33.0	33.7	28.8	25.6	27.9	31.1	27.2	24.3	26.6	27.1	27.6	28.1	29.3	31.0	28.4	26.4	-2.0

NOTES: Level of significance of difference between the two most recent classes:  $s = .05$ ,  $ss = .01$ ,  $sss = .001$ . '—' indicates data not available.  
 Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.  
 See Table D-65 for the number of subgroup cases. See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

<sup>b</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**TABLE D-52**  
**Cigarettes: Trends in Thirty-Day Prevalence of Use by Subgroups for Eighth and Tenth Graders**

	Percentage who used in last thirty days																									
	8th Grade													10th Grade												
	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	'01-'02 change	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	'01-'02 change
	<i>Approx. N = 17500 18600 18300 17300 17500 17800 18600 18100 16700 16700 16200 15100</i>													<i>14800 14800 15300 15800 17000 15600 15500 15000 13600 14300 14000 14300</i>												
Total	14.3	15.5	16.7	18.6	19.1	21.0	19.4	19.1	17.5	14.6	12.2	10.7	-1.5s	20.8	21.5	24.7	25.4	27.9	30.4	29.8	27.6	25.7	23.9	21.3	17.7	-3.6sss
Gender:																										
Male	15.5	14.9	17.2	19.3	18.8	20.6	19.1	18.0	16.7	14.3	12.2	11.0	-1.3	20.8	20.6	24.6	26.6	27.7	30.1	28.2	26.2	25.2	23.8	20.9	16.7	-4.2sss
Female	13.1	15.9	16.3	17.9	19.0	21.1	19.5	19.8	17.7	14.7	12.0	10.4	-1.6	20.7	22.2	24.5	23.9	27.9	30.8	31.1	29.1	25.8	23.6	21.5	18.6	-2.9s
College Plans:																										
None or under 4 yrs.	29.2	31.9	34.1	36.6	36.5	39.2	40.0	40.1	40.3	34.7	30.0	29.3	-0.7	36.5	35.0	41.9	42.2	46.3	46.2	47.2	45.2	44.0	38.6	38.1	33.3	-4.8s
Complete 4 yrs.	11.8	13.1	14.3	16.1	16.8	18.2	16.9	16.5	14.5	12.2	10.0	8.9	-1.2	17.3	18.6	21.0	21.7	24.7	27.8	26.8	24.5	22.7	21.5	18.5	15.1	-3.4sss
Region:																										
Northeast	13.7	14.4	15.0	17.8	18.6	22.1	18.0	15.6	15.7	13.7	11.4	9.1	-2.3	22.4	21.9	27.1	24.5	27.8	31.7	29.3	30.1	28.0	23.9	18.1	15.9	-2.2
North Central	15.5	16.5	16.3	18.5	20.9	23.2	20.0	22.3	21.3	17.1	12.0	11.0	-1.0	22.9	24.3	26.0	28.8	30.1	32.5	31.7	29.5	30.2	27.1	24.2	19.2	-5.0sss
South	15.7	17.0	18.2	19.5	19.4	21.1	21.0	21.1	18.7	14.7	14.3	13.0	-1.3	21.2	19.8	24.0	25.7	30.8	33.4	32.2	29.8	26.3	25.5	23.5	19.6	-3.9s
West	10.0	12.2	16.4	18.0	16.5	17.1	17.1	15.1	12.1	12.2	9.3	7.5	-1.9	16.7	20.2	21.2	20.1	19.6	20.8	23.2	19.6	17.5	16.8	15.0	14.1	-0.9
Population																										
Density:																										
Large MSA	12.8	15.0	14.1	15.5	16.5	19.4	15.8	16.4	12.7	12.1	9.3	7.5	-1.8	19.7	21.6	22.5	22.3	23.3	26.2	26.6	22.5	22.9	23.1	17.3	14.2	-3.2s
Other MSA	14.9	15.3	17.8	20.7	19.4	21.4	19.7	17.7	16.0	13.1	11.6	10.6	-1.0	20.3	20.3	23.8	26.3	28.9	31.1	28.9	26.6	25.0	21.3	20.5	17.6	-2.9s
Non-MSA	14.8	16.4	17.9	17.8	21.5	22.1	22.8	24.8	26.1	21.1	16.9	14.9	-2.0	22.7	23.7	28.2	26.7	31.3	33.9	34.9	35.7	30.4	29.4	27.6	22.6	-4.9s
Parental Education: <sup>a</sup>																										
1.0-2.0 (Low)	26.2	24.1	23.3	26.1	25.3	26.5	26.9	26.7	26.6	22.0	20.3	20.3	0.0	23.5	28.4	29.5	26.4	30.9	28.7	28.2	28.0	30.5	29.3	22.5	21.4	-1.1
2.5-3.0	16.4	16.9	19.8	20.6	22.7	24.4	22.4	23.9	23.5	19.6	16.4	14.5	-1.9	24.1	23.3	28.0	29.1	33.2	33.8	33.2	33.0	29.6	26.8	25.7	22.4	-3.3s
3.5-4.0	13.9	14.9	17.4	20.1	20.8	21.4	20.9	21.4	17.0	14.7	12.6	10.5	-2.1	20.4	20.6	24.8	26.0	27.8	31.6	30.9	27.3	26.0	25.3	21.1	17.4	-3.7ss
4.5-5.0	10.1	13.3	12.5	14.9	14.9	18.4	16.2	14.2	12.3	10.2	8.3	7.8	-0.5	18.5	19.5	20.1	22.6	25.9	28.7	28.5	25.7	22.4	21.2	18.9	15.1	-3.8ss
5.5-6.0 (High)	11.3	11.5	13.3	15.1	14.5	17.3	15.3	13.8	12.2	9.8	6.9	5.8	-1.1	18.5	18.9	21.4	20.7	21.8	27.8	24.6	22.5	21.4	19.1	17.1	12.7	-4.4s
Race (2-year average): <sup>b</sup>																										
White	—	16.2	17.8	18.9	20.7	22.7	22.8	21.5	20.1	17.7	14.7	12.0	-2.7ss	—	24.1	26.0	27.8	29.7	32.9	34.4	33.2	30.8	28.2	25.7	22.4	-3.3ss
Black	—	5.3	6.6	8.7	8.9	9.6	10.9	10.6	10.7	9.6	8.2	7.7	-0.5	—	6.6	7.5	9.8	11.5	12.2	12.8	13.7	12.5	11.1	11.1	9.8	-1.3
Hispanic	—	16.7	18.3	21.3	21.6	19.6	19.1	20.1	20.5	16.6	13.0	12.8	-0.2	—	18.3	20.5	19.4	21.4	23.7	23.0	21.3	21.1	19.6	16.8	14.3	-2.5

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available.

Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.

See Table D-64 for the number of subgroup cases. See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

<sup>b</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**TABLE D-53**  
**Cigarettes: Trends in Thirty-Day Prevalence of Use by Subgroups for Twelfth Graders**

	Percentage who used in last thirty days																								'01-'02 change				
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998		1999	2000	2001	2002
	Class of:																												
	Approx. N = 9400 15400 17100 17800 15500 15900 17500 17700 16300 15900 16000 15200 16300 16300 16700 15200 15000 15800 16300 15400 15400 14300 15400 15200 13600 12800 12800 12900																												
Total	36.7	38.8	38.4	36.7	34.4	30.5	29.4	30.0	30.3	29.3	30.1	29.6	29.4	28.7	28.6	29.4	28.3	27.8	29.9	31.2	33.5	34.0	36.5	35.1	34.6	31.4	29.5	26.7	-2.8s
Gender:																													
Male	37.2	37.7	36.6	34.5	31.2	26.8	26.5	26.8	28.0	25.9	28.2	27.9	27.0	28.0	27.7	29.1	29.0	29.2	30.7	32.9	34.5	34.9	37.3	36.3	35.4	32.8	29.7	27.4	-2.3
Female	35.9	39.1	39.6	38.1	37.1	33.4	31.6	32.6	31.6	31.9	31.4	30.6	31.4	28.9	29.0	29.2	27.5	26.1	28.7	29.2	32.0	32.4	35.2	33.3	33.5	29.7	28.7	25.5	-3.2s
College Plans:																													
None or under 4 years	—	46.3	46.2	44.6	43.0	39.6	38.1	38.7	38.0	37.9	40.5	38.5	39.7	37.5	38.0	37.5	38.1	38.6	37.3	40.9	43.5	45.0	45.7	46.7	44.9	43.6	40.8	37.5	-3.3
Complete 4 years	—	29.8	29.4	27.4	26.0	22.3	22.3	22.1	23.3	22.7	22.8	24.0	24.3	24.4	24.1	25.4	24.2	23.8	27.3	28.0	29.9	30.8	33.1	31.3	31.4	27.3	25.9	23.6	-2.3s
Region:																													
Northeast	40.1	41.8	43.0	40.6	37.0	34.1	31.5	32.1	34.6	33.5	34.2	35.2	34.1	31.2	29.4	31.9	30.5	29.6	34.2	33.2	34.4	38.5	40.6	35.9	34.2	33.1	30.3	27.3	-3.0
North Central	39.5	41.3	40.5	39.0	36.6	31.5	32.4	33.5	33.2	31.4	34.1	32.5	31.7	31.1	34.9	34.0	34.6	31.7	33.2	36.2	37.8	37.7	39.3	40.0	37.8	35.6	35.9	31.7	-4.2
South	36.2	39.1	37.6	35.7	35.4	31.8	28.9	29.4	28.7	28.6	25.6	26.1	26.0	28.0	26.4	26.1	25.4	26.4	29.0	30.7	33.5	33.2	35.0	34.3	36.2	29.6	25.9	27.2	+1.3
West	26.3	28.3	27.7	27.3	24.8	21.2	21.8	20.4	21.8	22.9	26.3	23.3	26.6	23.9	22.7	25.1	23.2	22.8	22.9	24.0	26.5	24.4	30.5	29.1	27.6	28.1	25.2	19.4	-5.8ss
Population																													
Density:																													
Large MSA	39.7	40.4	40.9	37.5	33.4	31.2	30.6	32.1	30.8	31.3	31.9	30.8	29.3	26.9	25.9	27.9	26.2	25.6	29.5	29.0	33.9	32.1	34.9	32.9	30.0	27.4	27.3	24.8	-2.5
Other MSA	35.1	35.9	36.1	34.3	33.5	29.7	27.4	27.8	29.1	28.2	28.5	28.0	28.2	28.3	28.2	29.6	29.3	26.9	29.8	31.1	31.7	32.6	35.7	34.2	35.0	31.5	28.2	26.2	-2.0
Non-MSA	36.7	40.9	39.2	39.4	36.4	30.9	30.9	31.2	31.5	29.3	30.8	31.0	31.8	31.4	32.2	30.4	28.6	31.5	30.3	33.8	36.2	38.2	40.0	39.7	38.7	36.3	34.3	30.1	-4.2
Parental Education: <sup>a</sup>																													
(Low)																													
1.0-2.0	37.2	43.2	39.6	38.1	38.1	32.7	32.5	32.6	32.7	33.6	32.3	28.6	28.8	28.1	25.4	26.3	31.3	27.1	26.5	26.2	31.2	31.5	31.2	32.3	33.0	31.3	24.8	20.9	-3.9
2.5-3.0	37.0	41.2	40.8	39.3	35.9	34.2	31.7	32.0	32.2	31.8	32.3	32.3	31.4	29.9	30.8	30.8	28.7	30.3	30.4	32.8	35.0	35.5	36.5	36.0	37.3	32.2	31.5	28.9	-2.6
3.5-4.0	31.9	35.3	37.3	34.0	33.3	28.0	28.2	29.0	28.0	28.1	29.7	29.7	28.8	27.8	29.4	29.3	28.4	27.8	29.9	31.4	33.2	33.2	35.6	36.7	35.0	32.8	30.3	28.6	-1.7
4.5-5.0	32.3	35.0	33.0	32.6	30.1	25.7	26.0	25.5	27.8	25.2	27.7	26.4	27.6	28.6	27.0	29.1	26.9	25.8	30.1	32.0	32.6	34.5	37.5	34.2	32.4	30.2	29.3	25.0	-4.3ss
5.5-6.0	26.8	30.8	32.8	31.9	29.6	24.0	22.5	25.1	25.5	23.7	22.6	26.7	29.3	27.8	26.3	28.6	27.1	25.5	30.5	30.4	34.0	32.9	38.5	33.1	34.4	27.4	25.0	25.3	+0.4
(High)																													
Race (2-year average): <sup>b</sup>																													
White	—	—	38.3	37.6	36.0	33.0	30.5	30.7	31.3	31.2	31.3	31.9	32.1	32.2	32.2	32.3	32.2	31.8	33.2	35.2	36.6	38.1	40.7	41.7	40.1	37.9	35.3	32.5	-2.9s
Black	—	—	36.7	32.7	30.2	26.8	23.7	21.8	21.2	19.3	18.1	16.9	14.2	13.3	12.6	12.2	10.6	8.7	9.5	10.9	12.9	14.2	14.3	14.9	14.9	14.3	13.3	12.1	-1.2
Hispanic	—	—	35.7	32.8	26.8	22.6	23.2	24.7	24.7	25.3	25.5	23.7	22.7	21.9	20.6	21.7	24.0	25.0	24.2	23.6	25.1	25.4	25.9	26.6	27.3	27.7	23.8	21.3	-2.6

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available.  
 Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.  
 See Table D-65 for the number of subgroup cases. See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

<sup>b</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**TABLE D-54**  
**Cigarettes: Trends in Thirty-Day Prevalence of Daily Use by Subgroups for Eighth and Tenth Graders**

	Percentage who used daily in last thirty days																									
	8th Grade													10th Grade												
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	'01-'02 change	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	'01-'02 change
	Approx. N = 17500 18600 18300 17300 17500 17800 18600 18100 16700 16700 16200 15100													14800 14800 15300 15800 17000 15600 15500 15000 13600 14300 14000 14300												
Total	7.2	7.0	8.3	8.8	9.3	10.4	9.0	8.8	8.1	7.4	5.5	5.1	-0.3	12.6	12.3	14.2	14.6	16.3	18.3	18.0	15.8	15.9	14.0	12.2	10.1	-2.1ss
Gender:																										
Male	8.1	6.9	8.8	9.5	9.2	10.5	9.0	8.1	7.4	7.0	5.9	5.4	-0.6	12.4	12.1	13.8	15.2	16.3	18.1	17.2	14.7	15.6	13.7	12.4	9.4	-3.1sss
Female	6.2	7.2	7.8	8.0	9.2	10.1	8.7	9.0	8.4	7.5	4.9	4.9	0.0	12.5	12.4	14.3	13.7	16.1	18.6	18.5	16.8	15.9	14.1	11.9	10.8	-1.1
College Plans:																										
None or under 4 yrs.	18.5	20.1	21.5	22.6	22.5	26.0	25.4	25.2	25.2	21.7	17.7	17.1	-0.6	25.7	25.5	28.9	28.9	32.7	34.3	35.4	31.7	32.1	28.8	27.3	22.9	-4.5s
Complete 4 yrs.	5.3	5.1	6.4	6.8	7.5	8.0	6.9	6.6	5.9	5.6	3.9	3.9	0.0	9.6	9.5	11.0	11.5	13.3	15.5	15.0	12.9	13.2	11.6	9.6	7.9	-1.7ss
Region:																										
Northeast	7.2	7.1	7.1	8.6	9.2	11.0	8.8	6.1	7.2	6.9	6.1	3.7	-2.4s	14.3	13.1	16.3	14.1	15.8	18.8	18.0	18.7	17.7	14.1	11.0	8.3	-2.6
North Central	7.8	7.6	8.5	9.4	11.0	12.4	10.3	11.2	11.5	9.0	6.4	5.7	-0.7	14.3	14.3	15.1	16.9	17.6	20.6	19.5	17.3	19.6	16.3	13.2	11.5	-1.7
South	7.9	7.8	9.3	9.4	9.4	10.4	9.5	10.2	8.5	7.8	6.1	6.6	+0.5	12.8	11.4	13.9	15.5	19.3	20.5	20.5	17.1	16.3	15.7	14.3	11.3	-3.0s
West	4.6	4.8	7.4	7.4	7.0	7.5	6.8	5.8	3.8	4.9	2.6	2.9	+0.3	9.1	10.7	10.9	9.7	9.4	10.7	11.1	8.8	9.1	7.8	7.0	7.8	+0.8
Population																										
Density:																										
Large MSA	6.3	6.3	5.7	6.6	7.6	9.5	7.0	6.7	5.4	5.6	4.1	3.2	-1.0	12.3	11.7	12.3	12.0	12.6	15.3	15.7	12.2	13.2	13.8	9.6	7.4	-2.2
Other MSA	7.7	7.2	9.1	9.5	9.3	10.2	8.7	7.9	7.4	6.3	5.4	5.1	-0.3	11.7	11.6	13.6	15.5	17.5	18.8	16.9	15.1	15.5	12.1	11.6	10.4	-1.2
Non-MSA	7.3	7.8	10.1	9.6	11.1	11.8	11.7	12.7	12.7	11.8	7.2	7.6	+0.4	14.3	14.5	16.9	15.5	18.4	20.8	22.5	21.1	19.7	17.5	16.3	13.1	-3.2
Parental Education: <sup>a</sup>																										
1.0-2.0 (Low)	15.9	11.9	12.7	13.0	15.8	13.6	14.3	13.0	14.7	13.1	11.1	10.6	-0.5	16.0	17.8	19.3	15.5	20.0	19.3	17.7	17.4	20.1	18.9	12.9	14.1	+1.2
2.5-3.0	8.6	8.4	9.7	11.3	11.3	14.0	11.7	12.0	11.4	11.3	7.5	7.1	-0.4	15.5	13.9	16.9	17.6	21.6	23.1	22.1	21.3	19.1	17.6	16.2	14.7	-1.5
3.5-4.0	6.5	6.9	8.5	8.9	9.4	10.1	9.2	9.7	8.1	6.7	5.1	5.4	+0.3	12.0	11.8	13.6	15.9	17.0	19.4	18.9	14.9	16.6	14.2	12.2	10.0	-2.2s
4.5-5.0	4.0	5.2	5.9	6.1	7.2	7.6	6.8	5.7	4.6	3.9	3.0	3.3	+0.3	10.6	10.5	10.7	11.5	12.6	14.8	15.6	12.9	13.0	11.5	9.7	6.8	-2.8ss
5.5-6.0 (High)	4.9	4.2	6.3	5.8	5.7	7.4	5.5	5.2	5.1	4.1	3.1	2.1	-1.0	9.6	9.0	10.5	9.6	10.3	13.6	12.0	11.1	11.2	9.8	8.3	6.4	-1.9
Race (2-year average): <sup>b</sup>																										
White	—	7.7	8.8	9.7	10.5	11.7	11.4	10.4	9.7	9.0	7.5	6.0	-1.4s	—	14.5	15.3	16.5	17.6	20.0	21.4	20.3	19.1	17.7	15.5	13.3	-2.2s
Black	—	1.4	1.8	2.6	2.8	3.2	3.7	3.8	3.8	3.2	2.8	2.8	0.0	—	2.8	3.1	3.8	4.7	5.1	5.6	5.8	5.3	5.2	5.2	5.0	-0.2
Hispanic	—	7.3	7.2	9.0	9.2	8.0	8.1	8.4	8.5	7.1	5.0	4.4	-0.7	—	8.4	8.9	8.1	9.9	11.6	10.8	9.4	9.1	8.8	7.4	6.4	-1.1

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available.

Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.

See Table D-64 for the number of subgroup cases. See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

<sup>b</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**TABLE D-55**  
**Cigarettes: Trends in Thirty-Day Prevalence of Daily Use by Subgroups for Twelfth Graders**

	Percentage who used daily in last thirty days																								'01-'02 change				
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998		1999	2000	2001	2002
	Class of:																												
	Approx. N = 9400 15400 17100 17800 15500 15900 17500 17700 16300 15900 16000 15200 16300 16300 16700 15200 15000 15800 16300 15400 15400 14300 15400 15200 13600 12800 12800 12900																												
Total	26.9	28.8	28.8	27.5	25.4	21.3	20.3	21.1	21.2	18.7	19.5	18.7	18.7	18.1	18.9	19.1	18.5	17.2	19.0	19.4	21.6	22.2	24.6	22.4	23.1	20.6	19.0	16.9	-2.1s
Gender:																													
Male	26.9	28.0	27.1	26.0	22.3	18.5	18.1	18.2	19.2	16.0	17.8	16.9	16.4	17.4	17.9	18.6	18.8	17.2	19.4	20.4	21.7	22.2	24.8	22.7	23.6	20.9	18.4	17.2	-1.2
Female	26.4	28.8	30.0	28.3	27.8	23.5	21.7	23.2	22.2	20.5	20.6	19.8	20.6	18.1	19.4	19.3	17.9	16.7	18.2	18.1	20.8	21.8	23.6	21.5	22.2	19.7	18.9	16.1	-2.8s
College Plans:																													
None or under 4 years	—	36.5	37.2	35.2	33.8	29.7	29.3	29.5	29.3	27.2	29.6	28.2	29.0	27.4	27.9	28.3	28.4	28.1	27.8	29.8	33.7	33.2	35.6	34.6	34.2	31.7	30.1	27.6	-2.5
Complete 4 years	—	19.8	19.3	18.3	17.0	13.8	12.9	13.2	13.8	11.9	12.4	12.8	13.3	13.4	14.6	14.7	14.1	12.9	15.9	15.7	17.4	18.9	20.6	18.4	19.5	16.6	15.5	13.8	-1.7
Region:																													
Northeast	31.4	32.3	33.8	32.5	28.6	24.1	23.3	23.4	26.1	23.6	24.9	24.9	24.8	21.4	21.3	22.8	20.9	19.4	23.5	21.3	22.5	27.0	29.4	23.4	23.2	22.8	21.9	18.4	-3.5
North Central	28.6	30.2	29.4	28.6	27.0	22.0	23.0	24.0	23.4	20.4	22.4	19.9	20.3	19.0	23.0	22.2	23.0	19.0	21.3	23.8	25.7	26.1	28.0	27.8	25.9	23.6	25.2	22.5	-2.7
South	26.2	29.1	28.7	26.4	25.8	22.6	19.1	20.2	19.4	17.7	16.0	15.8	15.7	17.7	17.1	16.5	16.4	16.7	18.5	19.3	21.7	20.5	22.6	21.8	24.2	19.4	15.5	16.6	+1.1
West	17.3	19.4	19.2	19.1	17.0	14.0	13.1	12.7	13.0	12.4	14.2	13.4	14.9	14.0	13.8	14.8	13.9	13.3	13.0	12.4	14.5	13.8	17.5	15.5	17.3	16.9	13.4	9.5	-3.9s
Population Density:																													
Large MSA	30.8	30.4	30.9	29.2	24.5	21.6	21.9	23.5	22.1	21.5	21.9	20.6	20.3	18.0	16.7	19.0	16.7	16.6	17.3	17.7	21.3	20.7	23.7	20.6	18.6	16.7	17.4	15.0	-2.4
Other MSA	25.6	27.1	27.2	25.7	25.0	21.3	19.0	19.3	20.2	17.4	17.7	17.0	17.6	17.7	19.0	19.0	19.0	15.9	19.7	19.2	19.9	21.9	23.9	21.2	22.8	21.1	17.5	16.7	-0.8
Non-MSA	25.8	29.5	29.1	28.7	26.5	21.2	20.7	21.3	21.7	18.2	19.9	19.8	19.3	18.8	20.9	19.5	19.0	20.3	19.2	21.6	24.8	24.1	26.8	27.2	28.5	24.5	23.9	19.8	-4.1s
Parental Education: <sup>a</sup>																													
(Low)																													
1.0-2.0	27.2	32.7	29.6	28.6	29.1	23.7	24.1	24.6	24.0	23.2	22.7	20.4	19.7	19.2	17.1	16.7	21.2	16.5	17.6	16.9	21.3	21.1	21.9	21.7	23.8	22.8	16.4	12.4	-4.0
2.5-3.0	27.2	31.3	31.5	30.3	26.5	24.7	22.5	23.1	23.2	21.5	21.8	21.4	21.1	19.6	21.5	21.0	19.8	20.4	20.2	22.4	24.6	24.4	26.0	24.7	26.9	22.9	21.9	19.8	-2.1
3.5-4.0	22.1	25.8	28.1	24.8	24.5	19.4	19.0	19.7	18.8	16.4	19.3	19.4	17.8	17.5	19.0	19.3	18.5	16.9	18.9	18.9	21.6	21.2	23.8	23.8	23.6	21.2	19.9	19.1	-0.8
4.5-5.0	22.9	24.5	23.7	23.2	21.2	16.6	16.1	16.8	17.5	14.1	16.0	13.9	16.5	16.5	17.2	18.3	16.2	15.0	18.9	18.7	19.7	22.4	24.9	20.6	20.6	18.6	17.9	14.1	-3.8ss
5.5-6.0	17.4	22.8	21.7	22.8	20.6	15.0	13.9	14.5	17.2	14.1	11.2	13.6	16.6	15.1	15.8	16.5	16.1	12.8	16.6	17.3	18.5	20.0	22.9	17.4	19.0	15.2	13.4	14.3	+0.8
(High)																													
Race (2-year average): <sup>b</sup>																													
White	—	—	28.9	28.3	26.9	23.9	21.4	21.6	22.1	21.0	20.4	20.6	20.5	20.6	21.1	21.8	21.5	20.5	21.4	22.9	23.9	25.4	27.8	28.3	26.9	25.7	23.8	21.8	-2.0
Black	—	—	24.9	22.7	20.9	17.4	14.6	13.1	12.5	10.7	9.9	9.4	7.9	7.3	6.4	5.8	5.1	4.2	4.1	4.9	6.1	7.0	7.2	7.4	7.7	8.0	7.5	6.4	-1.1
Hispanic	—	—	22.6	20.4	15.8	12.8	13.6	14.3	14.9	13.9	11.8	11.3	11.0	10.9	10.8	10.9	11.5	12.5	11.8	10.6	11.6	12.9	14.0	13.6	14.0	15.7	12.0	9.2	-2.9

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available.  
 Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.  
 See Table D-65 for the number of subgroup cases. See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

<sup>b</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.



**TABLE D-56**  
**Cigarettes: Trends in Thirty-Day Prevalence of Use of Half-pack a Day or More**  
**by Subgroups for Eighth and Tenth Graders**

	Percentage who used daily in last thirty days																									
	8th Grade												10th Grade													
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	'01-'02 change	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	'01-'02 change
	Approx. N = 17500 18600 18300 17300 17500 17800 18600 18100 16700 16700 16200 15100												14800 14800 15300 15800 17000 15600 15500 15000 13600 14300 14000 14300													
Total	3.1	2.9	3.5	3.6	3.4	4.3	3.5	3.6	3.3	2.8	2.3	2.1	-0.2	6.5	6.0	7.0	7.6	8.3	9.4	8.6	7.9	7.6	6.2	5.5	4.4	-1.2s
Gender:																										
Male	3.7	3.1	4.3	4.2	3.7	4.7	3.7	3.5	3.1	2.8	2.6	2.4	-0.2	6.9	6.5	7.8	8.2	8.7	9.9	8.9	8.1	7.8	6.7	6.0	4.1	-1.9sss
Female	2.4	2.7	2.7	2.9	3.2	3.7	3.1	3.3	3.3	2.6	2.0	1.9	-0.1	6.0	5.1	6.2	6.7	7.7	9.0	8.2	7.8	7.3	5.6	5.1	4.6	-0.5
College Plans:																										
None or under 4 yrs.	10.1	10.8	11.9	11.7	11.4	13.5	11.6	13.8	13.4	10.3	9.8	8.4	-1.4	15.9	15.3	18.5	18.5	20.9	22.4	22.0	20.6	18.9	16.0	16.0	11.5	-4.4ss
Complete 4 yrs.	1.9	1.7	2.2	2.4	2.3	2.8	2.4	2.2	2.0	1.8	1.4	1.5	+0.1	4.4	4.0	4.6	5.2	6.1	7.1	6.3	5.6	5.7	4.5	3.8	3.1	-0.7
Region:																										
Northeast	3.3	2.8	2.7	3.7	3.7	4.1	3.7	2.1	3.1	3.3	2.6	1.7	-0.8	7.8	5.9	8.5	7.8	7.7	9.1	8.8	10.0	9.1	6.0	5.0	3.7	-1.3
North Central	3.3	3.2	3.5	3.9	4.4	5.3	4.1	4.6	5.7	3.4	3.1	2.7	-0.4	7.1	7.3	7.7	8.3	9.5	10.9	9.3	9.1	9.9	8.1	6.0	4.8	-1.2
South	3.4	3.3	4.6	3.9	3.6	4.5	3.7	4.8	2.9	2.8	2.7	2.5	-0.2	7.2	5.5	7.1	8.7	10.3	11.0	10.2	8.9	7.8	7.1	6.5	5.5	-1.0
West	1.9	2.0	2.2	2.6	1.8	2.7	2.2	1.6	1.2	1.3	0.7	0.9	+0.2	4.0	5.0	4.3	4.2	3.4	5.0	4.4	3.0	3.0	2.2	3.3	2.5	-0.8
Population																										
Density:																										
Large MSA	2.4	2.3	2.1	3.0	2.5	3.7	2.7	2.3	1.8	2.1	1.5	1.3	-0.3	6.9	5.2	5.9	5.8	6.0	7.6	6.6	5.8	6.0	5.7	4.8	3.0	-1.8s
Other MSA	3.3	3.2	3.7	3.9	3.6	3.8	3.2	3.2	2.8	2.2	2.1	2.2	+0.1	5.8	5.8	6.7	8.5	9.2	9.5	8.0	7.7	7.6	5.6	5.0	4.7	-0.3
Non-MSA	3.4	3.3	5.0	3.7	4.3	5.8	4.8	5.6	5.9	4.6	3.9	3.1	-0.8	7.6	6.9	8.7	7.8	9.2	11.5	12.0	11.0	9.4	7.8	7.5	5.7	-1.8
Parental Education: <sup>a</sup>																										
1.0-2.0 (Low)	7.9	6.5	6.4	5.1	8.2	6.5	6.4	6.2	6.2	7.1	5.2	4.6	-0.6	9.9	10.7	10.8	8.1	12.0	12.1	10.8	9.0	11.3	10.7	7.6	7.4	-0.2
2.5-3.0	3.7	3.4	3.9	4.9	4.1	6.4	4.8	5.2	4.8	3.8	3.6	2.8	-0.8	8.9	6.9	8.5	10.1	12.2	13.1	11.4	11.6	10.4	8.5	8.3	7.0	-1.3
3.5-4.0	2.5	2.6	3.6	3.4	3.6	3.2	3.5	3.7	3.4	2.3	2.0	2.2	+0.1	5.8	5.4	7.3	8.0	8.6	10.2	8.8	7.4	7.4	5.9	5.3	4.0	-1.3
4.5-5.0	1.6	1.8	2.3	2.6	2.0	2.8	2.2	2.0	1.5	1.4	0.9	1.2	+0.3	4.7	4.7	4.3	5.4	5.0	6.2	6.5	5.9	5.5	4.3	3.9	2.4	-1.6sss
5.5-6.0 (High)	1.8	1.5	2.2	2.2	1.5	2.7	1.8	2.1	1.8	1.5	1.4	1.1	-0.2	4.5	3.7	3.9	4.0	4.0	5.7	4.8	5.4	4.5	3.6	2.6	2.0	-0.5
Race (2-year average): <sup>b</sup>																										
White	—	3.3	3.8	4.2	4.2	4.6	4.6	4.2	4.0	3.6	3.2	2.8	-0.4	—	7.4	7.7	8.6	9.3	10.5	11.0	10.4	9.9	8.5	7.1	6.2	-1.0
Black	—	0.4	0.7	1.0	0.9	1.3	1.4	1.2	1.3	1.0	1.1	1.1	0.0	—	0.8	0.6	1.2	1.8	1.6	1.7	1.8	1.5	1.9	1.7	1.2	-0.5
Hispanic	—	2.7	2.5	3.1	3.3	2.7	2.4	2.8	3.0	2.3	1.4	1.3	0.0	—	3.0	3.0	2.6	3.4	4.3	3.3	3.0	3.1	2.9	2.7	2.2	-0.4

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available.  
 Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.  
 See Table D-64 for the number of subgroup cases. See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

<sup>b</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**TABLE D-57**  
**Cigarettes: Trends in Thirty-Day Prevalence of Use of Half-pack a Day or More by Subgroups for Twelfth Graders**

	Percentage who used daily in last thirty days																								'01-'02 change				
	Class of:																												
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998		1999	2000	2001	2002
	<i>Approx. N = 9400 15400 17100 17800 15500 15900 17500 17700 16300 15900 16000 15200 16300 16300 16700 15200 15000 15800 16300 15400 15400 14300 15400 15200 13600 12800 12800 12900</i>																												
Total	17.9	19.2	19.4	18.8	16.5	14.3	13.5	14.2	13.8	12.3	12.5	11.4	11.4	10.6	11.2	11.3	10.7	10.0	10.9	11.2	12.4	13.0	14.3	12.6	13.2	11.3	10.3	9.1	-1.2
Gender:																													
Male	19.6	19.9	19.7	18.9	15.4	13.5	12.8	13.1	13.1	11.0	12.3	10.7	10.1	11.1	11.2	11.6	11.6	10.4	11.6	12.7	13.2	13.6	15.5	13.5	14.5	11.4	10.2	10.0	-0.2
Female	16.1	18.0	18.9	18.0	17.1	14.7	13.8	14.7	13.6	12.8	12.0	11.6	12.5	9.7	10.7	10.8	9.5	9.2	9.9	9.5	11.1	12.0	12.6	11.1	11.5	10.8	10.2	7.9	-2.3 <sup>sss</sup>
College Plans:																													
None or under 4 years	—	25.5	26.9	25.5	23.3	21.2	20.8	21.0	20.9	19.6	20.7	19.2	19.5	18.4	18.6	19.2	18.7	19.1	18.7	19.6	22.6	23.1	23.5	23.7	23.2	20.3	19.3	17.5	-1.8
Complete 4 years	—	11.9	11.2	11.1	9.8	8.2	7.5	7.8	7.6	6.5	6.5	6.4	7.2	6.8	7.5	7.5	7.1	6.5	8.1	8.2	8.9	10.0	11.0	8.9	10.1	8.1	7.6	6.7	-0.9
Region:																													
Northeast	22.0	22.5	24.2	23.6	19.8	17.0	16.6	15.6	16.6	17.4	17.0	15.6	16.5	13.1	13.6	13.8	12.9	11.1	14.7	12.2	13.4	17.0	19.4	13.6	13.4	13.6	12.3	10.9	-1.4
North Central	18.8	20.3	20.3	19.8	17.4	15.4	16.0	17.3	17.1	13.0	14.9	12.3	12.3	11.5	14.2	13.7	14.1	11.0	12.5	15.3	14.2	15.1	16.9	16.8	15.0	13.7	14.8	13.6	-1.2
South	16.8	19.0	18.5	17.0	16.1	14.5	12.0	13.3	12.4	11.3	9.7	10.0	9.4	10.1	9.7	9.4	8.9	10.2	10.4	10.8	12.6	12.0	12.3	11.8	13.9	10.6	7.6	8.6	+1.0
West	11.3	12.4	11.5	12.2	10.8	8.3	7.3	7.1	6.4	7.4	7.6	6.5	8.1	7.7	6.9	8.3	7.2	6.8	6.0	5.9	8.4	6.5	8.2	7.5	9.0	7.5	6.6	3.1	-3.5 <sup>sss</sup>
Population																													
Density:																													
Large MSA	21.7	20.1	20.4	19.7	16.2	14.8	15.4	15.9	14.1	14.8	14.4	12.2	13.1	10.8	10.1	11.2	10.2	9.9	9.1	10.2	12.3	11.6	12.8	11.0	9.6	8.2	9.4	7.6	-1.8
Other MSA	17.4	18.9	18.8	17.9	16.5	13.8	12.4	12.9	13.5	11.4	11.0	9.6	10.0	10.4	11.2	11.0	10.7	8.4	11.2	10.5	11.1	12.8	14.3	11.7	12.6	11.6	9.4	8.7	-0.6
Non-MSA	15.9	19.0	19.5	19.3	16.7	14.7	13.6	14.2	14.0	11.5	12.9	13.3	12.5	10.7	12.1	12.1	11.1	13.1	11.7	13.7	14.7	14.4	16.0	16.5	18.0	14.5	13.3	11.9	-1.4
Parental Education: <sup>a</sup>																													
(Low)																													
1.0-2.0	18.6	21.3	20.0	19.2	19.5	16.3	16.0	17.1	17.1	16.4	16.1	15.6	13.8	11.2	11.5	10.2	12.5	11.0	10.7	9.5	13.5	13.6	11.9	12.5	15.0	16.1	10.8	7.4	-3.4
2.5-3.0	17.7	21.4	22.2	21.0	17.6	16.8	15.6	15.9	15.2	14.8	14.2	13.3	13.9	12.4	13.5	13.4	12.4	12.7	12.5	13.7	15.1	14.8	16.4	14.9	16.6	13.8	12.5	12.0	-0.5
3.5-4.0	13.9	17.4	18.3	16.9	15.2	12.8	12.5	13.3	11.9	10.5	12.0	11.0	10.5	10.3	10.7	11.6	10.7	9.6	10.4	11.0	12.7	12.3	13.9	13.8	13.1	10.7	10.6	10.3	-0.2
4.5-5.0	15.9	15.9	14.8	15.4	12.6	10.3	10.1	10.1	10.5	8.0	9.5	6.8	8.9	8.6	9.2	10.2	7.9	8.1	10.0	10.4	9.8	12.6	14.5	10.3	10.7	9.3	9.2	6.8	-2.4 <sup>s</sup>
5.5-6.0 (High)	9.1	15.9	14.6	14.5	13.6	9.8	8.8	9.3	9.3	7.9	5.4	7.4	8.4	8.3	8.4	7.9	9.0	5.7	8.3	8.8	9.1	10.8	11.2	7.4	9.5	7.1	6.2	5.4	-0.7
Race (2-year average): <sup>b</sup>																													
White	—	—	20.3	20.2	18.6	16.4	15.0	15.1	15.2	14.2	13.6	13.1	12.9	12.9	12.9	13.3	13.1	12.3	12.8	13.7	14.2	15.2	16.9	16.9	15.9	15.1	13.6	12.4	-1.2
Black	—	—	10.7	9.7	9.1	7.1	5.8	5.4	4.9	4.1	3.9	3.6	2.9	2.3	1.9	1.8	1.8	1.8	1.5	1.7	2.2	2.5	2.8	2.5	2.4	2.6	2.4	2.1	-0.3
Hispanic	—	—	11.3	9.0	6.4	5.6	6.1	5.6	5.9	6.1	5.3	5.0	4.1	3.5	4.2	4.2	4.0	4.6	4.5	4.0	4.1	5.3	5.8	5.2	5.8	7.0	5.3	3.8	-1.5

NOTES: Level of significance of difference between the two most recent classes:  $s = .05$ ,  $ss = .01$ ,  $sss = .001$ . '—' indicates data not available.  
 Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.  
 See Table D-65 for the number of subgroup cases. See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

<sup>b</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**TABLE D-58**  
**Smokeless Tobacco: Trends in Thirty-Day Prevalence of Use by Subgroups for Eighth and Tenth Graders**

	Percentage who used in last thirty days																									
	8th Grade													10th Grade												
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	'01-'02 change	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	'01-'02 change
	<i>Approx. N = 17500 18600 18300 17300 17500 17800 18600 18100 16700 16700 16200 15100</i>													<i>14800 14800 15300 15800 17000 15600 15500 15000 13600 14300 14000 14300</i>												
Total	6.9	7.0	6.6	7.7	7.1	7.1	5.5	4.8	4.5	4.2	4.0	3.3	-0.8	10.0	9.6	10.4	10.5	9.7	8.6	8.9	7.5	6.5	6.1	6.9	6.1	-0.8
Gender:																										
Male	12.7	12.5	10.9	12.8	11.8	11.4	9.9	8.1	6.9	6.7	6.9	5.4	-1.5	18.7	18.1	19.3	19.2	17.2	15.0	14.9	13.8	12.2	11.4	12.7	9.9	-2.8s
Female	1.4	2.0	2.7	2.4	2.9	2.9	1.5	1.5	2.1	1.8	1.4	1.3	-0.2	1.3	1.8	2.0	2.1	2.1	2.3	2.7	1.7	1.3	1.3	1.6	2.1	+0.5
College Plans:																										
None or under 4 yrs.	12.7	17.1	15.5	16.7	15.4	16.4	12.6	13.9	13.2	11.4	14.6	10.2	-4.4	16.9	17.5	20.2	19.9	20.3	16.3	18.5	17.8	13.2	13.9	16.0	13.6	-2.5
Complete 4 yrs.	6.1	5.5	5.3	6.5	6.0	5.6	4.6	3.8	3.5	3.4	2.9	2.6	-0.3	8.4	8.0	8.4	8.5	7.8	7.2	7.2	5.7	5.4	4.8	5.4	4.8	-0.6
Region:																										
Northeast	5.0	4.9	3.4	6.1	5.4	4.9	3.2	2.7	2.5	2.7	3.7	2.7	-1.0	8.6	5.3	8.0	9.0	7.6	6.8	9.3	6.5	5.2	4.6	4.9	4.7	-0.2
North Central	7.1	7.5	7.2	7.1	7.6	8.3	6.8	4.3	5.3	4.8	4.0	3.9	-0.1	11.0	9.6	10.0	10.0	11.0	9.5	7.1	7.9	8.1	6.2	7.0	4.8	-2.2
South	9.5	9.3	8.0	9.9	8.7	8.1	6.7	6.9	5.9	5.8	5.4	4.1	-1.4	11.6	11.4	11.8	11.7	10.9	10.2	10.2	9.5	7.9	7.7	9.6	8.3	-1.3
West	3.5	4.4	6.3	6.0	5.0	5.9	4.1	3.9	2.9	1.9	2.1	1.5	-0.6	7.8	10.9	11.1	10.9	7.7	6.0	8.2	4.6	4.0	4.5	3.0	5.1	+2.0
Population																										
Density:																										
Large MSA	4.8	4.2	3.3	4.6	4.1	4.2	3.6	2.9	1.8	2.4	2.4	1.5	-0.9	5.9	6.4	6.5	6.2	5.9	5.5	4.2	3.7	4.6	5.6	4.1	4.5	+0.4
Other MSA	6.2	6.9	6.8	6.4	6.7	7.1	4.7	4.1	3.9	3.9	3.5	2.9	-0.6	9.2	9.3	10.1	10.9	9.2	8.4	8.3	5.7	5.3	4.3	5.7	6.1	+0.5
Non-MSA	10.4	10.3	9.9	13.0	11.2	10.6	9.0	8.5	8.9	7.0	7.0	6.2	-0.8	14.7	13.3	14.1	13.9	15.0	12.2	14.7	15.1	11.3	9.8	12.5	8.2	-4.4s
Parental Education: <sup>a</sup>																										
1.0-2.0 (Low)	11.4	7.8	9.4	8.9	10.6	6.3	8.3	5.4	6.6	7.4	5.0	4.5	-0.5	6.6	10.1	10.9	9.4	9.6	8.1	9.0	6.8	7.2	7.4	6.9	6.7	-0.2
2.5-3.0	8.4	8.5	7.5	8.4	9.9	8.8	6.0	5.1	5.7	5.2	5.4	5.1	-0.3	12.1	11.0	12.2	12.5	10.4	9.7	9.4	8.2	7.0	6.4	8.9	8.1	-0.8
3.5-4.0	6.7	7.0	7.5	8.7	7.0	7.2	6.5	5.9	4.5	4.5	3.7	3.2	-0.5	10.6	10.5	10.9	10.2	10.9	8.3	10.3	8.6	7.3	6.3	7.1	5.5	-1.5
4.5-5.0	4.8	7.0	5.2	6.1	5.0	6.8	4.8	4.4	3.3	2.9	2.5	2.4	-0.1	9.3	7.6	9.9	9.8	9.8	8.5	7.2	6.9	6.1	6.2	5.7	5.4	-0.3
5.5-6.0 (High)	6.1	4.6	4.9	6.8	5.8	5.9	3.7	3.9	3.1	3.0	4.2	2.5	-1.7	8.6	8.1	7.0	8.9	6.0	7.7	8.3	5.2	4.8	4.0	4.8	5.2	+0.4
Race (2-year average): <sup>b</sup>																										
White	—	8.3	8.0	8.1	8.9	8.8	7.6	6.1	5.4	5.2	4.8	4.1	-0.8	—	11.4	12.0	12.5	12.0	11.0	10.4	10.0	8.7	7.5	7.5	7.8	+0.3
Black	—	1.8	2.7	3.2	2.6	2.2	2.6	2.3	2.3	2.7	2.2	1.6	-0.6	—	2.9	2.3	2.3	2.5	2.5	2.8	2.3	1.6	2.0	3.2	2.6	-0.6
Hispanic	—	4.2	4.0	5.0	5.7	5.2	4.6	4.5	4.6	3.7	3.3	4.0	+0.7	—	6.2	6.1	4.3	3.6	4.0	4.6	4.8	4.8	4.5	4.0	4.0	+0.1

NOTES: Level of significance of difference between the two most recent classes:  $s = .05$ ,  $ss = .01$ ,  $sss = .001$ . '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error. See Table D-64 for the number of subgroup cases. See Appendix B for definition of variables in table. Data based on one of two forms in 1991-96 and on two of four forms beginning in 1997; N is one-half of N indicated in Table D-64.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

<sup>b</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**TABLE D-59**  
**Smokeless Tobacco: Trends in Thirty-Day Prevalence of Use by Subgroups for Twelfth Graders**

	Percentage who used in last thirty days																								'01-'02 change				
	Class of:																												
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990 <sup>a</sup>	1991 <sup>a</sup>	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	
Approx. N =	9400	15400	17100	17800	15500	15900	17500	17700	16300	15900	16000	15200	16300	16300	16700	15200	15000	15800	16300	15400	15400	14300	15400	15200	13600	12800	12800	12900	
Total	—	—	—	—	—	—	—	—	—	—	—	11.5	11.3	10.3	8.4	—	—	11.4	10.7	11.1	12.2	9.8	9.7	8.8	8.4	7.6	7.8	6.5	-1.4
Gender:																													
Male	—	—	—	—	—	—	—	—	—	—	—	22.3	22.8	19.9	15.9	—	—	20.8	19.7	20.3	23.6	19.5	18.7	15.6	15.5	14.4	14.2	12.2	-2.0
Female	—	—	—	—	—	—	—	—	—	—	—	1.6	0.7	1.7	1.2	—	—	2.0	2.3	2.6	1.8	1.1	1.2	1.5	1.3	1.3	1.6	1.2	-0.4
College Plans:																													
None or under 4 years	—	—	—	—	—	—	—	—	—	—	—	14.5	15.5	13.1	9.6	—	—	18.0	14.9	15.8	18.7	17.6	16.9	14.3	10.5	15.8	13.0	10.8	-2.2
Complete 4 years	—	—	—	—	—	—	—	—	—	—	—	9.8	9.0	8.8	7.7	—	—	9.4	9.4	9.3	9.9	7.6	7.4	7.1	7.6	5.4	6.1	4.8	-1.4
Region:																													
Northeast	—	—	—	—	—	—	—	—	—	—	—	9.5	7.3	5.9	5.0	—	—	8.2	9.6	12.0	9.6	8.4	6.9	2.6	4.3	5.3	5.4	5.3	-0.1
North Central	—	—	—	—	—	—	—	—	—	—	—	13.5	11.3	10.8	8.3	—	—	12.3	13.6	14.7	16.7	12.6	13.4	11.8	8.9	11.1	9.9	7.8	-2.1
South	—	—	—	—	—	—	—	—	—	—	—	12.2	13.7	12.1	9.8	—	—	12.5	11.1	9.7	11.9	9.2	9.0	10.5	10.7	7.3	8.5	7.9	-0.6
West	—	—	—	—	—	—	—	—	—	—	—	9.3	11.7	10.9	9.1	—	—	11.1	7.0	8.5	8.6	8.5	9.1	7.3	7.0	6.3	6.2	3.9	-2.3
Population																													
Density:																													
Large MSA	—	—	—	—	—	—	—	—	—	—	—	9.0	6.4	7.7	6.8	—	—	5.9	7.1	7.5	12.5	8.6	6.5	4.7	4.9	4.2	4.4	3.4	-1.0
Other MSA	—	—	—	—	—	—	—	—	—	—	—	8.9	10.5	8.5	7.6	—	—	11.1	9.9	11.3	9.5	7.4	7.4	7.7	8.5	7.9	8.0	5.7	-2.4
Non-MSA	—	—	—	—	—	—	—	—	—	—	—	17.1	17.5	16.1	11.7	—	—	16.9	15.0	14.7	16.7	15.3	17.9	16.1	11.7	11.4	11.5	11.9	+0.5
Parental																													
Education: <sup>b</sup>																													
(Low)																													
1.0-2.0	—	—	—	—	—	—	—	—	—	—	—	8.6	11.7	10.7	5.3	—	—	14.9	7.0	12.3	9.8	6.3	5.8	6.1	5.4	4.3	6.3	4.1	-2.1
2.5-3.0	—	—	—	—	—	—	—	—	—	—	—	14.4	11.5	10.7	7.0	—	—	12.4	11.6	12.9	11.5	10.4	10.7	9.0	9.1	9.9	7.5	5.6	-1.9
3.5-4.0	—	—	—	—	—	—	—	—	—	—	—	11.5	12.1	10.6	9.0	—	—	12.4	10.8	9.8	12.8	9.1	10.4	9.8	8.8	8.9	8.6	7.4	-1.2
4.5-5.0	—	—	—	—	—	—	—	—	—	—	—	10.4	11.7	11.8	10.2	—	—	8.0	13.3	11.1	12.8	11.4	9.1	9.6	8.5	6.2	6.2	7.3	+1.1
5.5-6.0	—	—	—	—	—	—	—	—	—	—	—	7.7	8.1	7.2	8.4	—	—	10.6	7.8	10.2	11.6	8.1	9.9	7.4	7.9	5.7	10.3	4.6	-5.7
(High)																													
Race (2-year																													
average): <sup>c</sup>																													
White	—	—	—	—	—	—	—	—	—	—	—	—	12.9	12.0	10.6	—	—	—	13.8	13.8	13.8	13.0	12.2	11.8	11.0	10.5	10.3	9.7	-0.6
Black	—	—	—	—	—	—	—	—	—	—	—	—	2.1	4.5	4.5	—	—	—	2.0	1.9	2.1	2.7	2.2	1.4	1.5	1.5	1.2	1.0	-0.1
Hispanic	—	—	—	—	—	—	—	—	—	—	—	—	4.4	5.2	5.1	—	—	—	6.0	5.4	7.6	8.1	5.3	4.3	3.9	3.8	3.2	2.6	-0.6

NOTES: Level of significance of difference between the two most recent classes:  $s = .05$ ,  $ss = .01$ ,  $sss = .001$ . '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error. See Table D-65 for the number of subgroup cases. See Appendix B for definition of variables in table. Data based on one of six forms; N is one-sixth of N indicated in Table D-65.

SOURCE: The Monitoring the Future Study, the University of Michigan.

**CAUTION: Limited sample sizes (see "Notes" above). Use caution in interpreting subgroup trends.**

<sup>a</sup>Prevalence of smokeless tobacco use was not asked of twelfth graders in 1990 and 1991. Prior to 1990 the prevalence of use question on smokeless tobacco was located near the end of one twelfth-grade questionnaire form, whereas after 1991 the question was placed earlier and in a different form. This shift could explain the discontinuities between the corresponding data.

<sup>b</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

<sup>c</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**TABLE D-60**  
**Smokeless Tobacco: Trends in Thirty-Day Prevalence of Daily Use**  
**by Subgroups for Eighth and Tenth Graders**

	Percentage who used daily in last thirty days																											
	8th Grade													10th Grade														
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	'01-'02 change	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	'01-'02 change		
	Approx. N = 17500 18600 18300 17300 17500 17800 18600 18100 16700 16700 16200 15100													14800 14800 15300 15800 17000 15600 15500 15000 13600 14300 14000 14300														
Total	1.6	1.8	1.5	1.9	1.2	1.5	1.0	1.0	0.9	0.9	1.2	0.8	-0.4	3.3	3.0	3.3	3.0	2.7	2.2	2.2	2.2	1.5	1.9	2.2	1.7	-0.6		
Gender:																												
Male	3.1	3.4	2.9	3.2	2.2	2.9	1.7	1.8	1.6	1.5	2.5	1.5	-1.0s	6.3	6.3	6.4	5.9	5.2	4.2	4.0	4.3	3.2	3.9	4.5	3.0	-1.5s		
Female	0.2	0.3	0.3	0.3	0.3	0.2	0.3	0.2	0.2	0.3	0.1	0.2	+0.1	0.2	0.1	0.3	0.2	0.2	0.2	0.3	0.3	0.1	0.2	0.3	0.2	-0.1		
College Plans:																												
None or under 4 yrs.	4.1	5.6	4.4	5.4	3.5	5.1	3.6	6.1	3.8	2.7	4.5	4.5	0.0	7.6	8.5	8.8	6.5	7.8	5.4	6.3	6.4	3.6	5.9	6.6	4.6	-2.0		
Complete 4 yrs.	1.2	1.2	1.1	1.4	0.9	1.0	0.6	0.5	0.5	0.7	0.9	0.5	-0.4	2.3	1.9	2.2	2.2	1.9	1.6	1.5	1.5	1.2	1.2	1.5	1.0	-0.5		
Region:																												
Northeast	1.2	0.9	0.6	0.8	0.6	0.8	0.6	0.4	0.1	0.4	0.7	0.6	-0.1	1.8	1.0	1.7	3.0	2.0	1.3	1.5	1.2	1.2	0.9	1.1	0.8	-0.3		
North Central	1.5	1.6	1.6	1.4	1.1	2.0	1.2	1.3	0.9	1.3	1.1	1.1	0.0	3.1	2.9	2.5	2.4	2.5	2.1	1.4	2.1	2.0	2.1	2.1	1.3	-0.8		
South	2.4	3.0	2.2	3.3	1.8	2.0	1.5	1.3	1.6	1.3	2.1	1.0	-1.1	4.7	4.5	5.2	3.3	4.1	3.3	3.5	3.8	2.0	2.8	3.6	2.6	-0.9		
West	0.6	0.8	1.0	0.9	0.8	0.8	0.2	0.7	0.3	0.2	0.1	0.2	+0.1	2.7	2.9	3.1	3.6	1.1	1.0	1.7	0.8	0.7	1.0	0.9	1.1	+0.2		
Population																												
Density:																												
Large MSA	0.5	0.6	0.7	0.7	0.4	0.4	0.5	0.4	0.3	0.2	0.3	0.4	0.0	1.5	1.6	1.1	1.0	1.5	0.6	0.8	1.0	0.8	1.6	0.8	1.3	+0.5		
Other MSA	1.2	1.9	1.5	1.0	0.9	1.2	0.8	0.6	0.8	0.8	0.8	0.6	-0.2	3.1	2.8	3.2	3.5	2.3	2.3	1.7	1.5	1.0	1.0	1.7	1.4	-0.3		
Non-MSA	3.3	2.8	2.5	4.6	2.6	3.4	1.6	2.6	1.8	2.0	2.9	1.8	-1.1	5.0	4.9	5.3	4.2	4.9	3.6	4.6	5.0	3.5	3.8	5.0	2.6	-2.3		
Parental Education: <sup>a</sup>																												
1.0-2.0 (Low)	2.8	3.5	2.0	3.0	2.2	1.5	3.2	2.6	0.9	1.4	1.8	2.2	+0.4	2.5	3.9	4.1	3.2	3.6	1.7	3.8	2.6	1.7	2.4	3.8	1.7	-2.1		
2.5-3.0	2.2	2.6	1.9	2.7	1.7	3.1	1.1	1.5	1.6	1.4	2.1	1.0	-1.1	4.8	5.0	4.3	3.8	3.4	3.4	2.0	2.8	1.7	2.3	3.2	1.2	-2.0ss		
3.5-4.0	1.4	1.2	1.8	1.9	1.2	1.7	0.9	1.3	0.8	1.3	0.3	1.0	+0.7	3.3	2.8	3.1	3.0	2.8	1.4	2.4	2.7	1.6	1.6	1.5	2.0	+0.5		
4.5-5.0	0.8	1.3	1.1	1.1	0.9	0.3	0.8	0.5	0.5	0.4	0.5	0.3	-0.2	2.5	1.7	2.5	2.7	2.9	2.3	1.7	1.8	1.6	1.9	1.9	1.5	-0.4		
5.5-6.0 (High)	1.0	0.9	0.6	0.7	0.8	0.8	0.4	0.5	0.4	0.4	1.7	0.9	-0.9	2.5	1.6	2.7	1.7	1.0	1.4	1.9	0.7	0.8	0.8	1.9	1.3	-0.5		
Race (2-year average): <sup>b</sup>																												
White	—	2.0	2.0	2.0	1.9	1.7	1.5	1.2	1.1	1.1	1.2	1.0	-0.2	—	3.8	3.9	3.8	3.3	2.9	2.5	2.7	2.4	2.1	2.4	2.3	-0.1		
Black	—	0.3	0.4	0.7	0.6	0.4	0.5	0.4	0.4	0.4	0.5	0.5	0.0	—	0.5	0.4	0.6	0.5	0.4	0.4	0.4	0.3	0.4	0.9	0.8	-0.1		
Hispanic	—	0.8	0.9	0.9	0.7	1.1	0.9	0.8	1.0	0.8	0.8	0.8	+0.1	—	1.1	1.0	0.8	1.2	1.2	1.3	1.3	0.8	0.8	1.0	0.5	-0.5		

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001.

'—' indicates data not available. '\*' indicates less than .05 percent but greater than 0 percent.

Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.

See Table D-64 for the number of subgroup cases. See Appendix B for definition of variables in table.

Data based on one of two forms in 1991-96 and on two of four forms beginning in 1997; N is one-half of N indicated in Table D-64.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

<sup>b</sup>To derive percentages for each racial subgroup, data for the specified year *and* the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**TABLE D-61**  
**Smokeless Tobacco: Trends in Thirty-Day Prevalence of Daily Use by Subgroups for Twelfth Graders**

	Percentage who used daily in last thirty days																							'01-'02 change					
	Class of:																												
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990 <sup>a</sup>	1991 <sup>a</sup>	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	
Approx. N =	9400	15400	17100	17800	15500	15900	17500	17700	16300	15900	16000	15200	16300	16300	16700	15200	15000	15800	16300	15400	15400	14300	15400	15200	13600	12800	12800	12900	
Total	—	—	—	—	—	—	—	—	—	—	—	4.7	5.1	4.3	3.3	—	—	4.3	3.3	3.9	3.6	3.3	4.4	3.2	2.9	3.2	2.8	2.0	-0.9
Gender:																													
Male	—	—	—	—	—	—	—	—	—	—	—	10.0	10.7	8.6	6.8	—	—	7.8	6.4	7.2	7.2	7.1	8.6	6.0	5.7	6.5	5.6	4.3	-1.4
Female	—	—	—	—	—	—	—	—	—	—	—	0.1	0.1	0.5	0.0	—	—	0.5	0.4	0.3	0.1	0.1	0.2	0.0	0.0	0.4	0.3	0.0	-0.3
College Plans:																													
None or under 4 years	—	—	—	—	—	—	—	—	—	—	—	7.1	7.8	5.8	4.2	—	—	7.4	4.3	6.6	6.5	6.8	9.1	6.5	3.4	7.9	4.7	2.4	-2.3
Complete 4 years	—	—	—	—	—	—	—	—	—	—	—	3.3	3.7	3.5	2.7	—	—	3.3	3.1	2.8	2.7	2.6	2.7	2.3	2.6	2.0	2.1	1.4	-0.8
Region:																													
Northeast	—	—	—	—	—	—	—	—	—	—	—	4.6	2.1	2.3	1.3	—	—	1.8	1.9	4.5	2.2	3.2	3.5	0.5	1.0	1.3	1.5	1.6	+0.1
North Central	—	—	—	—	—	—	—	—	—	—	—	4.5	4.5	3.5	2.2	—	—	4.0	4.4	4.7	4.9	4.1	7.0	4.0	3.4	5.0	2.8	2.2	-0.6
South	—	—	—	—	—	—	—	—	—	—	—	6.1	7.4	6.3	4.2	—	—	5.4	4.0	3.5	4.2	3.1	3.6	4.6	4.0	4.0	3.8	2.4	-1.4
West	—	—	—	—	—	—	—	—	—	—	—	2.9	5.5	4.0	4.9	—	—	5.1	1.7	3.2	1.6	2.9	3.0	1.8	1.9	1.6	2.6	1.3	-1.2
Population																													
Density:																													
Large MSA	—	—	—	—	—	—	—	—	—	—	—	3.4	3.3	3.0	3.0	—	—	2.0	1.7	2.0	2.1	2.6	3.3	0.9	0.5	0.9	1.4	0.4	-1.0
Other MSA	—	—	—	—	—	—	—	—	—	—	—	3.3	4.3	2.5	2.8	—	—	4.2	3.0	3.6	3.2	1.9	3.3	2.4	3.1	3.7	2.6	2.0	-0.6
Non-MSA	—	—	—	—	—	—	—	—	—	—	—	7.8	8.5	8.9	4.6	—	—	6.5	5.2	6.7	5.8	6.7	7.7	7.6	4.9	5.3	5.0	3.8	-1.1
Parental Education: <sup>b</sup>																													
(Low)																													
1.0-2.0	—	—	—	—	—	—	—	—	—	—	—	1.9	5.6	5.3	1.8	—	—	6.7	3.9	6.6	2.7	2.2	1.3	2.2	2.1	2.9	4.0	2.2	-1.8
2.5-3.0	—	—	—	—	—	—	—	—	—	—	—	7.6	6.9	3.2	3.9	—	—	4.8	3.5	3.8	4.7	3.6	5.8	5.2	3.7	4.2	3.2	1.7	-1.5
3.5-4.0	—	—	—	—	—	—	—	—	—	—	—	3.5	4.7	5.4	3.1	—	—	5.2	3.3	3.3	2.9	3.6	3.7	2.6	3.5	3.9	2.8	2.1	-0.7
4.5-5.0	—	—	—	—	—	—	—	—	—	—	—	3.9	5.0	4.7	4.6	—	—	2.4	3.7	3.9	3.5	4.6	3.9	3.0	1.9	2.1	2.7	2.4	-0.3
5.5-6.0	—	—	—	—	—	—	—	—	—	—	—	3.3	2.1	3.5	1.2	—	—	2.6	1.8	2.7	2.7	1.1	5.0	2.5	2.1	2.5	2.5	0.2	-2.3
(High)																													
Race (2-year average): <sup>c</sup>																													
White	—	—	—	—	—	—	—	—	—	—	—	—	5.8	5.4	4.5	—	—	—	4.8	4.7	4.6	4.1	5.0	5.2	4.3	4.3	4.4	3.5	-0.8
Black	—	—	—	—	—	—	—	—	—	—	—	—	0.6	1.0	0.5	—	—	—	0.3	0.7	0.6	0.3	0.2	0.0	0.0	0.1	0.2	0.1	-0.1
Hispanic	—	—	—	—	—	—	—	—	—	—	—	—	0.8	2.1	2.1	—	—	—	1.6	0.7	1.2	2.2	1.9	0.8	0.4	0.9	0.6	0.3	-0.3

NOTES: Level of significance of difference between the two most recent classes:  $s = .05$ ,  $ss = .01$ ,  $sss = .001$ . '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error. See Table D-65 for the number of subgroup cases. See Appendix B for definition of variables in table. Data based on one of six forms; N is one-sixth of N indicated in Table D-65.

SOURCE: The Monitoring the Future Study, the University of Michigan.

**CAUTION: Limited sample sizes (see "Notes" above). Use caution in interpreting subgroup trends.**

<sup>a</sup>Prevalence of smokeless tobacco use was not asked of twelfth graders in 1990 and 1991. Prior to 1990 the prevalence of use question on smokeless tobacco was located near the end of one twelfth-grade questionnaire form, whereas after 1991 the question was placed earlier and in a different form. This shift could explain the discontinuities between the corresponding data.

<sup>b</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

<sup>c</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**TABLE D-62**  
**Steroids: Trends in Annual Prevalence of Use by Subgroups for Eighth and Tenth Graders**

	Percentage who used in last twelve months																									
	8th Grade													10th Grade												
	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	'01-'02 change	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	'01-'02 change
	<i>Approx. N = 17500 18600 18300 17300 17500 17800 18600 18100 16700 16700 16200 15100</i>													<i>14800 14800 15300 15800 17000 15600 15500 15000 13600 14300 14000 14300</i>												
Total	1.0	1.1	0.9	1.2	1.0	0.9	1.0	1.2	1.7	1.7	1.6	1.5	-0.1	1.1	1.1	1.0	1.1	1.2	1.2	1.2	1.2	1.7	2.2	2.1	2.2	+0.1
Gender:																										
Male	1.8	1.7	1.4	1.8	1.3	1.1	1.3	1.6	2.5	2.2	2.3	1.8	-0.5	1.9	1.9	1.7	1.9	2.0	1.7	1.8	1.9	2.8	3.6	3.3	3.2	0.0
Female	0.3	0.5	0.3	0.6	0.8	0.7	0.7	0.7	0.9	1.0	1.0	1.2	+0.2	0.3	0.3	0.3	0.4	0.5	0.6	0.6	0.6	0.7	0.8	1.0	1.2	+0.2
College Plans:																										
None or under																										
4 yrs.	2.2	2.4	2.2	2.5	2.2	1.5	2.4	2.8	4.0	3.6	3.1	3.6	+0.4	1.7	1.3	1.9	2.1	2.1	2.1	2.4	1.9	2.6	3.6	3.2	3.0	-0.2
Complete 4 yrs.	0.8	0.9	0.7	1.0	0.9	0.8	0.8	1.0	1.4	1.5	1.5	1.3	-0.1	0.9	1.0	0.8	0.9	1.1	1.0	1.0	1.1	1.6	1.9	1.9	2.1	+0.2
Region:																										
Northeast	0.7	1.1	0.6	1.0	1.0	1.1	1.0	1.1	1.6	1.7	1.8	1.2	-0.6	1.2	0.9	1.0	1.0	1.1	1.0	0.9	1.4	2.0	1.8	1.9	2.0	0.0
North Central	1.1	1.2	1.0	1.0	1.1	0.8	1.0	1.2	1.6	1.8	1.7	1.6	-0.1	1.0	1.1	1.2	1.1	1.2	1.4	1.2	1.1	1.8	2.1	1.5	1.8	+0.3
South	1.2	1.1	1.0	1.6	1.1	0.9	0.9	1.4	1.9	1.8	1.9	1.9	0.0	1.0	1.2	1.0	1.3	1.3	1.4	1.4	1.4	1.7	2.5	2.5	2.5	0.0
West	0.7	0.9	0.7	1.0	1.0	0.8	1.1	0.9	1.4	1.3	0.9	1.2	+0.3	1.0	1.2	0.8	1.1	1.3	0.6	1.3	0.9	1.4	2.1	2.3	2.4	+0.1
Population																										
Density:																										
Large MSA	0.8	1.0	0.8	0.9	0.9	0.8	0.9	1.0	1.3	1.6	1.6	1.1	-0.5	1.5	0.9	0.8	0.8	0.8	0.8	1.0	0.8	1.2	2.3	1.9	2.1	+0.2
Other MSA	1.2	1.2	0.9	1.2	1.2	0.9	0.9	1.2	1.9	1.5	1.7	1.6	-0.1	1.0	1.0	0.9	1.1	1.4	1.2	1.2	1.3	1.9	2.0	2.0	2.3	+0.3
Non-MSA	1.0	0.9	0.9	1.5	0.9	0.9	1.2	1.4	1.7	2.0	1.6	2.1	+0.5	0.8	1.4	1.4	1.5	1.4	1.5	1.5	1.5	2.0	2.5	2.4	2.1	-0.3
Parental																										
Education: <sup>a</sup>																										
1.0-2.0 (Low)	1.8	1.2	1.2	1.6	1.3	0.9	1.4	1.7	2.2	2.5	2.0	1.8	-0.2	0.7	0.9	1.5	1.8	1.2	1.7	1.7	1.3	1.2	2.3	1.6	1.6	0.0
2.5-3.0	1.1	1.2	0.8	1.6	1.3	0.7	0.9	1.1	1.9	2.1	1.6	1.7	+0.1	1.3	1.1	1.0	0.9	1.1	0.7	1.1	1.1	1.7	2.2	2.1	2.0	-0.2
3.5-4.0	1.0	1.0	1.1	1.3	0.8	0.9	1.2	1.4	1.6	1.3	1.9	1.9	+0.1	1.0	1.2	1.1	0.8	1.6	1.2	1.4	1.7	2.0	2.0	2.3	2.8	+0.6
4.5-5.0	0.7	0.9	0.8	0.8	0.8	1.2	0.9	1.1	1.4	1.6	1.5	1.0	-0.4	0.9	1.0	0.8	1.4	1.1	1.2	1.0	0.9	1.5	2.4	2.0	2.0	0.0
5.5-6.0 (High)	1.0	1.3	0.6	0.9	1.5	0.9	1.2	1.1	2.0	1.6	1.7	1.6	-0.1	1.2	1.4	1.1	1.1	1.0	1.1	1.1	1.1	2.4	2.2	2.1	3.0	+0.9
Race (2-year																										
average): <sup>b</sup>																										
White	—	1.1	1.0	1.0	1.1	0.9	0.9	1.1	1.5	1.9	1.8	1.7	-0.1	—	1.0	1.0	1.0	1.2	1.3	1.3	1.3	1.5	2.1	2.3	2.4	+0.1
Black	—	0.7	0.6	0.8	0.9	0.7	0.6	0.7	0.8	0.7	0.8	1.2	+0.4	—	0.7	0.8	0.8	0.7	0.7	0.5	0.5	0.7	1.2	1.6	1.2	-0.5
Hispanic	—	1.2	1.1	1.1	1.3	1.5	1.4	1.4	1.8	1.8	1.5	1.5	0.0	—	1.2	1.4	1.3	0.9	1.1	1.2	1.2	1.5	1.8	2.1	2.1	0.0

NOTES: Level of significance of difference between the two most recent classes:  $s = .05$ ,  $ss = .01$ ,  $sss = .001$ . '—' indicates data not available.  
 Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.

See Table D-64 for the number of subgroup cases. See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

<sup>b</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**TABLE D-63**  
**Steroids: Trends in Annual Prevalence of Use by Subgroups for Twelfth Graders**

	Percentage who used in last twelve months																								'01-'02 change				
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998		1999	2000	2001	2002
	Class of:																												
	Approx. N = 9400 15400 17100 17800 15500 15900 17500 17700 16300 15900 16000 15200 16300 16300 16700 15200 15000 15800 16300 15400 15400 14300 15400 15200 13600 12800 12800 12900																												
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.9	1.7	1.4	1.1	1.2	1.3	1.5	1.4	1.4	1.7	1.8	1.7	2.4	2.5	+0.1
Gender:																													
Male	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.8	2.6	2.4	2.1	2.5	2.1	2.4	2.2	2.5	2.8	3.1	2.5	3.8	3.8	0.0
Female	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.9	0.3	0.2	0.1	0.1	0.5	0.6	0.4	0.5	0.3	0.6	0.9	1.1	1.3	+0.2
College Plans:																													
None or under 4 years	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.3	2.2	2.1	2.1	2.0	1.9	2.0	2.3	2.3	2.1	3.6	2.0	4.6	4.1	-0.4
Complete 4 years	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.6	1.3	1.2	0.8	0.9	1.1	1.2	1.1	1.2	1.4	1.3	1.6	1.8	2.0	+0.2
Region:																													
Northeast	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.0	1.3	1.2	0.6	1.5	1.5	1.6	1.3	2.1	0.9	1.3	1.9	4.5	2.1	-2.4s
Central	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.5	1.3	1.4	1.4	0.8	2.2	1.5	2.1	2.1	2.3	1.6	2.3	1.7	2.8	+1.1
South	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.1	2.2	1.7	0.6	1.6	1.0	1.7	1.3	0.5	1.6	2.6	1.5	2.1	2.5	+0.4
West	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.9	1.7	1.0	2.3	1.1	0.8	1.0	0.3	1.6	1.7	1.2	1.1	2.1	2.4	+0.2
Population																													
Density:																													
Large MSA	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.6	1.3	1.1	1.0	0.7	1.1	1.4	1.3	0.8	2.1	1.3	1.7	1.9	2.0	+0.1
Other MSA	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.3	1.5	1.4	1.4	0.9	1.5	1.3	1.3	1.7	1.5	2.0	2.0	2.9	3.0	+0.1
Non-MSA	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.1	2.4	1.6	0.8	2.2	1.3	2.1	1.5	1.6	1.6	1.9	1.2	2.0	2.1	+0.1
Parental																													
Education: <sup>a</sup>																													
(Low)																													
1.0-2.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.6	1.1	2.0	2.1	1.1	2.8	1.1	1.5	3.4	3.0	1.5	1.3	2.1	3.6	+1.5
2.5-3.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.1	2.0	0.6	0.9	1.3	1.7	1.3	1.9	1.4	1.4	0.8	1.6	3.2	3.0	-0.3
3.5-4.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.6	2.3	1.6	1.3	1.5	1.1	1.1	1.3	1.1	1.1	2.5	1.9	1.9	2.8	+0.8
4.5-5.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.3	1.1	1.6	0.9	1.3	0.6	2.0	1.1	1.2	1.9	2.2	1.4	1.9	2.3	+0.4
5.5-6.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.1	1.0	0.5	0.8	0.8	1.2	1.4	1.1	1.3	1.5	1.1	2.4	2.2	1.0	-1.2
(High)																													
Race (2-year																													
average): <sup>b</sup>																													
White	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.6	1.3	1.3	1.2	1.1	1.4	1.3	1.2	1.5	1.7	1.8	2.1	2.5	+0.4	
Black	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.8	1.2	0.5	1.1	1.8	1.2	1.4	1.5	0.9	0.7	1.0	1.2	1.0	1.0	-0.2
Hispanic	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.3	3.3	1.8	0.9	1.7	1.3	0.6	1.6	2.4	2.9	2.4	2.1	2.2	+0.1	

NOTES: Level of significance of difference between the two most recent classes:  $s = .05$ ,  $ss = .01$ ,  $sss = .001$ . '—' indicates data not available.

Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.

See Table D-65 for the number of subgroup cases. See Appendix B for definition of variables in table.

Data based on one of six forms in 1989-90; N is one-sixth of N indicated in Table D-65. Data based on two of six forms beginning in 1991; N is two-sixths of N indicated in Table D-65.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

<sup>b</sup>To derive percentages for each racial subgroup, data for the specified year and the previous year have been combined to increase subgroup sample sizes and thus provide more stable estimates.



**TABLE D-64**  
**Approximate Weighted Ns by Subgroups for Eighth and Tenth Graders**

	<u>8th Grade</u>												<u>10th Grade</u>											
	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>
Total	17,500	18,600	18,300	17,300	17,500	17,800	18,600	18,100	16,700	16,700	16,200	15,100	14,800	14,800	15,300	15,800	17,000	15,600	15,500	15,000	13,600	14,300	14,000	14,300
Gender:																								
Male	8,600	8,800	8,600	8,300	8,100	8,400	8,600	8,600	7,800	7,900	7,500	7,000	7,200	7,000	7,300	7,700	8,300	7,500	7,400	7,100	6,300	6,800	6,600	6,900
Female	8,600	9,300	9,200	8,600	8,700	8,800	9,300	8,900	8,400	8,300	8,300	7,600	7,400	7,400	7,800	7,900	8,400	7,800	7,800	7,700	7,000	7,200	7,100	7,100
College Plans:																								
None or under 4 years	2,300	2,400	2,100	2,000	1,900	2,200	1,900	1,800	1,700	1,600	1,600	1,300	2,600	2,400	2,500	2,700	2,500	2,300	2,200	2,200	1,900	1,900	1,900	2,000
Complete 4 years	14,600	15,400	15,400	14,700	14,800	14,800	15,800	15,600	14,500	14,500	14,100	13,400	11,900	12,000	12,400	12,800	14,200	13,000	13,000	12,500	11,500	12,100	11,900	12,100
Region:																								
Northeast North	3,000	3,700	3,900	3,400	3,100	3,200	3,400	3,300	3,000	2,800	2,900	2,800	2,700	3,000	2,900	3,100	3,300	3,100	3,300	3,100	3,000	2,800	2,700	2,600
Central South	5,300	5,300	4,700	4,200	4,300	4,600	4,100	4,300	4,200	4,300	4,000	4,000	3,700	3,800	4,800	4,700	4,400	3,900	3,900	3,600	3,100	3,700	4,100	3,700
West	6,300	6,200	6,400	6,300	6,600	6,300	7,200	6,600	6,100	6,300	5,900	5,400	4,900	5,000	4,900	5,200	6,100	5,600	5,500	5,200	4,700	5,000	5,000	5,100
West	2,900	3,400	3,300	3,400	3,500	3,700	3,900	3,900	3,400	3,300	3,400	2,900	3,500	3,000	2,700	2,800	3,200	3,000	2,800	3,100	2,800	2,800	2,200	2,900
Population Density:																								
Large MSA	4,500	5,700	5,500	4,400	5,200	5,200	5,000	4,800	4,800	4,900	4,700	4,500	3,400	3,700	3,500	4,100	4,700	4,300	4,300	4,300	3,700	4,000	3,900	4,300
Other MSA	8,400	8,300	8,800	8,300	7,800	8,400	9,000	8,800	7,900	7,900	7,500	6,900	7,400	7,300	7,600	7,500	8,200	7,500	7,300	7,000	6,700	6,700	6,700	6,800
Non-MSA	4,600	4,600	4,000	4,600	4,500	4,200	4,600	4,500	4,000	3,900	4,000	3,700	4,000	3,800	4,200	4,200	4,100	3,800	3,900	3,700	3,200	3,600	3,400	3,200
Parental Education:																								
(Low)																								
1.0-2.0	1,400	1,700	1,700	1,600	1,500	1,500	1,500	1,300	1,300	1,300	1,300	1,100	1,300	1,300	1,300	1,300	1,200	1,100	1,300	1,300	1,100	1,200	1,200	1,300
2.5-3.0	4,400	4,600	4,500	4,100	3,900	4,300	4,000	3,900	3,800	3,700	3,400	3,200	3,900	3,900	4,100	4,100	4,100	3,600	3,700	3,700	3,200	3,200	3,200	3,300
3.5-4.0	4,100	4,300	4,300	4,200	4,000	4,100	4,300	4,100	3,800	3,900	4,000	3,500	3,900	3,900	4,100	4,300	4,600	4,300	4,100	4,000	3,600	3,700	3,700	3,700
4.5-5.0	4,100	4,100	4,100	3,900	3,900	3,900	4,500	4,500	4,000	3,900	3,900	3,800	3,500	3,400	3,500	3,700	4,000	3,900	3,700	3,500	3,300	3,500	3,400	3,500
5.5-6.0	2,200	2,300	2,300	2,200	2,300	2,200	2,600	2,700	2,200	2,200	2,100	2,100	1,800	1,700	1,700	1,800	2,300	1,900	1,900	1,800	1,700	1,900	1,800	1,700
(High)																								
Race (2-year average): <sup>a</sup>																								
White	—	21,900	22,000	20,900	19,800	20,200	21,400	21,300	19,800	18,900	18,600	17,600	—	19,600	20,700	22,000	22,900	22,400	20,900	19,800	18,400	18,200	18,600	18,000
Black	—	4,200	4,800	5,500	5,600	5,300	4,700	4,900	5,000	4,800	4,500	4,500	—	3,900	3,600	3,300	3,300	3,100	3,200	3,600	3,600	3,100	2,800	3,400
Hispanic	—	3,400	3,600	4,000	4,000	4,000	4,200	4,100	4,100	4,000	4,100	3,900	—	2,600	2,700	2,800	2,900	3,000	3,200	3,500	3,200	3,100	3,400	3,600

NOTES: '—' indicates data not available. See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

**CAUTION: The Ns in this table are based on the entire sample at each grade level. Some drug-use questions are asked only in some of the questionnaire forms rather than in all, in which case these Ns need to be adjusted appropriately. Look under "Notes" in each table to see if only a fraction of the sample was asked about that drug. If there is no such indication, that means the entire sample received the question.**

<sup>a</sup>Ns for each racial subgroup represent the combination of the specified year and the previous year. Data have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**TABLE D-65**  
**Approximate Weighted Ns by Subgroups for Twelfth Graders**

	<u>Class of:</u>													
	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>
Total	9,400	15,400	17,100	17,800	15,500	15,900	17,500	17,700	16,300	15,900	16,000	15,200	16,300	16,300
Gender:														
Male	4,300	6,900	7,100	8,500	7,500	7,500	8,400	8,500	7,800	7,600	7,600	7,100	7,700	7,700
Female	5,200	7,000	7,600	9,000	8,000	7,800	8,600	8,600	8,000	7,800	8,000	7,700	8,200	8,200
College Plans:														
None or under 4 years	—	6,500	6,700	8,100	6,800	6,300	6,700	7,200	6,300	5,900	5,600	5,100	5,000	4,700
Complete 4 years	—	6,800	7,200	8,600	8,000	8,500	9,700	9,200	8,800	8,900	9,300	9,100	10,300	10,600
Region:														
Northeast	2,200	3,400	3,700	4,400	3,800	3,600	4,100	4,600	3,900	3,200	3,700	3,600	3,500	3,200
North Central	2,900	4,500	4,600	5,200	4,800	4,700	5,300	5,200	4,600	4,500	4,400	4,300	4,400	4,300
South	3,000	4,300	4,600	6,000	4,800	4,800	5,300	5,300	5,200	5,300	4,900	4,700	5,200	5,600
West	1,400	2,200	2,200	2,500	2,600	2,700	2,800	2,600	2,600	2,900	3,000	2,600	3,200	3,200
Population Density:														
Large MSA	2,100	3,700	4,000	4,600	4,000	3,900	4,500	4,800	4,200	4,100	4,200	3,700	4,200	4,400
Other MSA	4,000	5,700	6,200	8,000	6,800	6,700	7,100	7,300	6,800	6,900	6,900	7,000	8,000	7,700
Non-MSA	3,400	5,000	4,900	5,500	5,200	5,200	5,900	5,600	5,300	4,900	4,900	4,500	4,100	4,200
Parental Education:														
1.0-2.0 (Low)	1,700	2,200	2,600	3,100	2,500	2,300	2,400	2,700	2,200	1,900	1,800	1,800	1,700	1,600
2.5-3.0	3,000	4,300	5,400	6,200	5,600	5,300	5,800	5,900	5,500	5,100	5,100	4,600	4,500	4,500
3.5-4.0	1,600	2,500	3,200	4,000	3,600	3,600	4,200	4,200	3,900	4,000	4,000	3,800	4,300	4,400
4.5-5.0	1,100	1,600	2,200	2,800	2,600	2,700	3,100	2,900	2,800	2,900	3,000	2,900	3,400	3,500
5.5-6.0 (High)	440	710	1,100	1,200	1,200	1,300	1,500	1,300	1,200	1,400	1,500	1,500	1,800	1,900
Race (2-year average): <sup>a</sup>														
White	—	—	23,400	26,500	27,500	25,600	26,300	27,300	26,200	24,700	24,200	23,600	23,800	24,200
Black	—	—	3,300	3,700	3,500	3,500	4,000	4,000	3,900	4,000	4,000	3,500	3,200	3,600
Hispanic	—	—	890	1,000	940	740	930	1,300	1,300	1,200	1,200	1,500	1,900	2,100

NOTES: '—' indicates data not available.

See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

**CAUTION: The Ns in this table are based on the entire twelfth-grade sample. Some drug-use questions are asked only in some of the questionnaire forms rather than in all, in which case these Ns need to be adjusted appropriately. Look under "Notes" in each table to see if only a fraction of the sample was asked about that drug. If there is no such indication, that means the entire sample received the question.**

<sup>a</sup>Ns for each racial subgroup represent the combination of the specified year *and* the previous year. Data have been combined to increase subgroup sample sizes and thus provide more stable estimates.

(Table continued on next page)

**TABLE D-65 (cont.)**  
**Approximate Weighted Ns by Subgroups for Twelfth Graders**

	Class of:													
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Total	16,700	15,200	15,000	15,800	16,300	15,400	15,400	14,300	15,400	15,200	13,600	12,800	12,800	12,900
Gender:														
Male	8,000	7,700	7,400	7,400	7,500	6,900	7,200	6,700	7,100	7,100	6,300	5,800	5,800	5,800
Female	8,300	7,100	7,200	7,900	8,200	8,000	7,800	7,100	7,700	7,500	6,700	6,400	6,500	6,600
College Plans:														
None or under 4 years	4,800	4,200	4,000	3,700	3,700	3,400	3,300	2,600	3,200	3,100	2,800	2,600	2,500	2,400
Complete 4 years	11,000	10,100	10,300	11,200	11,600	11,100	11,200	10,800	11,000	11,100	10,200	9,300	9,600	9,700
Region:														
Northeast	3,200	3,300	2,800	2,800	2,700	2,700	2,800	3,000	3,300	2,800	2,500	2,500	2,400	2,500
North Central	4,500	4,200	4,000	4,400	4,600	4,000	4,300	3,800	4,100	3,800	3,600	3,100	3,700	3,300
South	6,100	5,000	5,100	5,600	5,800	5,700	5,400	5,100	5,300	5,700	4,900	4,500	4,100	4,300
West	2,900	2,700	3,100	3,000	3,200	3,000	2,900	2,400	2,700	2,900	2,600	2,700	2,600	2,800
Population Density:														
Large MSA	4,000	3,800	3,600	3,600	3,700	4,300	4,400	3,400	4,100	4,300	3,800	3,800	3,800	4,000
Other MSA	8,800	7,700	7,200	8,200	7,800	7,100	7,000	7,000	7,500	7,500	6,200	5,800	5,800	5,900
Non-MSA	3,900	3,700	4,200	4,000	4,800	4,000	4,000	3,900	3,800	3,400	3,600	3,200	3,200	3,000
Parental Education:														
1.0-2.0 (Low)	1,700	1,600	1,500	1,400	1,600	1,400	1,200	1,100	1,300	1,200	960	860	1,000	980
2.5-3.0	4,600	4,300	4,100	4,100	4,300	3,700	3,700	3,300	3,600	3,700	3,200	3,000	2,900	2,800
3.5-4.0	4,500	4,100	4,200	4,600	4,500	4,300	4,400	3,800	4,100	4,300	3,900	3,600	3,600	3,800
4.5-5.0	3,500	3,100	3,100	3,400	3,600	3,500	3,700	3,500	3,500	3,300	3,200	3,100	3,200	3,100
5.5-6.0 (High)	1,700	1,600	1,500	1,700	1,700	1,800	1,800	2,100	2,100	2,000	1,800	1,600	1,600	1,500
Race (2-year average): <sup>a</sup>														
White	24,000	23,400	21,900	21,500	22,000	21,800	21,600	20,700	19,800	20,200	19,500	17,700	16,200	16,300
Black	3,900	3,500	3,200	3,900	4,200	3,600	3,300	3,200	3,600	3,700	3,400	3,300	3,100	2,900
Hispanic	2,400	2,500	2,400	2,600	2,900	3,100	2,700	2,600	2,800	3,000	2,500	2,200	2,600	3,100

NOTES: '—' indicates data not available.

See Appendix B for definition of variables in table.

SOURCE: The Monitoring the Future Study, the University of Michigan.

**CAUTION: The Ns in this table are based on the entire twelfth-grade sample. Some drug-use questions are asked only in some of the questionnaire forms rather than in all, in which case these Ns need to be adjusted appropriately. Look under "Notes" in each table to see if only a fraction of the sample was asked about that drug. If there is no such indication, that means the entire sample received the question.**

<sup>a</sup>Ns for each racial subgroup represent the combination of the specified year *and* the previous year. Data have been combined to increase subgroup sample sizes and thus provide more stable estimates.

**2001–2002 Change Score Calculation  
for Tables D-3, D-4, D-9, D-10, D-13, D-14, D-42, and D-43**

For any illicit drug other than marijuana, hallucinogens, hallucinogens other than LSD, and tranquilizers, the 2001–2002 change score is calculated as the combination of the data from half of the 2001 forms containing the old question wording plus the data from half of the 2002 forms with the new question wording minus the combination of the data from half of the 2000 forms with the old question wording combined with the data from half of the 2001 forms with the new question wording.

## Appendix E

### TRENDS IN SPECIFIC SUBCLASSES OF HALLUCINOGENS, AMPHETAMINES, TRANQUILIZERS, AND NARCOTICS OTHER THAN HEROIN

In one of the six questionnaire forms administered to twelfth graders, respondents who answer that they used *amphetamines* in the prior 12 months are then asked a small set of additional questions about that use. One question asks, “Which amphetamines have you taken in the last year without a doctor’s orders? (Mark all that apply.)” A pre-specified list of amphetamines (e.g., Benzedrine, Dexadrine, Methedrine, Ritalin, etc.) is provided, along with a category labeled, “Other” and one labeled, “Don’t know the name of some amphetamines I have used.”<sup>117</sup> Parallel questions are included in the same twelfth-grade questionnaire form for three other classes of drugs: *hallucinogens other than LSD*, *tranquilizers*, and *narcotics other than heroin*.

The answers to these four question sets are provided here, covering the 27-year interval from 1976 to 2002. Because these questions are contained in only one of the six twelfth-grade questionnaire forms (one of five in earlier years), the number of cases on which the estimates are based is lower than most of the prevalence estimates contained elsewhere in this volume. The relevant numbers of cases are provided in the bottom rows of each table.

We provide one other caution to the reader in interpreting these results. For some of these drug classes, the absolute prevalence rates may be underestimates of the true rates. This occurs because some users of a particular subclass may not realize that the substance (e.g., peyote) actually is a subclass of the more general class (in this case, “hallucinogens other than LSD”), even though the substance (peyote) is listed (as one of the “other hallucinogenic” drugs) in the introduction to the question set. Such respondents, therefore, may not indicate use on the general question (about hallucinogens other than LSD), which means they would never get to the question about using the subclass drug (peyote). As a result, they would not be counted among the users.

In the twelfth-grade questionnaire form we go to some length to state both the full list of common street names, as well as the proper names, for the drugs in the general class *before* asking about use of the general class of drugs. However, because two of the drugs in the subclass lists (PCP and crystal methamphetamine) also have been included on a different questionnaire form in recent years as a general class (without branching), we have been able to determine that they show higher prevalence rates when not treated as a subclass. For example, the 2002 annual prevalence rate for PCP generated by a general question about PCP use asked of all seniors was 1.1%, whereas the rate generated when the drug was treated as a subcategory of hallucinogens other than LSD was only 1.0%. (In earlier years the difference has been larger.) This may be an atypical case, however, because proper classification of PCP is quite ambiguous—it actually is

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<sup>117</sup>It should be noted that in this questionnaire form, the original question lists all of the subclasses in advance as being included in the definition of the general class. For example, the question regarding amphetamine use reads, “They include the following drugs: Benzedrine, Dexedrine, Methedrine, Ritalin . . . .” A list of common street names is also given to help define the drug class for the respondent.

an animal tranquilizer with hallucinogenic effects. (In fact, we suspected that students were not categorizing PCP as “hallucinogens other than LSD,” even though it was given in the list of examples for that question. That suspicion led us to ask separate questions about its use.)

Despite the fact that the questions about subclasses of drugs may underestimate the *prevalence* of use to some degree, we think they still are helpful for discerning long-term trends. To stay with the PCP example, both the general questions about PCP use and the question that treats PCP as a subcategory of hallucinogens other than LSD have shown very similar trends since 1979, when both were first available for comparison. Both measures showed a substantial decline in PCP use from 1979 through the mid-1980s, followed by a period of stability in use at low levels, then followed by a modest increase in use in the 1990s until 1996, when use leveled. (In 2001 both measures showed some decline.) Thus if we had only the results from the subcategory question available, we would have obtained quite an accurate picture of the trend story, even though we would have been underestimating the absolute prevalence rate to some degree.

We conclude that the data for the other specific drug classes also should provide a fair approximation of the trend stories. The majority of such prevalence data probably underestimates the true rates, however.

NOTE ON HALLUCINOGENS: In 2001, we changed the question wording in the general question about use of hallucinogens other than LSD, replacing the older term *psychedelics* with the now more current term, *hallucinogens*; and, perhaps more important, the term *shrooms* was added to the list of examples. (*Shrooms* is the street name that has come into favor in recent years for hallucinogenic mushrooms.) We believe that this methodological change had the effect of increasing prevalence rates in both the general category and in some of the specific drugs within it.<sup>118</sup> Therefore, the change between 2000 and 2001 in Table E-1 for the various classes of hallucinogens other than LSD must not be mistaken for a real change in use.

**Ritalin** has been one of the specific drugs listed under the general class of amphetamines. It is an indicated treatment for Attention Deficit Hyperactivity Disorder (ADHD) and has received increasing attention in recent years. For that reason, we added a separate “tripwire” question about its use in the 2001 survey.<sup>119</sup> As with PCP, we find that the prevalence reported in response to a stand-alone question is higher than that reported under a branching question. Annual prevalence in 2002 among twelfth graders was 4.0% with the new question, compared to 2.6% with the branching question.

Based on the new question, half of the users (1.9% of all seniors) reported using Ritalin only once or twice in the prior year, while 0.9% reported using it ten or more times during the year. We believe that the trend results based on the branching question tell a reasonably accurate story about the pattern of change for Ritalin use, despite the difference in the absolute prevalence rate.

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<sup>118</sup>“Shrooms” is a street name for the drug psilocybin, which is derived from a certain species of mushroom, thus the term “shrooms.” Clearly many more students at present recognize this drug by the street name, because the annual prevalence rate jumped from 1.4% in 2000 for “psilocybin,” to 4.9% in 2001 for “shrooms or psilocybin.” The fact that the prevalence rate for this subclass of hallucinogen had changed little before the change in wording and actually declined some in the year following the change suggests that virtually all of the increase was due to the rewording.

<sup>119</sup>A tripwire question is one that, for reasons of space economy, asks only about frequency of use in the prior twelve months.

**TABLE E-1**  
**Specific Hallucinogens Other Than LSD: Trends in Annual Prevalence of Use for All Seniors<sup>a</sup>**

What psychedelics/hallucinogens <sup>b</sup> other than LSD have you taken during the last year?	Percentage of ALL SENIORS using drug indicated in past year																											
	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990	Class of 1991	Class of 1992	Class of 1993	Class of 1994	Class of 1995	Class of 1996	Class of 1997	Class of 1998	Class of 1999	Class of 2000	Class of 2001	Class of 2002	'01-'02 change
Mescaline	5.1	5.0	5.0	4.1	4.8	3.7	3.5	2.7	3.0	2.3	2.1	1.6	0.8	0.9	0.6	0.6	0.6	0.8	0.5	1.1	1.2	0.8	1.3	0.9	1.3	0.9	0.8	-0.1
Peyote	1.8	1.4	1.5	1.1	1.1	0.9	0.6	0.6	0.6	0.5	0.4	0.5	0.3	0.4	0.9	0.1	0.5	0.6	0.6	0.7	0.9	0.8	0.6	0.8	0.2	0.9	0.6	-0.2
Psilocybin (shrooms) <sup>b</sup>	1.7	1.0	1.3	1.0	1.5	1.6	0.9	0.7	0.7	0.6	0.9	0.6	0.9	0.3	0.7	0.3	0.2	0.5	0.5	0.9	1.4	1.1	1.4	1.2	1.4	‡ 4.9	4.0	-0.9
PCP	2.9	3.3	4.5	4.2	3.5	2.2	1.4	1.5	1.2	0.9	0.8	1.0	0.6	0.4	0.8	0.5	0.6	0.7	0.9	1.2	1.1	0.9	0.8	1.1	1.2	0.9	1.0	+0.2
Concentrated THC	5.6	5.7	5.3	4.6	2.6	2.1	1.5	1.4	0.9	1.1	0.8	1.0	0.7	0.4	0.4	0.4	0.2	0.5	0.4	0.9	1.5	1.2	1.1	1.3	0.9	1.3	0.8	-0.5
Other	3.3	3.7	3.4	3.9	2.9	2.7	1.9	1.5	1.5	1.3	0.9	0.9	0.7	0.9	0.9	0.6	1.0	0.8	0.7	1.3	1.8	1.9	2.2	1.9	2.4	1.6	1.2	-0.4
Don't know the names of some I have used	1.2	1.3	1.5	1.6	1.2	1.2	1.1	1.2	0.9	1.0	0.7	0.7	0.5	0.3	0.5	0.4	0.3	0.4	0.6	0.8	0.8	1.2	1.2	1.0	0.8	0.9	0.4	-0.5
Approx. Wtd. N =	2800	3000	3500	3100	3100	3400	3500	3200	3100	3100	3000	3200	3200	2700	2500	2500	2600	2600	2500	2500	2300	2500	2500	2200	2074	2053	2114	

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001.

‡ indicates some change in the question. See relevant footnote.

Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>These are the estimated prevalence of use rates for the entire population of seniors, not just those who answered that they had used the more general class of drugs.

<sup>b</sup>In 2001, the question asking about the prevalence of use of specific hallucinogens other than LSD was changed in several ways: (1) the wording of the screening question was changed from "psychedelics other than LSD" to "hallucinogens other than LSD"; (2) in the list of examples given in the screening question, "psilocybin" was expanded to "shrooms or psilocybin"; and (3) the specific question about "psilocybin" was expanded to "shrooms or psilocybin." The inclusion of the term "shrooms" elicited a higher reported level of use in response to both the general category and the specific drug psilocybin. This question change likely explains some of the discontinuity in the 2000–2001 results.

**TABLE E-2**  
**Specific Amphetamines: Trends in Annual Prevalence of Use for All Seniors<sup>a</sup>**

*What amphetamines have you taken during the last year without a doctor's orders?*

Percentage of ALL SENIORS using drug indicated in past year

	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990	Class of 1991	Class of 1992	Class of 1993	Class of 1994	Class of 1995	Class of 1996	Class of 1997	Class of 1998	Class of 1999	Class of 2000	Class of 2001	Class of 2002	Class of '01-'02 change
Benzedrine	3.5	4.1	3.7	3.1	3.2	3.6	2.9	1.6	1.7	1.9	1.4	1.1	0.5	0.7	0.6	0.1	0.2	0.3	0.6	0.2	0.3	0.2	0.3	0.3	0.2	0.3	0.6	+0.2
Dexedrine	2.9	3.5	3.7	4.0	4.0	5.1	2.8	1.4	1.6	1.2	0.9	0.6	0.4	0.6	0.5	0.3	0.2	0.2	0.5	0.4	0.3	0.9	0.6	0.6	0.6	0.8	1.0	+0.2
Methedrine	3.4	4.2	3.9	4.7	4.4	5.6	4.7	3.2	3.0	2.9	2.0	1.5	1.2	0.7	0.5	0.3	0.4	0.4	0.5	0.3	0.3	0.5	0.3	0.3	0.3	0.5	0.2	-0.3
Ritalin	0.5	0.7	0.6	0.4	0.6	0.7	0.5	0.3	0.3	0.4	0.3	0.3	0.3	0.4	0.5	0.1	0.1	0.4	1.0	0.8	1.2	2.8	2.8	2.4	2.2	2.4	2.6	+0.2
Preludin	0.6	1.0	1.1	1.3	1.1	1.7	0.8	0.6	0.5	0.4	0.3	0.1	0.2	0.3	0.1	0.1	0.1	0.1	0.3	0.1	0.5	0.2	0.3	0.2	*	0.2	0.1	-0.1
Dexamyl	1.3	1.5	1.1	1.3	1.3	1.1	1.2	0.6	0.9	0.6	0.8	0.5	0.4	0.3	0.2	0.1	0.2	0.3	0.5	0.2	0.4	0.3	0.4	0.2	0.2	0.5	0.2	-0.3
Methamphetamine	1.9	2.3	2.3	2.4	2.7	3.7	2.8	1.8	2.1	2.0	1.5	1.3	1.2	0.6	0.6	0.8	0.4	0.6	0.6	0.7	0.7	1.1	1.3	0.9	0.9	1.5	1.3	-0.2
Crystal meth. (Ice)	—	—	—	—	—	—	—	—	—	—	—	—	—	1.2	0.8	1.2	1.1	1.1	1.4	1.6	1.5	1.8	2.5	1.8	1.9	2.1	2.1	+0.1
Other	4.6	5.9	6.5	6.4	6.4	7.6	4.6	4.2	4.3	3.3	3.7	2.6	1.5	2.1	1.6	1.2	1.5	2.0	2.3	2.0	2.3	2.5	3.1	2.6	2.9	2.7	3.2	+0.5
Don't know the names of some amphetamines I have used	6.8	7.2	6.8	7.5	8.7	11.1	9.2	8.4	8.1	7.0	5.3	4.4	3.3	2.9	2.9	2.3	1.9	2.2	2.1	2.6	2.3	2.8	3.1	2.5	2.1	2.2	2.3	+0.2
	<i>Approx. Wtd. N = 2700 2900 3400 3100 3000 3400 3400 3200 3100 3100 3000 3200 3200 2700 2500 2500 2600 2600 2500 2500 2300 2500 2500 2200 2055 2049 2093</i>																											

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01., sss = .001.  
 '—' indicates data not available.  
 '\*' indicates less than .05 percent but greater than 0 percent.  
 Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>These are the estimated prevalence of use rates for the entire population of seniors, not just those who answered that they had used the more general class of drugs.



**TABLE E-3**  
**Specific Tranquilizers: Trends in Annual Prevalence of Use for All Seniors<sup>a</sup>**

What tranquilizers have you taken during the last year without a doctor's orders?	Percentage of ALL SENIORS using drug indicated in past year																												
	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990	Class of 1991	Class of 1992	Class of 1993	Class of 1994	Class of 1995	Class of 1996	Class of 1997	Class of 1998	Class of 1999	Class of 2000	Class of 2001	Class of 2002	'01-'02 change	
Librium	2.6	2.9	2.4	2.1	1.8	2.0	0.9	1.2	0.5	0.8	0.7	0.7	0.3	0.2	0.2	0.2	0.1	0.1	*	0.3	0.3	0.2	0.3	0.4	0.2	0.4	0.3	0.0	
Valium	5.3	6.9	6.0	5.9	5.3	5.5	3.5	3.2	2.9	3.5	2.8	2.9	2.2	1.7	1.6	1.2	1.6	1.6	1.6	1.3	1.5	2.0	2.0	2.7	2.6	2.8	2.8	0.0	
Miltown <sup>b</sup>	0.2	0.3	0.1	0.3	0.1	0.2	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.0	*	0.0	0.0	0.0	0.1	*	*	0.2	0.1	—	—	—	
Xanax	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.9	2.6	+0.7
Equanil	0.4	0.4	0.7	0.4	0.4	0.2	0.1	0.2	0.1	0.3	0.1	0.1	0.1	0.0	0.1	0.1	*	0.1	*	*	0.2	0.2	0.1	0.1	0.2	0.1	0.4	+0.3	
Meprobamate	0.6	0.2	0.4	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2	*	0.1	0.2	*	0.1	0.0	0.1	0.2	0.1	0.3	0.1	0.1	*	0.1	0.1	0.0	
Serax	0.2	0.2	0.1	0.2	0.1	0.2	*	0.1	0.2	0.1	0.2	0.1	0.0	0.1	0.2	0.0	0.2	*	*	*	0.2	0.2	0.1	0.2	0.1	0.1	0.1	-0.1	
Atarax	0.2	0.1	0.1	0.2	0.1	0.3	0.1	0.1	0.1	0.2	0.2	0.2	*	*	0.1	0.1	0.1	0.1	0.0	*	*	0.1	0.0	0.1	0.2	0.1	0.1	0.0	
Tranxene	0.2	0.3	0.3	0.5	0.3	0.2	0.2	0.3	0.2	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.2	*	*	0.1	0.1	0.1	0.1	0.3	0.1	0.1	0.1	-0.1	
Vistaril	0.1	0.2	0.4	0.3	0.3	0.3	0.1	0.1	0.2	0.4	0.2	0.1	0.0	*	0.3	0.0	*	*	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.3	0.3	-0.1	
Other	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.9	—	
Don't know the names of some tranquilizers I have used	3.0	2.7	2.7	1.9	2.3	1.6	1.3	1.7	1.4	1.7	2.0	1.3	0.9	1.0	1.5	1.1	0.7	1.3	0.9	1.1	1.3	1.5	1.5	1.4	1.4	1.9	1.2	-0.6	

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001.

'—' indicates data not available.

'\*' indicates less than .05 percent but greater than 0 percent.

Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>These are the estimated prevalence of use rates for the entire population of seniors, not just those who answered that they had used the more general class of drugs.

<sup>b</sup>In 2001 for the list of tranquilizers, Miltown was replaced with Xanax.

**TABLE E-4**  
**Specific Narcotics Other than Heroin: Trends in Annual Prevalence of Use for All Seniors<sup>a</sup>**

What narcotics other than heroin have you taken during the last year without a doctor's orders?	Percentage of ALL SENIORS using drug indicated in past year																												
	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990	Class of 1991	Class of 1992	Class of 1993	Class of 1994	Class of 1995	Class of 1996	Class of 1997	Class of 1998	Class of 1999	Class of 2000	Class of 2001	Class of 2002	'01-'02 change	
Methadone	0.6	0.4	0.9	0.9	0.8	0.7	0.4	0.6	0.5	0.5	0.5	0.3	0.1	*	0.5	*	0.3	0.2	0.1	0.1	*	0.4	0.3	0.8	0.7	0.7	0.9	+0.2	
Opium	2.7	2.4	2.6	3.0	2.8	2.4	1.6	1.2	1.5	1.4	1.5	1.3	0.9	0.9	0.7	0.8	0.5	0.4	0.6	1.0	1.1	1.8	2.0	1.7	2.1	2.1	2.1	0.0	
Morphine	0.6	0.8	0.7	0.8	1.0	1.1	0.7	0.8	0.8	0.9	0.7	0.4	0.6	0.2	0.7	0.4	0.4	0.2	0.3	0.3	0.6	1.0	1.0	1.2	1.2	1.4	1.5	+0.2	
Codeine	2.5	2.3	3.0	3.4	3.8	4.2	2.6	2.5	3.3	3.3	3.0	2.5	2.2	1.7	2.2	1.8	2.5	1.7	1.6	1.0	2.6	2.5	3.0	3.1	3.7	2.8	4.4	+1.6s	
Demerol	0.7	0.6	1.1	0.9	1.2	1.4	0.9	0.9	0.7	0.9	1.0	0.8	0.7	0.4	0.7	0.5	0.9	0.8	0.6	0.4	1.0	1.2	1.1	1.5	0.9	1.2	1.4	+0.2	
Paregoric <sup>b</sup>	0.4	0.3	0.3	0.2	0.4	0.2	0.1	0.3	0.1	0.1	0.1	0.1	*	0.1	0.1	0.1	0.2	0.0	*	0.1	*	0.0	0.0	*	0.0	0.1	—	—	
Talwin <sup>b</sup>	0.1	0.1	0.1	0.2	0.3	0.1	0.3	0.2	0.3	0.1	0.1	0.1	*	*	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	*	0.0	0.1	—	—	
Laudanum <sup>b</sup>	0.1	0.0	0.2	0.3	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1	*	*	0.1	0.0	*	*	*	0.1	*	0.1	0.0	0.1	0.1	*	—	—	
Vicodin	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.1	—
Oxycontin	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.6	—
Percocet	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.9	—
Percodan	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.6	—
Dilaudid	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.1	—
Other	0.5	0.5	1.4	0.8	0.7	0.6	0.5	0.6	0.4	0.6	0.5	0.4	0.4	0.5	0.5	0.2	0.5	0.3	0.6	0.3	0.7	0.6	1.2	1.6	1.4	0.9	1.6	+0.7	
Don't know the names of some I have used	1.1	1.0	0.6	0.9	0.8	0.6	0.7	0.3	0.6	0.6	0.4	0.3	0.5	0.2	0.5	0.3	0.1	0.5	0.4	0.3	0.4	0.5	0.8	0.6	0.6	0.5	0.7	+0.2	
<i>Approx. Wtd. N = 2700 2800 3400 3000 3000 3300 3400 3100 3000 3100 2900 3100 2600 2500 2400 2500 2600 2500 2400 2300 2400 2400 2200 1994 1998 2059</i>																													

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001.  
 '—' indicates data not available.

\* indicates less than .05 percent but greater than 0 percent.

Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.

SOURCE: The Monitoring the Future Study, the University of Michigan.

<sup>a</sup>These are the estimated prevalence of use rates for the entire population of seniors, not just those who answered that they had used the more general class of drugs.

<sup>b</sup>In 2002 for the list of narcotics other than heroin, paregoric, Talwin, and laudanum were replaced with Vicodin, Oxycontin, Percocet, Percodan, and Dilaudid.

**Study web site address:**  
**<http://www.monitoringthefuture.org>**