Chapter 13
Patterns of Tobacco Use Among U.S. Youth, Young Adults, and Adults

Introduction

In the United States, the widespread use of tobacco began more than a century ago, and the epidemic of tobacco-caused diseases and premature mortality associated with tobacco use has continued to the present day. The purpose of the current chapter is to document key patterns and trends in tobacco use in the United States among youth (12–17 years of age), young adults (18–25 years of age), and adults age 26 years of age or older. The chapter indicates overall progress in the United States, but describes the persistence of a high prevalence of tobacco use among segments of the population. Historically, reports of the Surgeon General have focused almost exclusively on cigarette smoking, but the shifting patterns of tobacco use have necessitated the consideration of other products, both those that are noncombustible and others that deliver nicotine. Accordingly, this chapter includes critical information about cigars and smokeless tobacco, and it highlights changing patterns of tobacco use. Information about new and emerging products, such as e-cigarettes, is also included. Clearly, the effective characterization of key patterns and trends in tobacco use is critical to the development and maintenance of programs designed to reduce the burden of tobacco-caused morbidity and mortality.

Data Sources

In the United States, a variety of national surveillance systems collect tobacco-specific data for youth, young adults, and adults. These systems typically assess behaviors related to cigarette smoking and, sometimes, the use of other tobacco products; some also collect information on important aspects of tobacco use (e.g., quit attempts). These surveys have differing methods and provide comparable, but not identical, measures of tobacco use. Because each survey provides unique information, monitoring the results of all of them is necessary to fully understand behaviors and trends. The principal surveys used in this chapter are described in Appendix 13.1, and additional information about data sources for adolescents is available in the 2012 Surgeon General's report, *Preventing Tobacco Use Among Youth and Young Adults* (U.S. Department of Health and Human Services [USDHHS] 2012). For this chapter, specific national surveillance systems were selected to serve as primary data sources based on the salience of their content, the timeliness of their data, the completeness with which they cover the populations they are intended to represent, and the strength of their methodology.

In this chapter, cross-sectional data are presented from three national surveillance systems: Youth Risk Behavior Surveillance System (YRBSS), National Survey on Drug Use and Health (NSDUH), and National Health Interview Survey (NHIS). Each of these population-based systems uses anonymous or confidential self-reported surveys to gather data. Generally, self-reported data are considered to be sufficiently accurate for tracking the general pattern of tobacco use in populations (Brener et al. 2003; USDHHS 2004). Table 13.1 and Appendix 13.1 describe the three data sources in detail, and Appendix 13.2 defines the survey items and terms used in the present report.

YRBSS includes both state and local surveys and a national survey. The National Youth Risk Behavior Survey (YRBS) uses probability samples of public and private high school students who fill out questionnaires administered anonymously in schools. This survey is representative of the U.S. high school population. National YRBS data are available from 1991–2011 and are used in this report to illustrate trends over time. In contrast to YRBS, NSDUH, which is conducted under the direction of the federal Substance Abuse and Mental Health Services Administration (SAMHSA) employs household-based sampling, which is designed to represent the entire civilian, noninstitutionalized population of the United States from 12 years of age and older. A major strength of NSDUH is that the national sample is allocated equally across three age-specific population groups that were defined earlier in this chapter: youth, young adults, and adults. In addition, NSDUH includes youth who have dropped out of school or are frequently absent, which are two groups more likely to smoke. NSDUH is the only national surveillance system that has a wide repertoire of tobacco-use measures that can be compared across the three priority populations. Questionnaires for NSDUH are completed confidentially in the home with audio computer-assisted self-interviewing so that only the respondent is aware of the questions being asked. Unless otherwise indicated, all NSDUH data presented in this chapter are from the 2012 survey. Last, NHIS, which has been a primary source of health data on the U.S. adult population since the 1950s, is an annual cross-sectional household interview survey of the adult (18

Table 13.1   Sources of national survey data on tobacco use, United States

	NSDUH	National YRBS	NHIS
Sponsoring agency or organization	SAMHSA	CDC	CDC
Type of survey	Cross-sectional	Cross-sectional	Cross-sectional
Years	2012	1991, 1993, 1995, 1997, 1999, 2001, 2003, 2005, 2007, 2009, and 2011	1965–2012 (various years)
Mode of survey administration	Audio computer-assisted self-administered personal interview	School-based, self-administered questionnaire	Computer-assisted personal interview
Response rate	2012: 86.1% for household screening; 73.0% for interviewing	2011: 81% for schools; 87% for students; 71% overall	2010: 60.8% for household adults 2012: 61.2% for household adults
Sample size	2012: 68,309 persons ≥12 years of age, including 45,836 adults ≥18 years of age	2011: 15,425 9th–12th grade students	2010: 27,157 adults ≥18 years of age 2012: 34,525 adults ≥18 years of age
Type of tobacco use examined	Cigarettes, smokeless tobacco (chewing tobacco, snuff), cigars, and pipe tobacco	Cigarettes, smokeless tobacco, and cigars	Cigarettes (annually), smokeless tobacco, and cigars (selected years)

Note: **CDC** = Centers for Disease Control and Prevention; **NHIS** = National Health Interview Survey; **NSDUH** = National Survey on Drug Use and Health; **SAMHSA** = Substance Abuse and Mental Health Services Administration; **YRBS** = National Youth Risk Behavior Survey.

years of age and older) U.S. civilian noninstitutionalized population. NHIS data on tobacco use are available for the period 1965–2011 and are used in this report to illustrate trends over time. In addition, data from NHIS were pooled into a combined dataset and analyzed to obtain estimates of changes in the patterns of use of cigarettes over time by gender, calendar year, and birth cohorts from 1890–1990 (Holford et al. in press).

Key Epidemiologic Measures

This chapter covers a variety of epidemiologic measures, including the age when cigarette smoking begins, current prevalence of daily and intermittent cigarette smoking, indicators of smoking cessation, current prevalence of smokeless tobacco use and cigar smoking, and current prevalence of polytobacco use (i.e., the use of multiple tobacco products). Data from the survey or surveys best suited to address the issue were selected for presentation in the text and accompanying tables and figures. The most recent estimates (i.e., those for 2012) use data from NSDUH, while estimates of cessation indicators rely on data from NHIS. Trends over time among youth are based on data from the National YRBS, and trends over time among adults use data from NHIS. These trends are presented both as annual cross-sectional survey results and as pooled data across birth cohorts from annual surveys.

Historical Trends in Tobacco Use

Trends in Tobacco Use Consumption: 1900–2011

Numerous Surgeon General's reports have reviewed patterns of tobacco use in the twentieth century (USDHHS 1989, 1994, 1998, 2000, 2012). In the earliest decade of the last century, Americans consumed tobacco primarily in the form of chewing tobacco and cigars, but cigarette use grew rapidly after that period, increasing sharply between the 1910s and the mid-1960s, first in men and then in women (Figure 13.1) (USDHHS 2000). Additionally, during this period, tobacco users shifted away from chewing tobacco, inhaling snuff, and smoking cigars and pipes (USDHHS 2000; Giovino 2002) to the smoking of cigarettes. Although cigarette consumption has been declining since the mid-1960s, cigarettes remain by far the most commonly used tobacco product in the United States. In the context of declining cigarette consumption, however, the consumption of moist snuff, cigars, and pipe/roll-your-own tobacco slightly increased during the first decade of the twenty-first century (Figure 13.2).

Changing Patterns in the Consumption of Tobacco Products Other Than Cigarettes, by Type

The increase in use of roll-your-own/pipe tobacco has largely been attributed to cigarette smokers seeking less expensive cigarettes (Stehr 2005). In fact, roll-your-own cigarettes are typically less expensive than factory-made cigarettes, and loose tobacco for roll-your-own cigarettes is often taxed at a lower rate than manufactured cigarettes at both the federal and state levels (Morris and Tynan 2012; Young et al. 2012).

Smokeless Tobacco

After decades of limited use of smokeless tobacco, consumption rose between 1970 and the mid-1980s because of aggressive marketing to youth and young adult males (National Cancer Institute [NCI] 1992; USDHHS 2000, 2012). From the mid-1980s to 2000, the overall consumption of smokeless tobacco (i.e., chew and moist

Figure 13.1   Per capita consumption of different forms of tobacco in the United States, 1880–2011
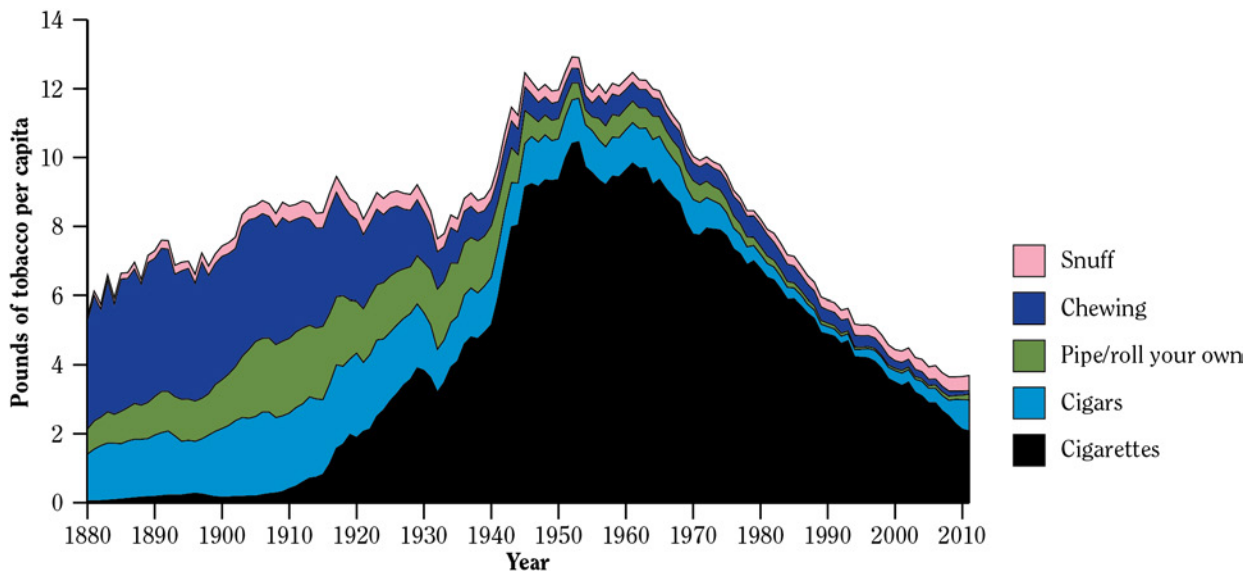
Source: U.S. Department of Treasury 2012.

Figure 13.2   Per capita consumption of noncigarette products in the United States, 1970–2011
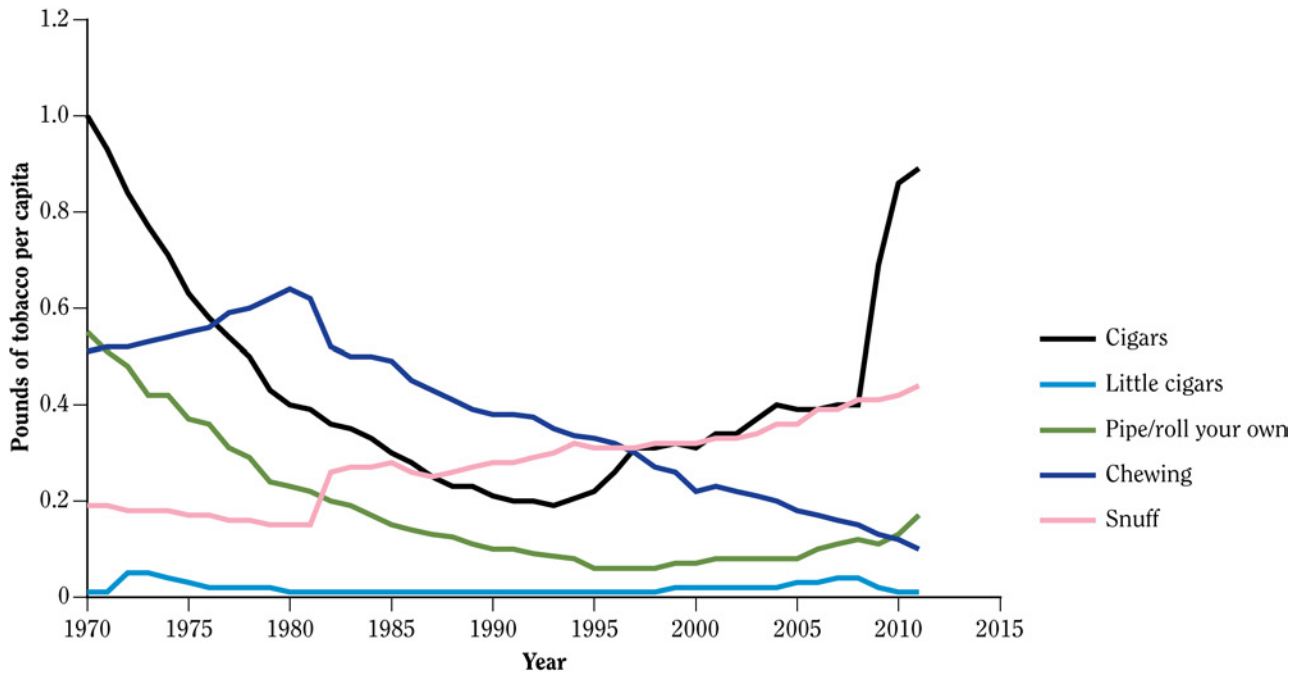
Source: U.S. Department of Treasury 2012.
Note: A "little cigar" is defined in the *Federal Cigarette Labeling and Advertising Act of 1965* as "any roll of tobacco wrapped in leaf tobacco or any substance containing tobacco (other than any roll of tobacco which is a cigarette within the meaning of subsection (1)) and as to which one thousand units weigh not more than three pounds."

snuff) declined. Although consumption of moist snuff increased rapidly between 1990 and 2011, decreases in chewing tobacco since the mid-1980s produced a net negative effect in the smokeless tobacco consumed until 2000 when growth in consumption of moist snuff contributed to a net increase in smokeless tobacco. This resulted in a consistent growth in total consumption of smokeless tobacco since 2004. The growth in moist snuff use came as both Reynolds American, Inc. and Altria Group, Inc., purchased the major smokeless tobacco companies in the United States (Conwood and U.S. Smokeless Tobacco Company, respectively) and launched smokeless tobacco products under the brand names of cigarettes (e.g., Camel Snus and Marlboro Snus) between 2006–2010. Factors found to contribute to the continued growth of moist snuff use include increased tobacco company expenditures to promote moist snuff use (Federal Trade Commission 2012), the initiation of snuff use among cigarette smokers (current or former) in the face of increasing cigarette prices and smoking bans, as well as the use of

targeted marketing (Ohsfeldt et al. 1997; Delnevo et al. 2012). Indeed, advertising for some moist snuff products, often cobranded with cigarette names, has consistently included messages aimed explicitly at smokers and has positioned the products as modern and acceptable tobacco alternatives to use in places where smoking is banned or otherwise inconvenient (Delnevo et al. 2012).

Cigars

Cigars were a common form of tobacco use for much of the twentieth century, but after peaking around 1950, per capita consumption has shrunk dramatically (Figure 13.1). This measure reached its lowest level in 1993, but since then per capita consumption has more than tripled (U.S. Department of Agriculture 2007; U.S. Department of Treasury 2012). The increase in cigar consumption in the mid-1990s was attributed to large cigars, but as shown in Figure 13.3, which presents per capita consumption in "sticks" rather than pounds of tobacco (as shown in Figures 13.1 and 13.2), the rapid increase in the 2000s

up to 2008 was primarily attributable to the consumption of small cigars, which resemble cigarettes (Delnevo 2006). Traditionally, cigar smoking in the United States was a behavior of older men (NCI 1998), but the industry's increased marketing of cigars to targeted groups such as youth, young adults, and women (NCI 1998) reversed the low rates of use typically seen among these groups. By the early 2000s, some surveys suggested that the cigar boom was over (Gilpin and Pierce 2001; Nyman et al. 2002), but consumption more than doubled from 2000–2012 (U.S. Department of Treasury 2012). In 2009, the reauthorization of the State Children's Health Insurance Program included an increase in the federal excise tax on various tobacco products, and while the new law closed some loopholes by equalizing the tax on little cigars with cigarettes, it created other exceptions that the tobacco industry was quick to exploit. Around that time, the industry slightly increased the weight of some of its cigar products, shifting them from the "little cigar" into the more favorable "cigar" category (over 3 pounds per 1,000 cigars) for tax classification purposes. This shift allowed for a lower retail price and the presentation of a new product on the market, the "filtered cigar," which is slightly larger than the little cigar but is taxed as a large cigar (U.S. Department of Treasury 2012). Consumption of little cigars dropped significantly in 2009, but the total consumption of cigars continued to increase annually (Figure 13.3).

Figure 13.3   Cigar consumption in the United States, 2000–2012
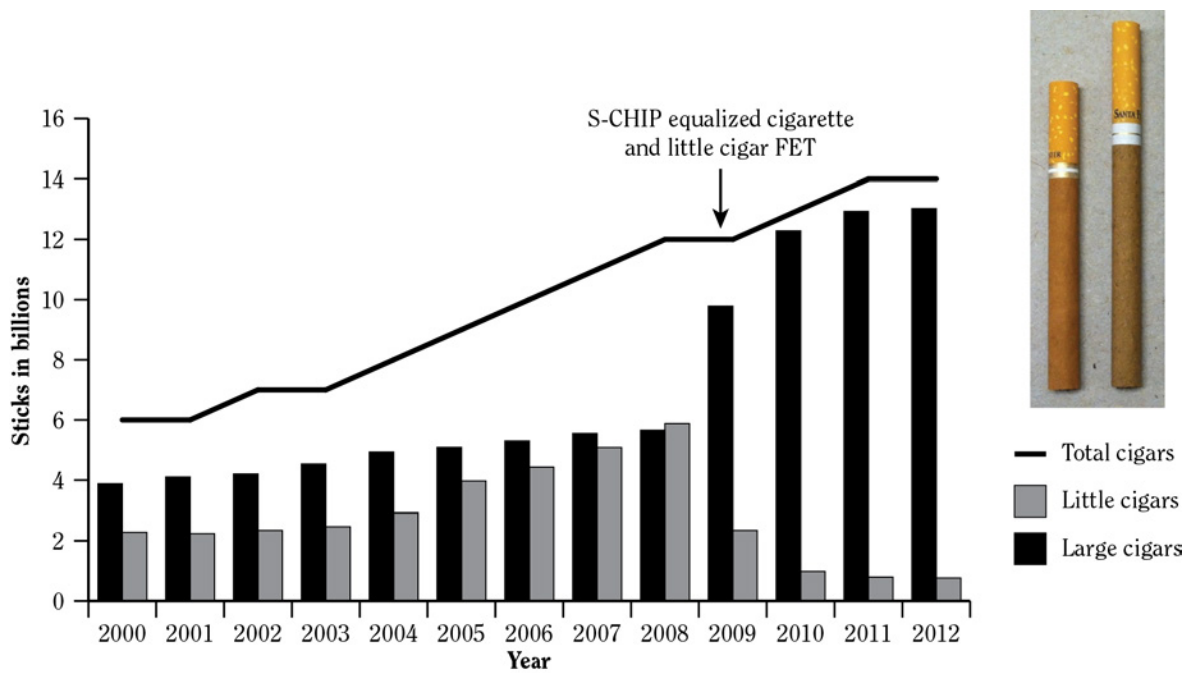
Source: U.S. Department of Treasury 2012.
Note: A "little cigar" is defined in the *Federal Cigarette Labeling and Advertising Act of 1965* as "any roll of tobacco wrapped in leaf tobacco or any substance containing tobacco (other than any roll of tobacco which is a cigarette within the meaning of subsection (1)) and as to which one thousand units weigh not more than three pounds." **FET** = federal excise tax; **S-CHIP** = State Children's Health Insurance Program.

Cigarette Smoking

Age When Smoking Begins

One of the most important—and widely cited—findings from the 1994 and 2012 Surgeon General's reports on smoking and health was that virtually all cigarette smoking begins before 18 years of age (USDHHS 1994, 2012). An examination of the birth cohort data indicates that, historically speaking, this is true for males born after 1950 and for females born after 1960. Table 13.2, which uses 2012 NSDUH data in an analysis parallel to that conducted for the 1994 and 2012 Surgeon General's reports, further illustrates and updates this finding. In the 2012 NSDUH, adult smokers 30–39 years of age were asked about their first experience with cigarette smoking. Among adults who had ever smoked cigarettes daily, the mean age (in years) of smoking initiation was 15.3, and the mean age of beginning to smoke daily was 18.2. Among adults who had ever smoked cigarettes daily, 86.9% had tried their first cigarette by the time they were 18 years of age, while an additional 11.5% did so by 26 years of age. About two-thirds (64.3%) of adults who had ever smoked daily began to do so by 18 years of age, and almost one-third of adults who had ever smoked (22.7%) began to smoke daily between 18–26 years of age. Virtually no initiation of cigarette smoking (<1.5%) and few transitions to daily smoking (<4.3%) actually occurred in adulthood—that is, after 26 years of age. Of note, initiation of cigarette smoking often occurred early in adolescence (before 18 years of age); 13.6% of adults who had ever smoked daily began smoking by age 14, before entering high school.

Current Prevalence of Smoking

Current cigarette smoking is the measure most commonly used to describe the prevalence of cigarette smoking, but surveillance systems offer different definitions of current smoking (Delnevo and Bauer 2009). NHIS defines current smoking among adults as having smoked at least 100 cigarettes during one's lifetime and smoking every day or some days. NSDUH defines current smoking for youth, young adults, and adults as having smoked part or all of a cigarette during the past 30 days. Thus, SAMHSA does not use 100 lifetime cigarettes as a threshold when making estimates of the prevalence of current cigarette smoking from NSDUH data. This chapter continues to use the criterion of smoking part or all of a cigarette during the past 30 days for youth and young adults. To facilitate

Table 13.2 Cumulative percentages of recalled age at which a respondent who had ever smoked daily first used a cigarette and began smoking daily,[a] by smoking status among adults (30–39 years of age); National Survey on Drug Use and Health 2012; United States

	Persons who had ever smoked daily	
Recalled age (years)	First tried a cigarette % (95% CI)	Began smoking daily % (95% CI)
≤10	7.2 (6.01–8.54)	1.2 (0.78–1.83)
≤11	10.4 (8.93–11.99)	2.3 (1.63–3.21)
≤12	19.1 (17.33–21.10)	4.6 (3.70–5.72)
≤13	29.6 (27.43–31.95)	8.6 (7.37–9.97)
≤14	42.5 (40.07–44.91)	13.6 (12.06–15.22)
≤15	58.0 (55.48–60.52)	23.3 (21.12–25.53)
≤16	70.3 (67.96–72.61)	36.4 (33.98–38.88)
≤17	77.3 (75.08–79.31)	47.9 (45.44–50.43)
≤18	86.9 (85.09–88.58)	64.3 (61.79–66.80)
≤19	90.3 (88.68–91.76)	72.2 (69.75–74.48)
≤20	93.3 (91.97–94.41)	79.2 (76.99–81.16)
≤21	95.3 (94.10–96.27)	83.6 (81.58–85.48)
≤22	96.2 (95.01–97.04)	86.7 (84.79–88.40)
≤23	96.8 (95.67–97.59)	88.7 (86.83–90.30)
≤24	97.4 (96.33–98.11)	90.3 (88.49–91.78)
≤25	98.1 (97.16–98.75)	93.3 (91.74–94.53)
≤26	98.4 (97.46–99.00)	94.9 (93.49–95.96)
≤27	99.0 (98.24–99.43)	95.6 (94.31–96.65)
≤28	99.4 (98.85–99.69)	96.3 (95.00–97.21)
≤29	99.5 (98.92–99.75)	97.2 (96.09–98.03)
≤30	99.9 (99.64–99.96)	99.2 (98.58–99.50)
≤31–39	100.0	100.0
Mean age (years)	15.3	18.2

Source: 2012 NSDUH: Substance Abuse and Mental Health Services Administration.
Note: **CI** = confidence interval.
[a]Based on responses to the following questions: "Have you ever smoked part or all of a cigarette?" "How old were you the first time you smoked part or all of a cigarette?" "Has there ever been a period in your life when you smoked cigarettes every day for at least 30 days?" "How old were you when you first started smoking cigarettes every day?"

comparisons with NHIS, however, data in selected tables on all adults (18 years of age or older) incorporate the 100-cigarette threshold, as noted in the footnotes. Last, YRBSS defines current smoking for students as smoking on at least 1 day during the 30 days before the survey, but it does not require current smokers to have smoked at least 100 cigarettes in their lifetime (see Appendix 13.2).

Adolescents and Young Adults

According to the 2012 NSDUH survey, the prevalence of current cigarette smoking among youth 12–17 years of age (Table 13.3) was 6.6% and was similar among males (6.8%) and females (6.3%). By race or ethnicity, the prevalence was highest among White youth (8.2%). Current cigarette smoking increased with age among youth, with a rate of 1.2% for the youngest group (12–13 years of age) and 13.6% for the oldest (16–17 years of age). A higher prevalence of smoking was noted among youth living below the poverty level (7.6%) than in those living at or above this threshold (6.2%). Last, the prevalence was highest in the Midwest and South.

Of the three age groups of interest in this chapter, young adults 18–25 years of age had the highest prevalence of current cigarette smoking (31.8% for this group vs. 6.6% for youth) (Table 13.3). Among young adults, prevalence was higher for males (36.6%) than for females (27.1%), and this pattern held for all racial/ethnic groups. Also among young adults, Whites had the highest prevalence of current smoking (36.6%), followed by Blacks (26.2%) and Hispanics (25.0%). When gender and race/ethnicity among young adults are combined, White males had the highest prevalence (40.6%) and Hispanic females the lowest (18.6%). Prevalence also varied by region, with the rate highest in the Midwest and lowest in the West. Although there was little variation in prevalence by age among young adults, the increase in prevalence from the oldest group among young people (16–17 years of age) to the youngest group among young adults (18–20 years of age) was dramatic—from 13.6% to 28.2%. Through its advertising and promotional campaigns, the tobacco industry markets heavily to its youngest legal target: young adults (Katz and Lavack 2002; Ling and Glantz 2002; Biener and Albers 2004); at 18 years of age, the purchase of cigarettes is legal in most states in the United States.

Adults

The 2012 prevalence of current cigarette smoking for all adults (i.e., those 18 years of age or older) was 22.0% according to NSDUH (Table 13.4). This estimate is higher than the 18.1% reported using NHIS in 2012 (Figure 13.4). Factors contributing to this difference and other differences between the two surveys are discussed in Appendix 13.2. Per the 2012 NSDUH, adult males had a higher prevalence (24.8%) of current smoking than adult females (19.3%). By race/ethnicity, prevalence was highest among American Indians/Alaska Natives, at 38.5%. The prevalence was similar for Whites (23.9%) and Blacks (22.6%) and lowest among Hispanics (15.2%) and Asians (8.3%). Males had a higher prevalence than females for all racial/ethnic groups other than American Indians/Alaska Natives for whom data are lacking. The differential by gender was most pronounced among Asians, where the ratio was about 3 (males) to 1 (female).

As noted earlier, the measurements of the prevalence of adult smoking for NSDUH are based on smoking at least 100 cigarettes in a lifetime (plus smoking in the last 30 days); the difference between this standard and the NSDUH standard for young adults (smoked all or part of a cigarette in the past 30 days) explains the differences for adults 18–25 years of age between Table 13.3 and Table 13.4.

Adults 18–25 and 26–44 years of age had the highest prevalence estimates for current smoking, 24.6% and 27.3%, respectively. The prevalence of smoking then declined with age. Current cigarette smoking and the level of education were inversely associated. In 2012, 10.4% of those with at least a college degree were current cigarette smokers, compared with 31.5% of those who had less than a high school education. Lastly, the prevalence of current smoking was higher among those living below the poverty line (32.5%) than among those living at or above the poverty line (20.0%).

Daily Versus Intermittent Smoking

Research suggests that as many as one-fifth of current smokers do not smoke on a daily basis (Trinidad et al. 2009); moreover, the frequency of daily use varies considerably between youth, young adults, and adults. This section examines patterns of daily smoking among youth, young adult, and adult current smokers and also presents the prevalence of intermittent and daily smoking for adults. NSDUH defines daily cigarette smoking as smoking on all 30 days of the previous month. Intermittent smoking is defined as smoking in the past month, but not daily, among current smokers.

Figure 13.4   Trends in prevalence (%) of current cigarette smoking among adults, 18 years of age and older, by gender; National Health Interview Survey (NHIS) 1965–2012; United States
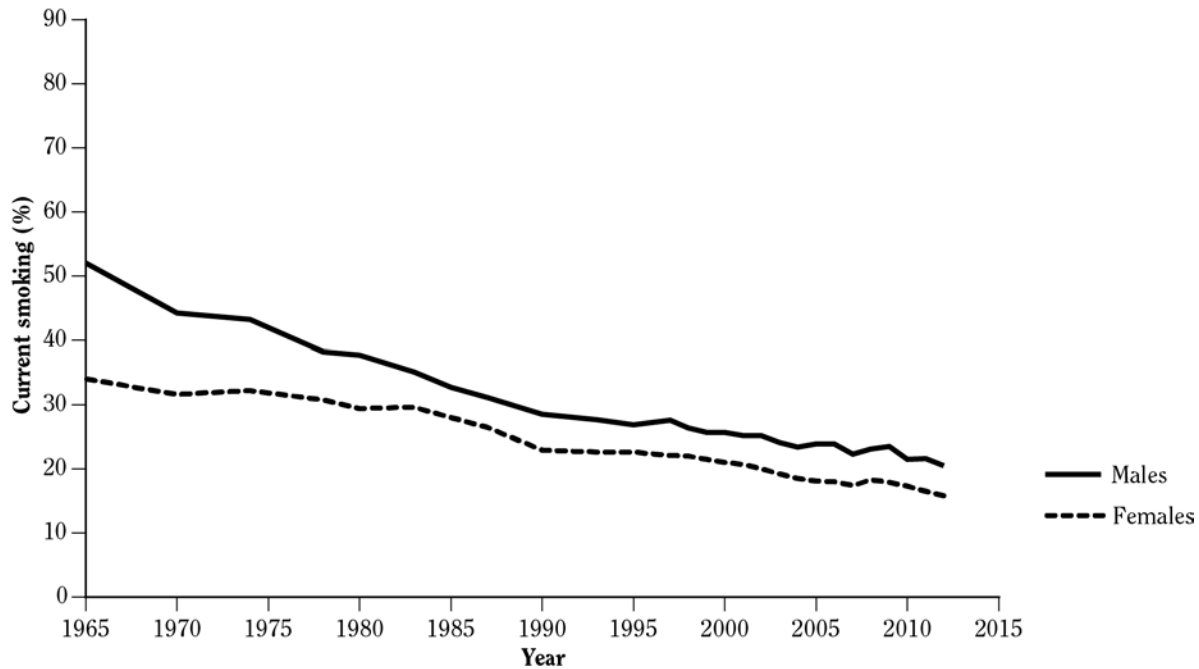
Source: 1965–2012 NHIS, National Center for Health Statistics, public use data tapes.

Adolescents and Young Adults

Table 13.5 presents the prevalence of daily smoking among 12- to 17-year-olds who had smoked cigarettes during the previous month. Overall, 22.0% of youth cigarette smokers were daily smokers. As a percentage, daily smoking among youth smokers was not significantly different between males and females; however, it was more common among Whites than Blacks or Hispanics. The prevalence of daily smoking increased with greater age. By region, the prevalence of daily smoking did not vary significantly by region.

For all variables on which comparisons can be made, the prevalence of daily smoking among past-month smokers was higher for young adults (18–25 years of age) than for youth (12–17 years of age) (Table 13.5). Overall, 45.1% of young adult smokers were daily smokers. Females had a higher rate than males, and as among youth, the highest rate by race/ethnicity was among Whites (52.8%). Daily smoking increased with age, with the rate rising from 37.3% for those 18–20 years of age to 51.9% for the 24–25 years of age group. Regionally, the highest rate was observed in the Midwest and the lowest in the West.

Adults

In 2012, an estimated 61.9% of adult current cigarette smokers were daily smokers; conversely, 38.1% had smoked only on some days during the previous month (Table 13.6). Daily smoking was higher for females (64.9%) than males (59.3%). By race/ethnicity, Whites had the highest rate of daily smoking (68.6%). Notably, lower rates of daily smoking were found among Asians, Blacks, and Hispanics. In general, daily smoking was inversely related to educational status. Current smokers living at or above the poverty line had a higher rate of daily smoking (62.6%) than those below the poverty line (60.4%). By region, the highest rates of daily smoking were observed in the Midwest (68.3%).

In contrast to the data reported above showing that female smokers had a higher prevalence of daily smoking than males when female and male current smokers were used for the corresponding denominators, the prevalence of daily smoking in 2012 was higher among males (15.8%) than females (13.7%) (Table 13.7). This is because adult males had a higher prevalence of current smoking than adult females (26.7% vs. 21.1%).

Table 13.3 **Prevalence of current cigarette smoking[a] among young people, by selected characteristics; National Survey on Drug Use and Health (NSDUH) 2012; United States**

Characteristic	12–17 years of age % (95% CI)	18–25 years of age % (95% CI)
Overall	6.6 (6.1–7.0)	31.8 (30.9–32.7)
Gender		
Male	6.8 (6.2–7.4)	36.6 (35.3–37.9)
Female	6.3 (5.8–6.9)	27.1 (25.9–28.2)
Race/ethnicity		
White, non-Hispanic	8.2 (7.6–8.8)	36.6 (35.4–37.8)
Male	8.3 (7.5–9.2)	40.6 (38.9–42.2)
Female	8.1 (7.3–9.0)	32.5 (30.9–34.2)
Black or African American, non-Hispanic	4.1 (3.2–5.1)	26.2 (24.1–28.4)
Male	4.8 (3.6–6.3)	30.9 (27.8–34.3)
Female	3.3 (2.2–4.9)	21.9 (19.1–24.9)
Hispanic or Latino	4.8 (4.0–5.8)	25.0 (23.1–27.0)
Male	5.2 (4.1–6.6)	30.9 (27.9–34.1)
Female	4.4 (3.5–5.6)	18.6 (16.5–20.9)
Other[b]	4.5 (3.5–5.8)	26.4 (23.3–29.7)
Male	4.4 (3.0–6.4)	33.1 (28.3–38.3)
Female	4.7 (3.4–6.4)	20.0 (16.6–23.9)
Age (in years)		
12–13	1.2 (0.9–1.5)	NA
14–15	4.6 (4.1–5.2)	NA
16–17	13.6 (12.6–14.6)	NA
18–20	NA	28.2 (26.8–29.7)
21–23	NA	33.8 (32.4–35.3)
24–25	NA	34.5 (32.7–36.2)
Poverty status		
At or above poverty level	6.2 (5.8–6.7)	31.3 (30.2–32.3)
Below poverty level	7.6 (6.7–8.7)	34.3 (32.5–36.0)
Unknown[c]	NA	22.1 (15.9–29.8)
Region		
Northeast	5.7 (5.0–6.5)	31.7 (29.7–33.8)
Midwest	7.8 (7.0–8.6)	35.6 (33.8–37.5)
South	7.2 (6.4–8.0)	32.4 (30.9–33.8)
West	5.1 (4.3–6.0)	27.7 (25.8–29.7)

Source: 2012 NSDUH: Substance Abuse and Mental Health Services Administration.

Note: **CI** = confidence interval; **NA** = not applicable.

[a]Based on responses to the question "During the past 30 days, have you smoked part or all of a cigarette?" Respondents who chose "Yes" were classified as current smokers.

[b]Includes Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and persons of 2 or more races.

[c]Respondents 18–22 years of age currently living in a college dormitory were included in the Unknown category.

Table 13.4 Prevalence of current cigarette smoking[a] among adults 18 years of age and older, by selected characteristics; National Survey on Drug Use and Health (NSDUH) 2012; United States

Characteristic	Male % (95% CI)	Female % (95% CI)	Total % (95% CI)
Total	24.8 (23.9–25.7)	19.3 (18.5–20.2)	22.0 (21.3–22.6)
Race/ethnicity			
White, non-Hispanic	25.6 (24.5–26.8)	22.2 (21.1–23.3)	23.9 (23.0–24.7)
Black, non-Hispanic	28.9 (25.9–32.0)	17.4 (15.2–19.8)	22.6 (20.6–24.6)
Hispanic	19.2 (17.1–21.6)	11.2 (9.7–12.9)	15.2 (13.8–16.7)
American Indian/Alaska Native, non-Hispanic	—[b]	—[b]	38.5 (30.6–47.2)
Asian, non-Hispanic	13.1 (9.3–18.2)	4.3 (2.8–6.4)	8.3 (6.3–10.9)
Education			
Less than high school	36.2 (33.4–39.1)	26.5 (24.0–29.1)	31.5 (29.5–33.5)
High school graduate	31.3 (29.5–33.1)	23.6 (22.1–25.3)	27.4 (26.2–28.6)
Some college	25.9 (24.1–27.8)	21.4 (19.9–22.9)	23.4 (22.2–24.7)
College graduate	11.1 (9.8–12.5)	9.7 (8.6–10.9)	10.4 (9.5–11.3)
Age group (years)			
18–25	28.4 (27.1–29.6)	20.7 (19.7–21.8)	24.6 (23.7–25.5)
26–44	31.6 (30.0–33.1)	23.2 (21.9–24.5)	27.3 (26.2–28.4)
45–64	23.7 (21.9–25.7)	20.8 (19.2–22.4)	22.2 (20.9–23.5)
≥65	9.9 (7.9–12.3)	9.4 (7.7–11.4)	9.6 (8.3–11.2)
Poverty status			
At or above poverty level	22.9 (21.9–23.8)	17.3 (16.4–18.2)	20.0 (19.3–20.8)
Below poverty level	37.8 (35.1–40.6)	28.9 (26.8–31.0)	32.5 (30.8–34.3)
Unknown[c]	8.9 (5.2–14.8)	6.1 (3.9–9.4)	7.5 (5.0–11.1)
Region			
Northeast	23.2 (21.1–25.3)	18.3 (16.6–20.0)	20.6 (19.3–22.0)
Midwest	26.5 (24.9–28.2)	23.7 (22.1–25.4)	25.1 (23.8–26.4)
South	26.2 (24.6–27.9)	19.8 (18.4–21.3)	22.9 (21.7–24.0)
West	22.2 (20.1–24.4)	15.4 (13.7–17.1)	18.7 (17.3–20.2)

Source: 2012 NSDUH: Substance Abuse and Mental Health Services Administration.

Note: **CI** = confidence interval.

[a]Current smoking is defined as smoking in the 30 days preceding the survey and having used 100 cigarettes or more in lifetime. Respondents with unknown lifetime number of cigarettes consumed were excluded from the analysis.

[b]Low precision; no estimate reported.

[c]Respondents 18–22 years of age currently living in a college dormitory are included in the Unknown category.

Table 13.5 Prevalence of intermittent[a] and daily[b] cigarette smoking among young people who are past-month cigarette users[c], by selected characteristics; National Survey on Drug Use and Health (NSDUH) 2012; United States

Characteristic	12–17 years of age		18–25 years of age	
	Intermittent[a] % (95% CI)	Daily[b] % (95% CI)	Intermittent[a] % (95% CI)	Daily[b] % (95% CI)
Overall	78.0 (75.3–80.5)	22.0 (19.5–24.7)	54.9 (53.1–56.6)	45.1 (43.4–46.9)
Gender				
Male	79.0 (75.2–82.4)	21.0 (17.6–24.8)	57.4 (55.2–59.5)	42.6 (40.5–44.8)
Female	76.9 (72.9–80.4)	23.1 (19.6–27.1)	51.5 (49.0–53.9)	48.5 (46.1–51.0)
Race/ethnicity				
White, non-Hispanic	74.3 (71.1–77.3)	25.7 (22.7–28.9)	47.2 (45.1–49.2)	52.8 (50.8–54.9)
Male	76.1 (71.5–80.1)	23.9 (19.9–28.5)	48.9 (46.2–51.6)	51.1 (48.4–53.8)
Female	72.4 (67.3–77.0)	27.6 (23.0–32.7)	45.0 (42.1–47.9)	55.0 (52.1–57.9)
Black or African American, non-Hispanic	86.7 (77.3–92.6)	13.3 (7.4–22.7)	65.5 (61.3–69.5)	34.5 (30.5–38.7)
Male	—[d]	—[d]	66.8 (61.5–71.7)	33.2 (28.3–38.5)
Female	—[d]	—[d]	63.9 (56.5–70.6)	36.1 (29.4–43.5)
Hispanic or Latino	86.7 (79.2–91.8)	13.3 (8.2–20.8)	75.9 (72.0–79.5)	24.1 (20.5–28.0)
Male	—[d]	—[d]	80.9 (76.6–84.5)	19.1 (15.5–23.4)
Female	89.1 (79.6–94.4)	10.9 (5.6–20.4)	67.2 (60.6–73.1)	32.8 (26.9–39.4)
Other[e]	84.3 (74.9–90.6)	15.7 (9.4–25.1)	59.9 (52.5–66.8)	40.1 (33.2–47.5)
Male	—[d]	—[d]	58.0 (49.3–66.2)	42.0 (33.8–50.7)
Female	—[d]	—[d]	62.7 (52.7–71.8)	37.3 (28.2–47.3)
Age (in years)				
12–13	—[d]	—[d]	NA	NA
14–15	86.8 (82.6–90.0)	13.2 (10.0–17.4)	NA	NA
16–17	74.1 (70.5–77.3)	25.9 (22.7–29.5)	NA	NA
18–20	NA	NA	62.7 (60.0–65.4)	37.3 (34.6–40.0)
21–23	NA	NA	52.5 (49.9–55.1)	47.5 (44.9–50.1)
24–25	NA	NA	48.1 (45.1–51.1)	51.9 (48.9–54.9)
Poverty status				
At or above poverty level	78.1 (74.9–81.0)	21.9 (19.0–25.1)	53.6 (51.7–55.5)	46.4 (44.5–48.3)
Below poverty level	77.7 (72.2–82.4)	22.3 (17.6–27.8)	55.5 (52.1–58.9)	44.5 (41.1–47.9)
Unknown[f]	NA	NA	89.4 (84.3–93.0)	10.6 (7.0–15.7)
Region				
Northeast	75.5 (68.3–81.6)	24.5 (18.4–31.7)	55.1 (51.1–59.0)	44.9 (41.0–48.9)
Midwest	76.3 (71.6–80.4)	23.7 (19.6–28.4)	47.2 (44.1–50.3)	52.8 (49.7–55.9)
South	77.5 (72.8–81.7)	22.5 (18.3–27.2)	54.9 (52.1–57.8)	45.1 (42.2–47.9)
West	83.3 (75.9–88.7)	16.7 (11.3–24.1)	63.3 (59.7–66.9)	36.7 (33.1–40.3)

Source: 2012 NSDUH: Substance Abuse and Mental Health Services Administration.

Note: **CI** = confidence interval; **NA** = not applicable.

[a]Intermittent smoking is defined as smoking in the past month but not daily, among current smokers.

[b]Daily smokers are defined as smoking daily among current smokers.

[c]Based on responses to the question "During the past 30 days, have you smoked part or all of a cigarette?" Respondents who chose "Yes" were classified as current smokers.

[d]Low precision; no estimate reported.

[e]Includes Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and persons of 2 or more races.

[f]Respondents 18–22 years of age currently living in a college dormitory are included in the Unknown category.

Table 13.6 **Prevalence of intermittent[a] and daily[b] cigarette smoking among adults 18 years of age and older among past-month cigarette users[c], by selected characteristics; National Survey on Drug Use and Health (NSDUH) 2012; United States**

Characteristic	Intermittent[a] % (95% CI)	Daily[b] % (95% CI)
Overall	38.1 (36.7–39.6)	61.9 (60.4–63.3)
Gender		
Male	40.7 (38.8–42.7)	59.3 (57.3–61.2)
Female	35.1 (33.2–37.1)	64.9 (62.9–66.8)
Race/ethnicity		
White, non-Hispanic	31.4 (29.9–33.0)	68.6 (67.0–70.1)
Black, non-Hispanic	51.9 (47.5–56.3)	48.1 (43.7–52.5)
Hispanic	62.2 (57.6–66.6)	37.8 (33.4–42.4)
American Indian/Alaska Native, non-Hispanic	_[d]	_[d]
Asian, non-Hispanic	47.2 (35.8–59.0)	52.8 (41.0–64.2)
Education		
Less than high school	34.0 (31.1–37.1)	66.0 (62.9–68.9)
High school graduate	34.0 (31.8–36.3)	66.0 (63.7–68.2)
Some college	39.4 (36.8–42.0)	60.6 (58.0–63.2)
College graduate	52.4 (48.5–56.3)	47.6 (43.7–51.5)
Age (in years)		
18–25	54.9 (53.1–56.6)	45.1 (43.4–46.9)
26–44	38.2 (36.1–40.4)	61.8 (59.6–63.9)
45–64	30.5 (27.8–33.4)	69.5 (66.6–72.2)
≥65	27.4 (21.4–34.3)	72.6 (65.7–78.6)
Poverty status		
At or above poverty level	37.4 (35.8–39.1)	62.6 (60.9–64.2)
Below poverty level	39.6 (36.7–42.5)	60.4 (57.5–63.3)
Unknown[e]	89.4 (84.3–93.0)	10.6 (7.0–15.7)
Region		
Northeast	39.4 (36.4–42.4)	60.6 (57.6–63.6)
Midwest	31.7 (29.4–34.0)	68.3 (66.0–70.6)
South	39.0 (36.6–41.5)	61.0 (58.5–63.4)
West	43.1 (39.6–46.7)	56.9 (53.3–60.4)

Source: 2012 NSDUH: Substance Abuse and Mental Health Services Administration.

Note: **CI** = confidence interval.

[a]Intermittent smoking is defined as smoking in the past month but not daily, among current smokers.

[b]Daily smokers are defined as smoking daily among current smokers.

[c]Based on responses to the question "During the past 30 days, have you smoked part or all of a cigarette?" Respondents who chose "Yes" were classified as current smokers.

[d]Low precision; no estimate reported.

[e]Respondents 18–22 years of age currently living in a college dormitory are included in the Unknown category.

Table 13.7 **Prevalence of intermittent[a] and daily[b] cigarette smoking among adults 18 years of age and older, by selected characteristics; National Survey on Drug Use and Health (NSDUH) 2012; United States**

Characteristic	Intermittent[a] % (95% CI)	Daily[b] % (95% CI)
Overall	9.1 (8.7–9.5)	14.7 (14.1–15.3)
Gender		
Male	10.9 (10.3–11.5)	15.8 (15.0–16.6)
Female	7.4 (6.9–7.9)	13.7 (13.0–14.4)
Race/ethnicity		
White, non-Hispanic	7.9 (7.5–8.4)	17.2 (16.5–18.0)
Black, non-Hispanic	13.2 (11.8–14.8)	12.2 (10.8–13.8)
Hispanic	11.6 (10.4–12.9)	7.0 (6.1–8.2)
American Indian/Alaska Native, non-Hispanic	19.8 (14.0–27.4)	22.3 (16.3–29.8)
Asian, non-Hispanic	4.8 (3.7–6.2)	5.4 (3.7–7.8)
Education		
Less than high school	11.5 (10.3–12.8)	22.3 (20.7–23.9)
High school graduate	10.0 (9.3–10.8)	19.4 (18.4–20.6)
Some college	10.0 (9.3–10.8)	15.4 (14.4–16.5)
College graduate	6.0 (5.4–6.7)	5.5 (4.8–6.2)
Age (in years)		
18–25	17.5 (16.7–18.2)	14.4 (13.7–15.1)
26–44	11.0 (10.3–11.8)	17.9 (16.9–18.8)
45–64	6.9 (6.2–7.7)	15.7 (14.7–16.8)
≥65	2.7 (2.1–3.6)	7.3 (6.1–8.7)
Poverty status		
At or above poverty level	8.1 (7.6–8.5)	13.5 (12.9–14.1)
Below poverty level	14.1 (13.0–15.4)	21.6 (20.1–23.2)
Unknown[c]	19.7 (14.6–26.1)	2.3 (1.2–4.4)
Region		
Northeast	8.8 (8.0–9.7)	13.6 (12.5–14.8)
Midwest	8.4 (7.7–9.1)	18.1 (17.0–19.3)
South	9.7 (9.0–10.4)	15.1 (14.2–16.1)
West	8.9 (8.0–9.9)	11.7 (10.6–13.0)

Source: 2012 NSDUH: Substance Abuse and Mental Health Services Administration.
Note: **CI** = confidence interval.
[a]Intermittent smoking is defined as smoking in the past month but not daily.
[b]Daily smokers are defined as smoking daily.
[c]Respondents 18–22 years of age currently living in a college dormitory are included in the Unknown category.

American Indians/Alaska Natives and Whites had the highest prevalence of daily smoking. For intermittent smoking, Blacks had about the same prevalence (13.2%) as they did for daily smoking (12.2%). In contrast, among Hispanics there were more intermittent smokers (11.6%) than daily smokers (7.0%), but for Whites and American Indians/Alaska Natives the opposite was true, with the rates for Whites being 17.2% for daily and just 7.9% for intermittent. Education was inversely related to daily smoking, but by age there was no clear trend under 65 years of age (those 65 years of age or older had the lowest rate of daily smoking by far, 7.3%). The 18–25 years of age group was the only age category in which the estimate for intermittent smoking was higher than the estimate for daily smoking, a pattern that is consistent with the evolving smoking behavior of young adults. In 2012, intermittent smoking decreased steadily with age. Regarding poverty status, the prevalence of daily smoking was much higher among those below the poverty level (21.6%) than among those at or above this level (13.5%). Similarly, the prevalence of intermittent smoking was higher for those below the poverty level than among those at or above this standard. Last, by region the Midwest and South had the highest prevalence of daily smoking.

Cessation

Attempts to Quit Smoking in the Past Year

Attempts to quit cigarette smoking ("quit attempts") are considered an important intermediate step to increasing rates of cessation and, thereby, reducing the overall prevalence of smoking. In the 2012 NHIS, adult participants who were current daily smokers were asked whether they had stopped smoking for more than 1 day in the past 12 months because they were trying to quit. As reported in Table 13.8, an estimated 42.7% of daily smokers in 2012 had attempted to quit smoking in the past year. The prevalence of quit attempts did not differ significantly by gender. Black (49.3%) and Hispanic (51.8%) daily smokers had a higher prevalence of quit attempts than did their White counterparts (40.9%). In general, education was associated with attempting to quit, with the college-educated group having the highest percentage (49.0%). There was an inverse association with age, as young adults had the highest prevalence of attempting to quit (48.5%) and those 65 years of age or older had the lowest rate (34.6%). Last, the prevalence of attempting to quit did not differ significantly by poverty status.

Interest in Quitting Smoking

According to the 2010 NHIS, 68.9% of current adult daily smokers in that year were interested in quitting smoking (Table 13.8). As was the case among smokers who attempted to quit, estimates for interest in quitting did not differ significantly by gender or poverty status. In contrast, estimates differed significantly by race/ethnicity, with Whites and Blacks having the highest absolute estimates. In general, those with higher levels of education had more interest in quitting, although those with at least 9 years of education but no diploma had an estimate of 71.1%, quite similar to the estimates for those with some college education (72.1%) and those with at least a college degree (72.5%). Beginning with the 25–44 years of age group, the estimates for interest in quitting decreased with each age group.

Quit Ratio

In 2012, the overall quit ratio (i.e., the percentage of ever smokers who had quit smoking) among U.S. adults was 55.1% (Table 13.9), which means that in that year there were more former smokers than there were current smokers in the United States. The quit ratio was almost the same for men and women. By race/ethnicity, Whites (57.1%) and Asians (51.8%) had the highest quit ratios, and Blacks (44.1%) and American Indians/Alaska Natives (48.2%) had the lowest. Beginning with the group that had at least 9 years of education but no high school diploma, the quit ratio increased as level of education rose. Both greater age and not living in poverty were positively correlated with the quit ratio.

Trends Over Time in the Quit Ratio

The percentage of ever smokers who had quit increased sharply in both genders between 1965 and the early 1990s, but for males this rate has changed little since then (Figure 13.5). Furthermore, although for a long time males had a substantially higher quit ratio than females, females did not experience the same plateau as males, with the ratio for females substantially higher in 2011 than in the early 1990s. By 2005, the difference between the genders was trivial. Regardless, although the quit ratio is a useful indicator, analyses of changes over time in this ratio for a group, or for the entire U.S. population, needs to be interpreted in light of changes in the age distribution of the population of interest. As shown in Figure 13.7, the percentage of ever smokers who quit smoking increased over time for all age groups except for young adults

Table 13.8   **Percentage of current adult daily cigarette smokers 18 years of age and older who attempted to quit smoking during the past year or had an interest in quitting smoking, by selected characteristics; National Health Interview Survey (NHIS) 2010 and 2012; United States**

Characteristic	Attempted to quit smoking (2012) % (95% CI)	Had an interest in quitting smoking (2010) % (95% CI)
Total	42.7 (40.9–44.5)	68.9 (67.1–70.8)
Gender		
Male	43.1 (40.6–45.6)	67.8 (65.2–70.4)
Female	42.2 (39.7–44.7)	70.1 (67.6–72.7)
Race/ethnicity		
White, non-Hispanic	40.9 (38.7–43.1)	69.4 (67.1–71.6)
Black, non-Hispanic	49.3 (45.0–53.6)	74.1 (69.6–78.5)
Hispanic	51.8 (45.7–57.9)	58.4 (52.8–64.0)
American Indian/Alaska Native, non-Hispanic	—[a]	52.1 (31.1–73.2)
Asian, non-Hispanic	39.4 (29.2–49.6)	63.3 (53.5–73.1)
Education[b]		
≤8 years	35.5 (27.9–43.1)	64.5 (56.7–72.4)
9–11 (including 12 years, no diploma)	39.0 (34.3–43.6)	71.1 (66.9–75.3)
High school diploma	40.0 (36.9–43.1)	66.5 (63.4–69.6)
Some college	44.3 (41.3–47.2)	72.1 (69.0–75.1)
≥College	49.0 (43.3–54.6)	72.5 (67.4–77.6)
Age group (years)		
18–24	48.5 (41.9–55.1)	65.8 (59.8–71.8)
25–44	46.8 (44.0–49.6)	74.3 (71.7–76.9)
45–64	38.8 (36.2–41.4)	68.3 (65.6–71.0)
≥65	34.6 (29.6–39.7)	52.7 (46.7–58.6)
Poverty status		
At or above poverty level	43.8 (41.6–46.0)	69.9 (67.7–72.1)
Below poverty level	40.4 (36.9–43.9)	66.6 (62.8–70.4)
Unknown[c]	39.1 (32.7–45.5)	66.1 (60.0–72.2)
Region		
Northeast	44.2 (39.6–48.8)	70.6 (65.2–76.0)
North Central	42.6 (38.9–46.3)	69.9 (66.2–73.6)
South	42.1 (39.4–44.8)	68.6 (65.7–71.5)
West	42.9 (39.2–46.7)	66.8 (63.3–70.2)

Source: 2010 and 2012 NHIS: National Center for Health Statistics, public use data tapes.
Note: **CI** = confidence interval.
[a]Low precision; no estimate reported.
[b]Education is reported for adults ≥25 years of age only.
[c]Respondents 18–22 years of age currently living in a college dormitory were included in the Unknown category.

Table 13.9 **Percentage of ever cigarette smokers 18 years of age and older who have quit smoking (i.e., the quit ratio), by selected characteristics; National Health Interview Survey (NHIS) 2012; United States**

Characteristic	Quit ratio % (95% CI)
Overall	55.1 (54.0–56.2)
Gender	
Male	55.3 (53.8–56.8)
Female	54.8 (53.2–56.3)
Race/ethnicity	
White, non-Hispanic	57.1 (55.8–58.4)
Black, non-Hispanic	44.1 (41.0–47.3)
Hispanic	53.6 (50.4–56.8)
American Indian/Alaska Native, non-Hispanic	48.2 (35.7–60.6)
Asian, non-Hispanic	51.8 (46.2–57.4)
Education[a]	
≤8 years	57.6 (52.9–62.3)
9–11 (including 12 years, no diploma)	43.5 (40.2–46.8)
High school diploma	50.9 (48.8–53.0)
Some college	57.1 (55.0–59.1)
≥College	73.9 (71.9–75.9)
Age group (years)	
18–24	26.5 (22.4–30.5)
25–44	40.7 (38.8–42.6)
45–64	56.9 (55.0–58.7)
≥65	82.1 (80.5–83.7)
Poverty status	
At or above poverty level	57.5 (56.2–58.8)
Below poverty level	34.5 (31.9–37.0)
Unknown[b]	64.7 (61.7–67.7)
Region	
Northeast	59.0 (55.9–62.0)
North Central	51.2 (49.1–53.4)
South	52.3 (50.3–54.3)
West	61.1 (59.1–63.1)

Source: 2012 NHIS: National Center for Health Statistics, public use data tapes.
Note: **CI** = confidence interval.
[a]Education is reported for adults ≥25 years of age only.
[b]Respondents 18–22 years of age currently living in a college dormitory were included in the Unknown category.

(18–24 years of age) whose quit ratio has changed little over 45 years. The greatest gains were observed among those 65 years of age and older; this age group continued its gains even during the 1990s and beyond when the quit ratio leveled out for all other age groups. Thus, to more fully appreciate the changes seen over time in the quit ratio by gender or another classification, one would have to look at changes within specific age groups and, moreover, changes in the relative size of these different age groups.

In terms of race/ethnicity, as shown in Figure 13.6, for decades Whites had a higher quit ratio than Hispanics and Blacks, but by 2010 the gap between Whites and Hispanics was negligible, underscoring the fact that the quit ratio among Hispanics had increased considerably over time. The quit ratio for Black smokers, in contrast, did not move closer to Whites over time. Still, as noted above, one would have to examine the changes in age distribution over the years within a racial/ethnic group to more fully understand the trends in the quit ratio by that classification.

# Trends Over Time in Smoking

Adolescents

National YRBS data (Figure 13.8) indicate that the decline in the prevalence of current cigarette smoking among students was nonlinear during the past two decades, highlighting the decline in the prevalence of current smoking among youth that began after the Master Settlement Agreement (MSA) in 1998. Figure 13.8 illustrates that the prevalence of cigarette smoking increased among high school students from 1991–1997, hit a peak in 1997 before the MSA in 1998, and then began a steep decline (Nelson et al. 2008; Centers for Disease Control and Prevention [CDC] 2010) from 1997–2003 and then a more gradual decline from 2003–2011. In 1991, about one-quarter (27.6% of males, 27.3% of females) of high school students were current smokers (Figure 13.8A). By 1997, the prevalence of current smoking had increased to more than one-third (37.7% males, 34.7% females) of high school students. Nonetheless, current cigarette smoking among students was at its lowest point in 2011 with less than one in five high school students smoking (19.9% males, 16.1% females). These trends in current cigarette smoking were reasonably consistent across racial/ethnic subgroups (Figure 13.8B).

Figure 13.5   Percentage of ever cigarette smokers 18 years of age and older who had quit smoking (i.e., the quit ratio), by gender; National Health Interview Survey (NHIS) 1965–2012; United States
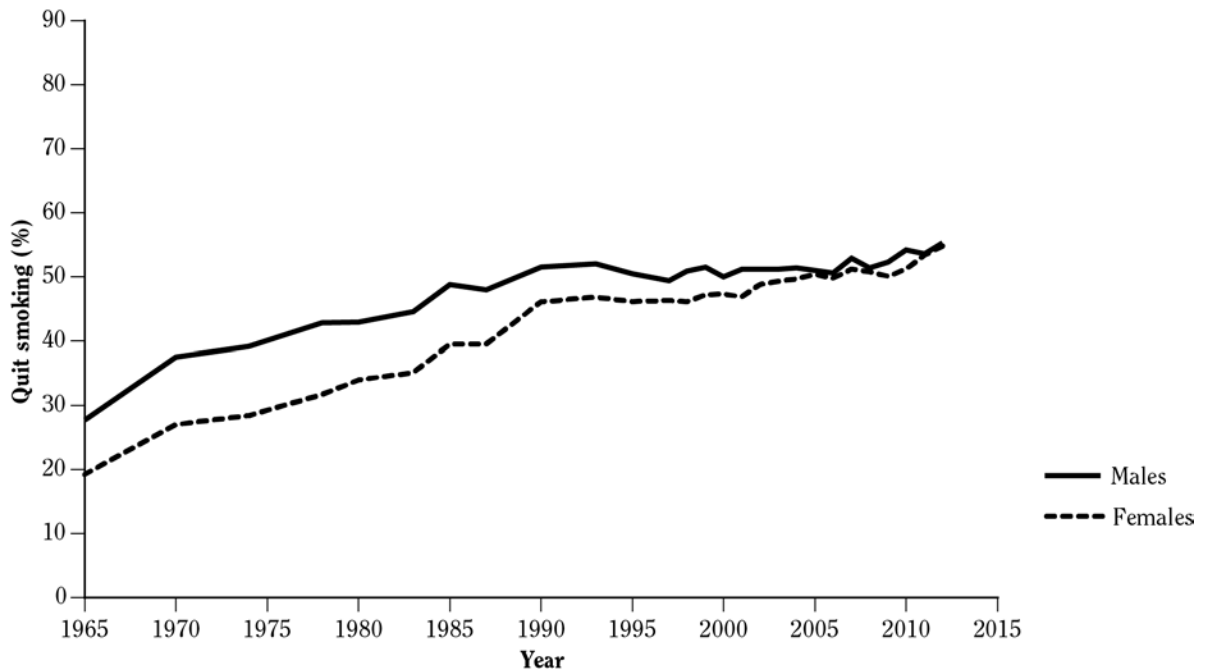
Source: 1965–2012 NHIS, National Center for Health Statistics, public use data tapes.

Figure 13.6   Percentage of ever cigarette smokers 18 years of age and older who had quit smoking (i.e., the quit ratio), by age group; National Health Interview Survey (NHIS) 1965–2012; United States
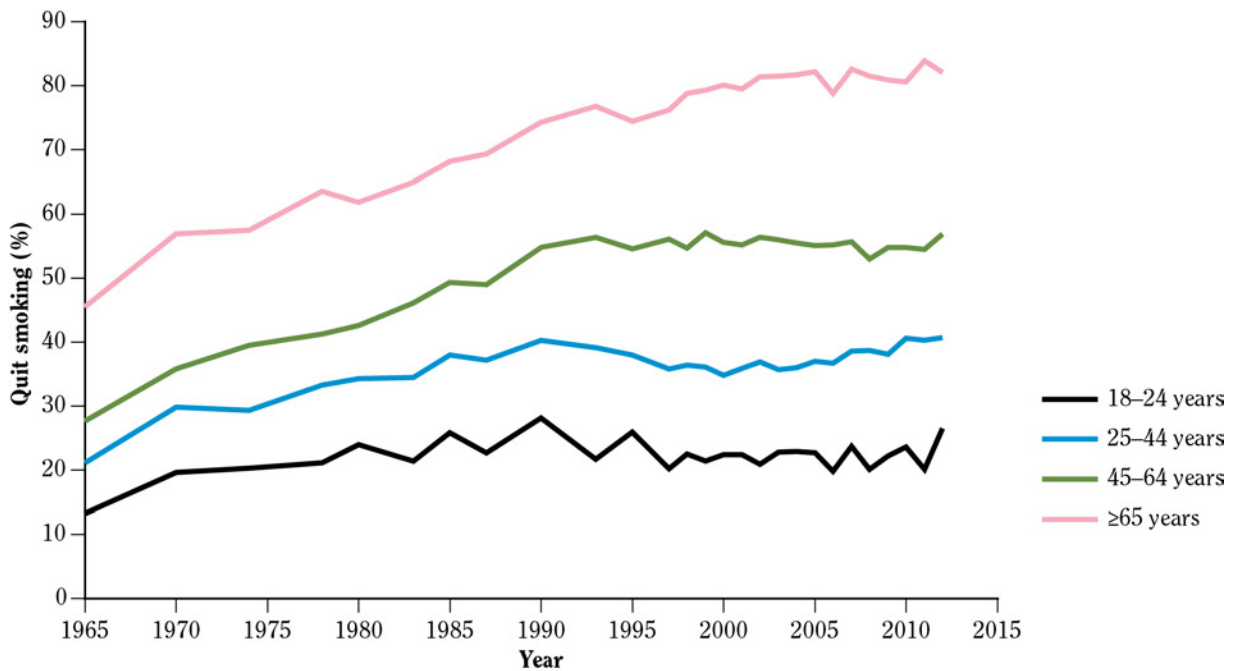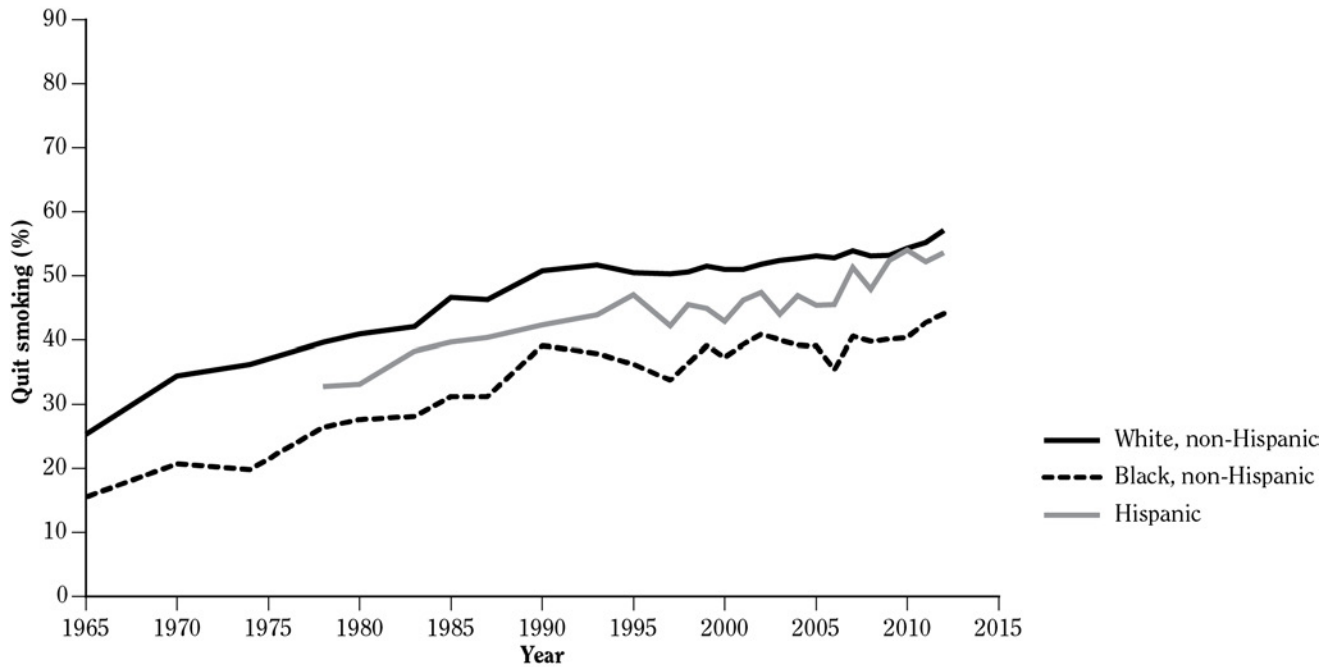

Source: 1965–2012 NHIS, National Center for Health Statistics, public use data tapes.

Figure 13.7   Percentage of ever cigarette smokers 18 years of age and older who had quit smoking (i.e., the quit ratio), by race/ethnicity; National Health Interview Survey (NHIS) 1965–2012; United States

Source: 1965–2012 NHIS, National Center for Health Statistics, public use data tapes.

Adults

In the years before the 1964 Surgeon General's report, the prevalence of cigarette smoking was already declining among men but was still rising among women (Figure 13.9) (Warner and Murt 1982). Figures 13.4, 13.10, and 13.11 display long-term trends in current cigarette smoking using NHIS data from 1965–2012. Among all adults (18 years of age or older), the prevalence of current cigarette smoking declined steadily over time from 1965 (42.4%) to 2012 (18.1%). Most of this decline reflected reductions in current smoking among males (Figure 13.4). In 1965, just over one-half (51.9%) of males were current cigarette smokers—in 2011, less than one-fifth (19.0%) were. The decline for females was steady but less dramatic: in 1965, about one-third (33.9%) of females were current cigarette smokers—in 2011, less than one-fifth (17.3%) were. Although trends in current smoking among Blacks, Whites, and Hispanics varied over time (Figure 13.10), current smoking declined among all three groups from 1965–2011. Similarly, the prevalence of current cigarette smoking from 1965–2011 declined for all four age groups (Figure 13.11). From 2005–2011, the most marked decline was seen in those 18–24 years of age (from 24.4 to 18.9%).

Using data from NHIS for 1991–2012, Figures 13.12, 13.13, and 13.14 show trends in the prevalence of daily cigarette smoking by gender, race/ethnicity, and age group, respectively. As noted earlier in this chapter, most adult current smokers smoke daily. Figure 13.12 shows that the prevalence of daily smoking among adults 18 years of age or older declined slowly but steadily over time for both genders, but by 2007, this trend flattened out. Overall, the prevalence of daily smoking declined by 7.8% for males and 6.8% for females from 1991–2011 (Figure 13.12). The trends over time by racial/ethnic group from 1991–2011 were more diverse (Figure 13.13); among Whites, the prevalence declined by 6.3%, while among Blacks the rate declined 8.5%. Among Hispanics, however, the prevalence dropped over one-half, going from 14.4% in 1991 to 7% in 2011, or a 7.4% decline. Among all three racial/ethnic groups, the declines slowed and/or stalled between 2007–2011. Figure 13.14 shows all four age groups had a lower prevalence at the end of the period than at the beginning, with the greatest decline noted among smokers 25–44 years of age whose prevalence of daily smoking declined by 9.5%. The youngest group (18–24 years of age) differed from the other three age groups by experiencing a notable increase in daily smoking during part of the period; its

Figure 13.8 Trends over time in the prevalence of current cigarette smoking among high school students, by gender and race/ethnicity; National Youth Risk Behavior Survey (YRBS) 1991–2011; United States

A. Gender
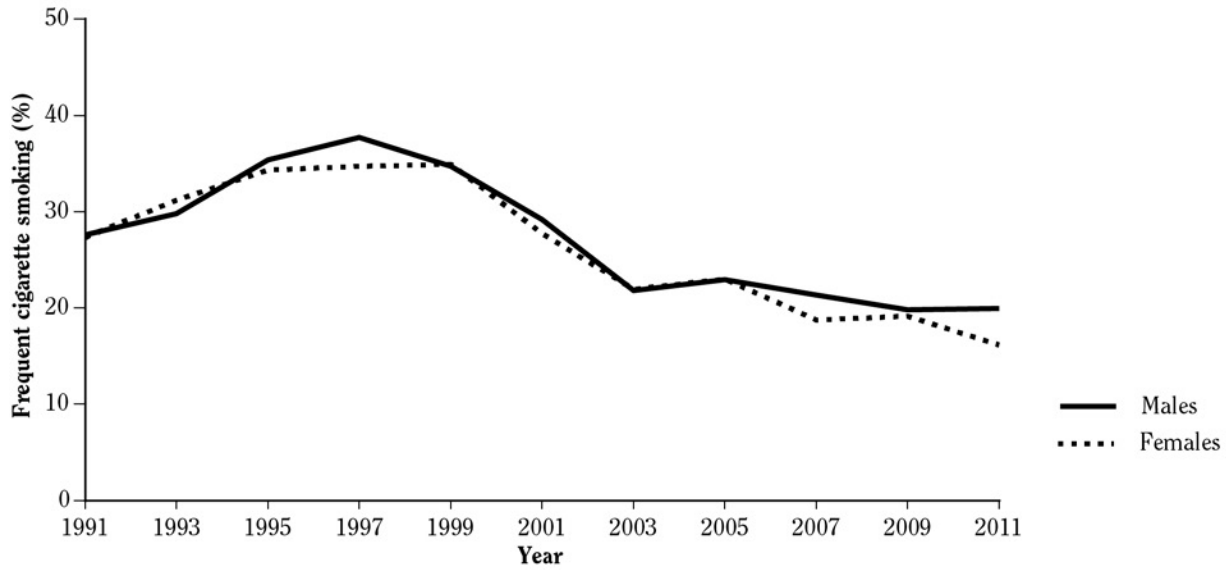
B. Race/ethnicity
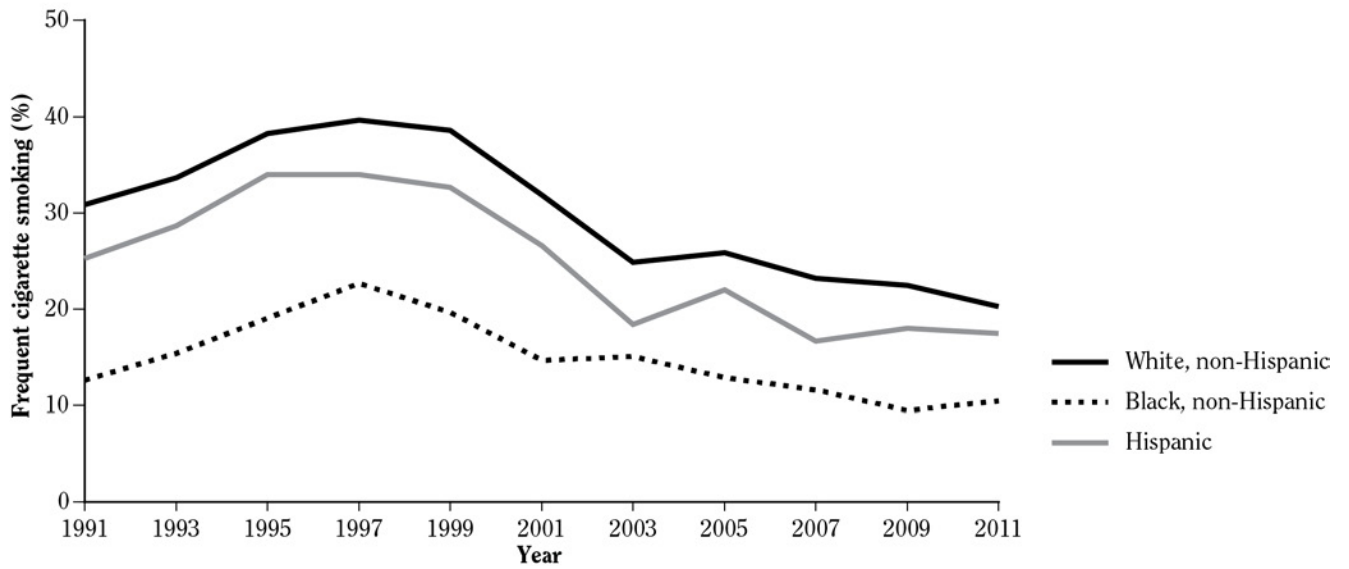
Source: 1991–2011 National YRBS, Centers for Disease Control and Prevention.
Note: Prevalence based on responses to the question "During the past 30 days, on how many days did you smoke cigarettes?" Respondents who reported that they had smoked cigarettes on at least 1 day during the 30 days before the survey were classified as current smokers.

Figure 13.9   Prevalence of current cigarette smokers, by gender, calendar year, and birth cohort
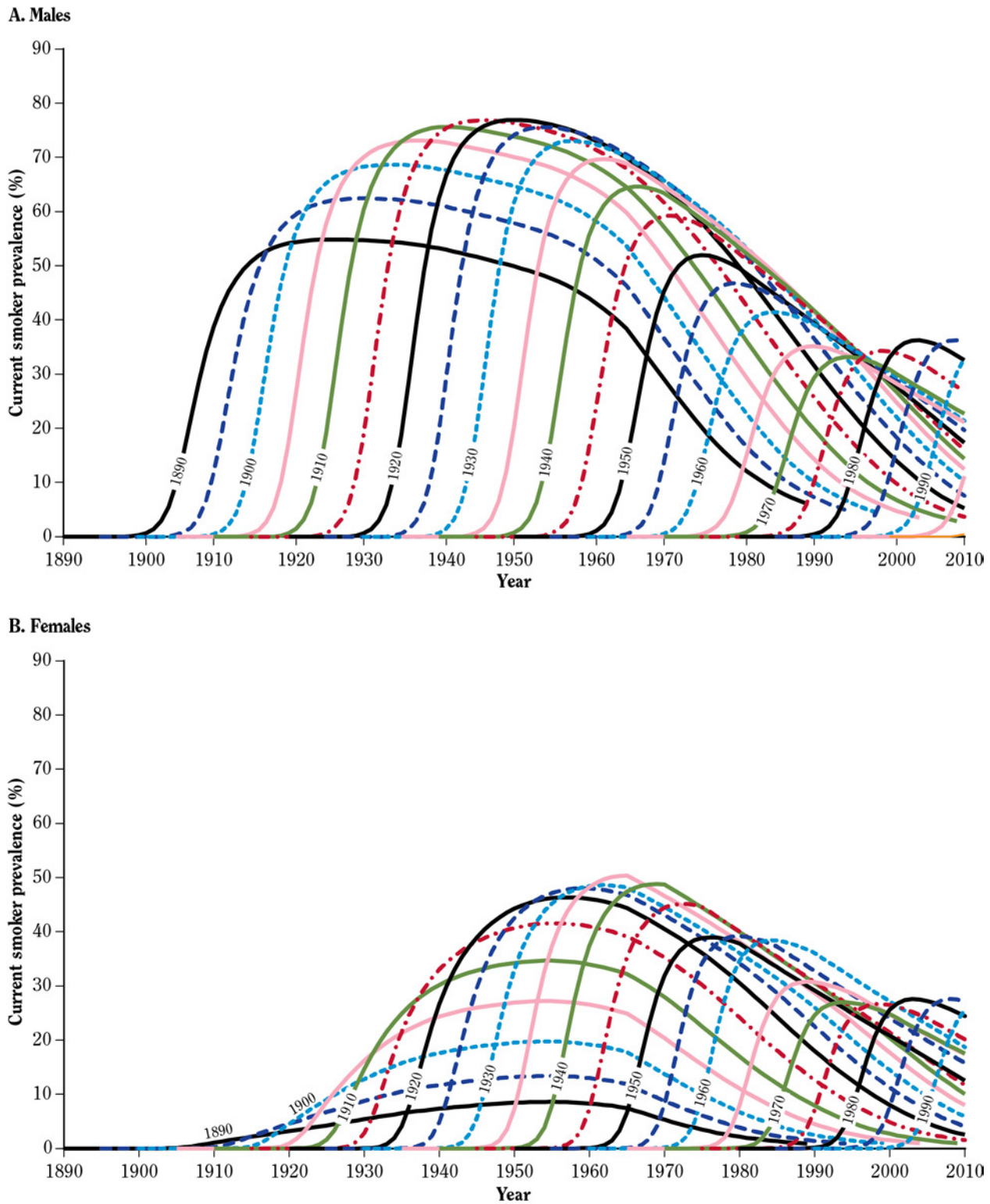
A. Males

B. Females

Source: Holford et al. in press. *American Journal of Preventive Medicine.* February 2014; online only.

Figure 13.10 Trends in prevalence (%) of current cigarette smoking among adults 18 years of age and older, by race/ethnicity; National Health Interview Survey (NHIS) 1965–2012; United States
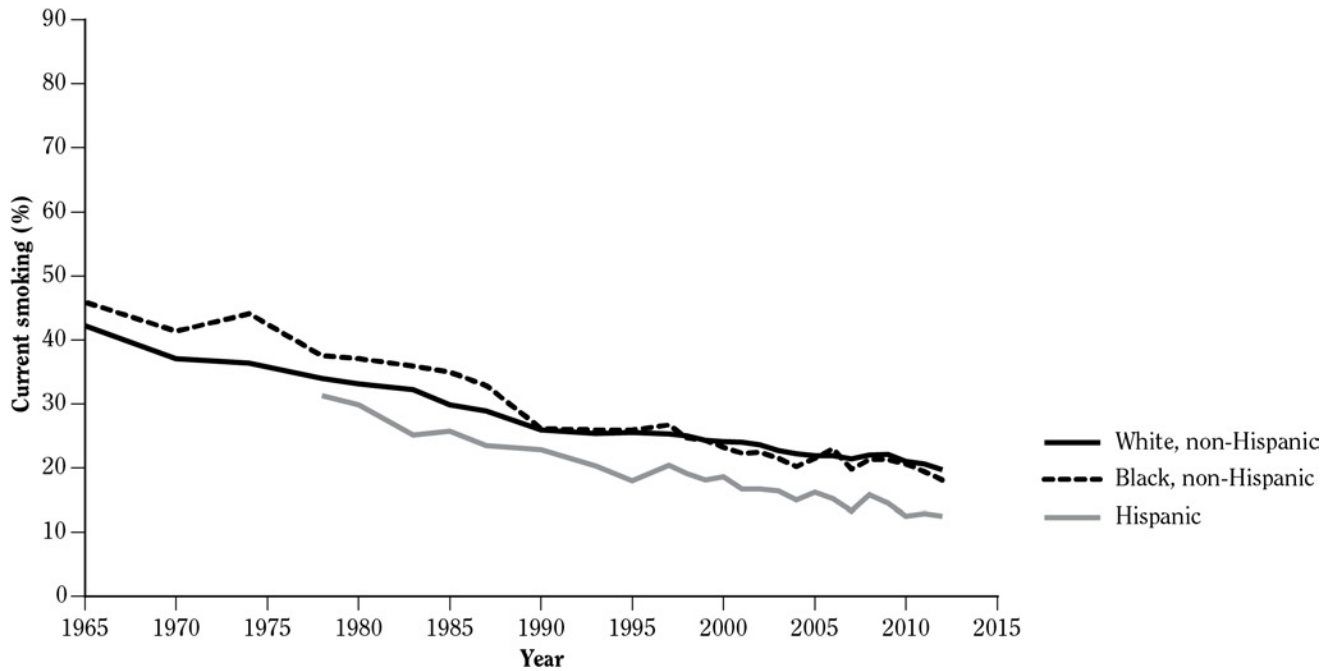
Source: 1965–2012 NHIS, National Center for Health Statistics, public use data tapes.

Figure 13.11 Trends in prevalence (%) of current cigarette smoking among adults, by age group; National Health Interview Survey (NHIS) 1965–2012; United States
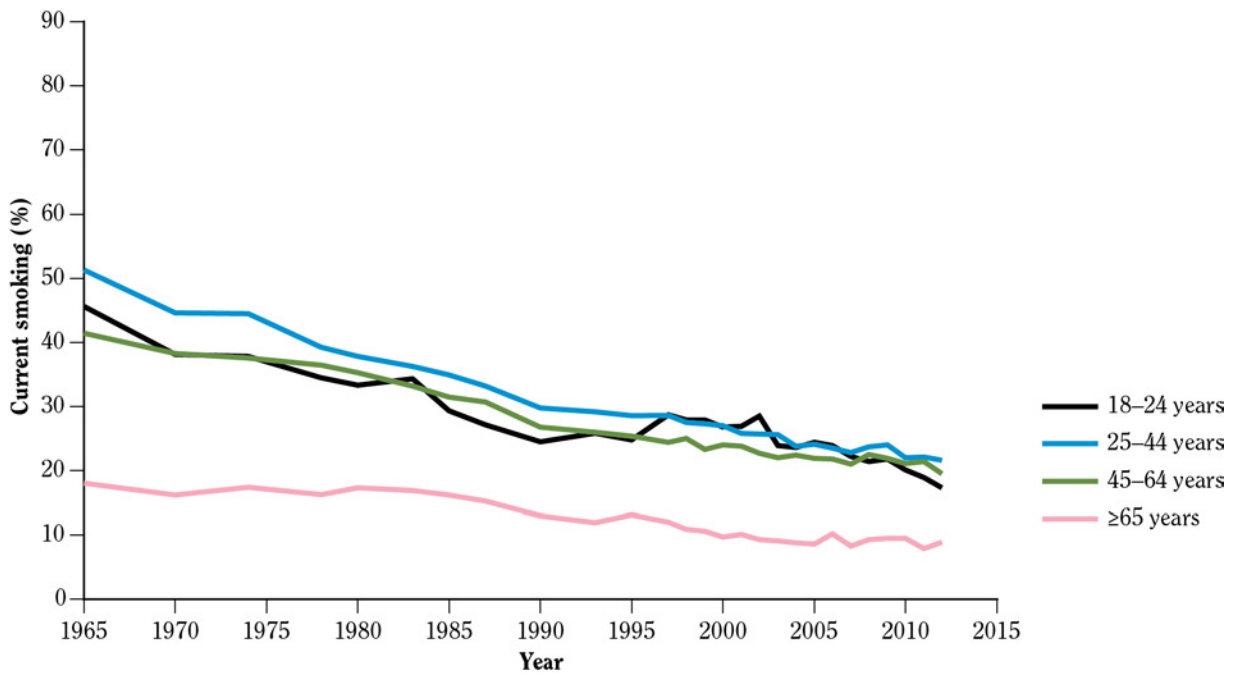
Source: 1965–2012 NHIS, National Center for Health Statistics, public use data tapes.

Figure 13.12 Trends in prevalence (%) of daily cigarette smoking[a] among adults 18 years of age and older, by gender; National Health Interview Survey (NHIS) 1991–2012[b]; United States
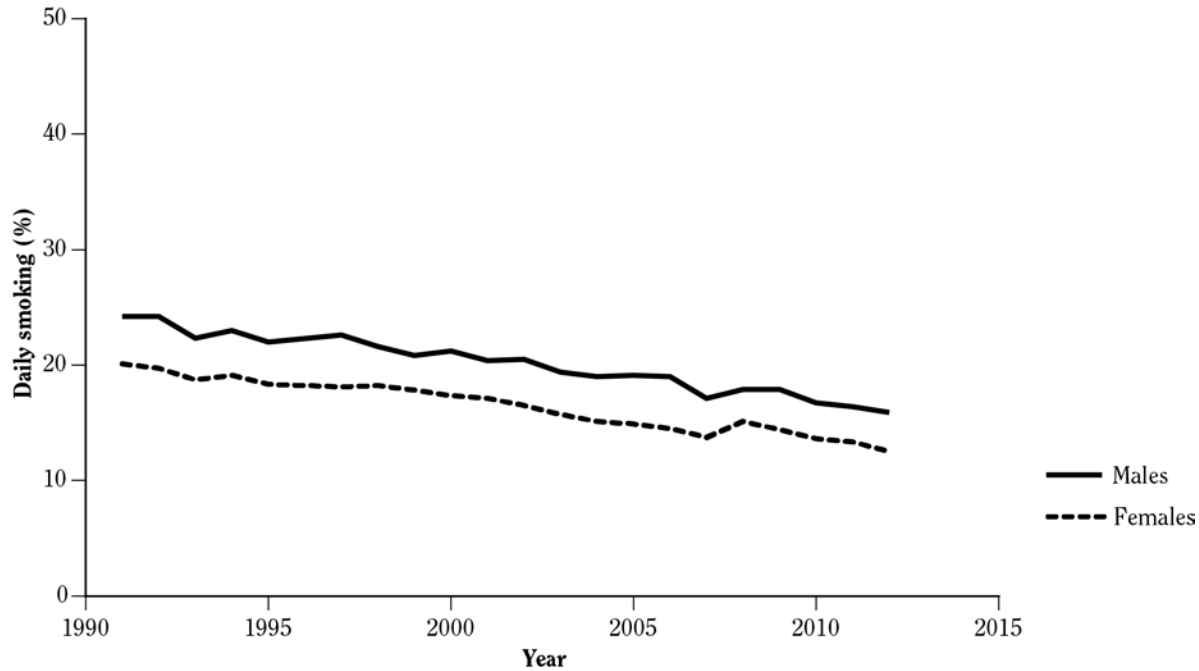
Source: 1991–2012 NHIS, National Center for Health Statistics, public use data tapes.
[a]Current daily smokers in NHIS included adult respondents who reported smoking ≥100 cigarettes in their lifetime and specified currently smoking "every day."
[b]Data for daily smoking were not available before 1991 or in 1996.

rate rose from 18.2% in 1991 to 21.4% in 2002 before declining sharply to 13.2% in 2011. The other three age groups have experienced a slowing of their declines in the prevalence of daily smoking since 2007, no longer increasing for smokers 45–64 years of age.

Smoking History by Birth Cohorts

Previous Surgeon General's reports have presented cross-sectional survey data when discussing historical trends in cigarette smoking (USDHHS 1989, 1994, 1998, 2000, 2012), but the present report will examine historical trends by using a different approach, one that is based on pooling and modeling the existing cross-sectional NHIS data. Specific details about the methodology used to generate these curves can be examined elsewhere (Anderson et al. 2012; Holford et al. in press).

Figure 13.9 provides estimates of the prevalence of current smoking by birth cohort and year for males (A) and females (B). Figures 13.15A (males) and 13.15B (females) show probabilities of smoking initiation by birth cohort and age, and Figures 13.16A (males) and 13.16B (females) provide estimates of the mean number of cigarettes smoked per day by birth cohort and year. Finally, Figures 13.17A (males) and 13.17B (females) present annual probabilities of cigarette smoking cessation by age and birth cohort.

The birth cohort curves for males and females allow for a much more detailed presentation of the history of cigarette smoking since the early twentieth century than was possible in early Surgeon General's reports. Past discussions of this history have focused primarily on the decline in the prevalence of adult current smoking since 1965 (Figure 13.4), with some estimates presented of higher smoking prevalence during the 1940s and 1950s (USDHHS 1989, 1994, 1998, 2000, 2012). As shown in Figure 13.9A, for males, each birth cohort curve rises sharply, reaches a peak, and then declines more slowly over time—indicating that developmental patterns of cigarette smoking among males have been relatively stable across generations. The rise in each curve for males that represents the initiation of smoking is illustrated in more detail

Figure 13.13 Trends in prevalence (%) of daily cigarette smoking[a] among adults 18 years of age and older, by race/ethnicity[b]; National Health Interview Survey (NHIS) 1991–2012[c]; United States
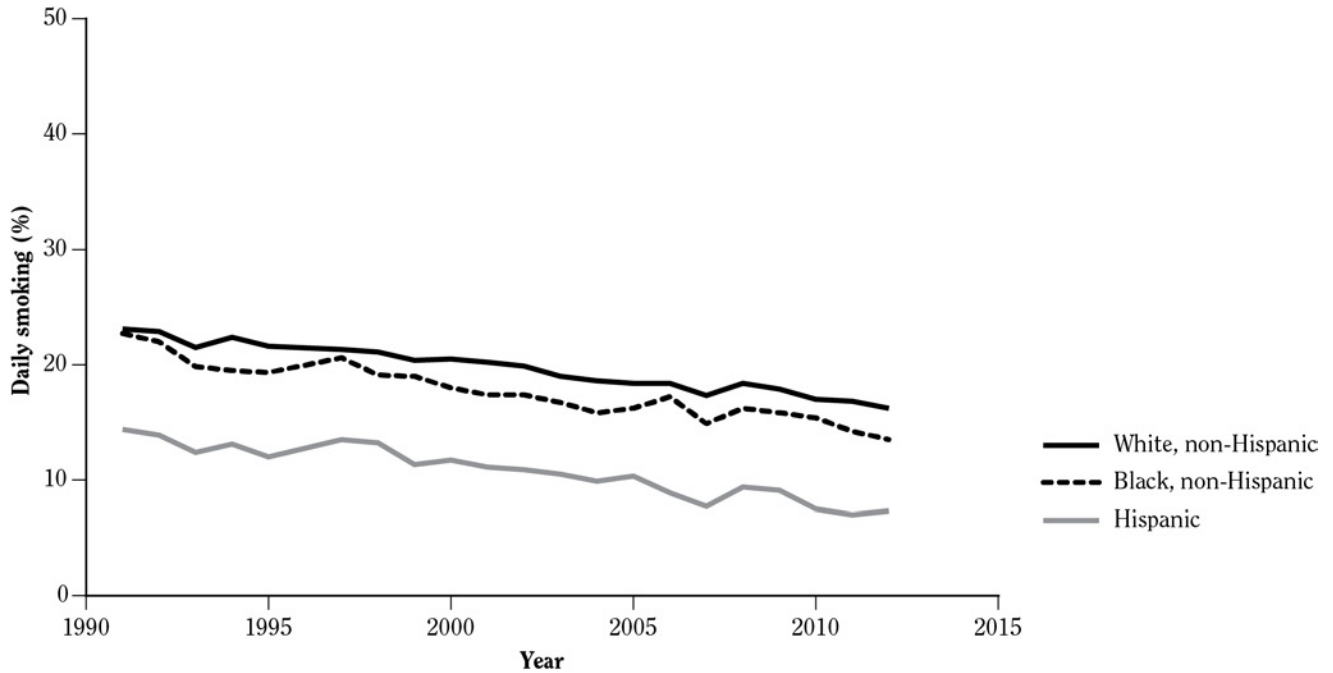
Source: 1991–2012 NHIS, National Center for Health Statistics, public use data tapes.
[a]Current daily smokers in NHIS included adult respondents who reported smoking ≥100 cigarettes in their lifetime and specified currently smoking "every day."
[b]In 1999, NHIS began reporting race according to the 1997 Revisions to the Standards for the Classification of Federal Data on Race and Ethnicity. Before 1999, data were reported according to the 1977 Standards and are not strictly comparable to later years. In 2000, NHIS began reporting Hispanic ethnicity (which includes persons of Hispanic, Latino, or Spanish descent).
[c]Data for daily smoking were not available before 1991 or in 1996.

in Figure 13.15A. For all birth cohorts, earliest smoking initiation began at about 10 years of age, with the probability of starting to smoke rising before peaking at about 17 years of age and then declining to almost nothing by about 30 years of age. This pattern for males was more prominent in the most recent birth cohorts.

Males who served in World War II or entered adolescence during the war years had the highest rates of smoking initiation (Figure 13.15A), with a peak in late adolescence of about 14–16% starting to smoke annually. As a result, among males born between 1915 and 1925, the curves show that over three-fourths of these men were current smokers by 30 years of age (Figure 13.9A). Among men born after 1925, the peak prevalence of smoking began to fall, slowly at first, but more rapidly up through males born around 1970. For males born from 1970 to 1994, the analyses indicate that the peak prevalence of current smoking in young adulthood has stopped declining and remains at about 30% (Holford et al. in press).

Among females, current smoking curves are distinctly different from those of males (Figure 13.9B). For females, the highest peak prevalence of current smoking was reached by those born between 1935–1939. Although the rate of smoking initiation (Figure 13.15B) and the rise in the current prevalence of smoking among females born from about 1930 to 1960 was more similar to those among males born between 1915–1925 than to those born in 1930–1960, the peak prevalence of current smoking reached by females, at about 45–50%, was lower than it was for males. But similar to the case with males, the curves of current smoking declined from these peak years down to the birth cohorts for 1980 and then for some time after, but they have stopped declining in recent birth cohorts (Holford et al. in press).

The curves describing the estimated probability of smoking initiation by age across the birth cohorts for males and females provide a more detailed picture of these patterns of initiation (Figures 13.15A and 13.15B). As

Figure 13.14 Trends in prevalence (%) of daily cigarette smoking[a] among adults, by age group; National Health Interview Survey (NHIS) 1991–2012[b]; United States
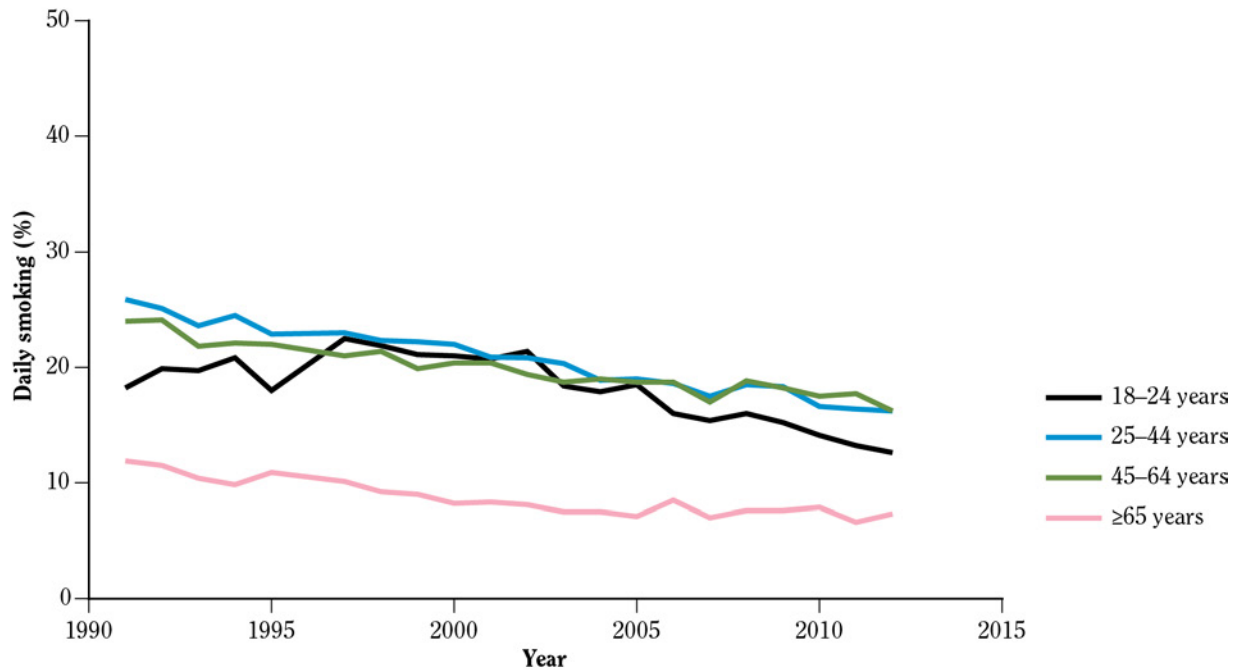
Source: 1991–2012 NHIS, National Center for Health Statistics, public use data tapes.
[a]Current daily smokers included adult respondents who reported smoking ≥100 cigarettes in their lifetime and specified currently smoking "every day."
[b]Data for daily smoking were not available before 1991 or in 1996.

noted in this chapter, among males across birth cohorts, the curve rises sharply, reaches a peak in late adolescence, and then declines, with little initiation beyond 30–35 years of age. By comparison, for females, initiation curves rise more slowly with age and extend into later ages, particularly among females born in 1980 and later. As shown in Figure 13.15B, among females, the peak annual initiation rates were lower than among males, particularly in comparisons of birth cohorts before 1920. In birth cohorts from 1920–1950, initiation rates among females became much higher and closer to those seen among males, but it was not until the 1960 birth cohorts that the actual rates became similar by gender (at about 6–8% per year in late adolescence), largely due to the sharp decline in peak initiation rates among men. Since the 1960s, initiation rates among males and females have been more similar (Holford et al. in press).

The decline in current smoking by calendar year in each birth cohort curve (Figure 13.9A for males and Figure 13.9B for females) represents the impact of smoking cessation as a particular birth cohort ages and reflects the higher mortality of smokers. This later part of these curves

shows larger differences across birth cohorts than the inclines that describe smoking initiation. In more recent birth cohorts, the decline in current smoking has been steeper and less protracted than in earlier birth cohorts, suggesting that smoking cessation now occurs at an increased frequency earlier in the life course. This interpretation is reinforced by data presented in Figure 13.17A for males and Figure 13.17B for females. At all ages, the probability of smoking cessation in the most recent birth cohorts exceeds that of earlier birth cohorts.

Larger differences across birth cohorts can also be observed with regard to daily consumption of cigarettes, illustrated in Figure 13.16A (males) and Figure 13.16B (females). In more recent birth cohorts, consumption has flattened greatly across the developmental life course, compared with earlier birth cohorts. The mean number of cigarettes smoked reached its highest level at about 25 cigarettes per day for males and about 20 cigarettes per day for females from 1970–1990. Since then, total consumption has fallen to its lowest levels and today remains at less than 10 cigarettes per day (Holford et al. in press).

Figure 13.15 Annual probabilities of initiating cigarette smoking, by gender, birth cohort, and age
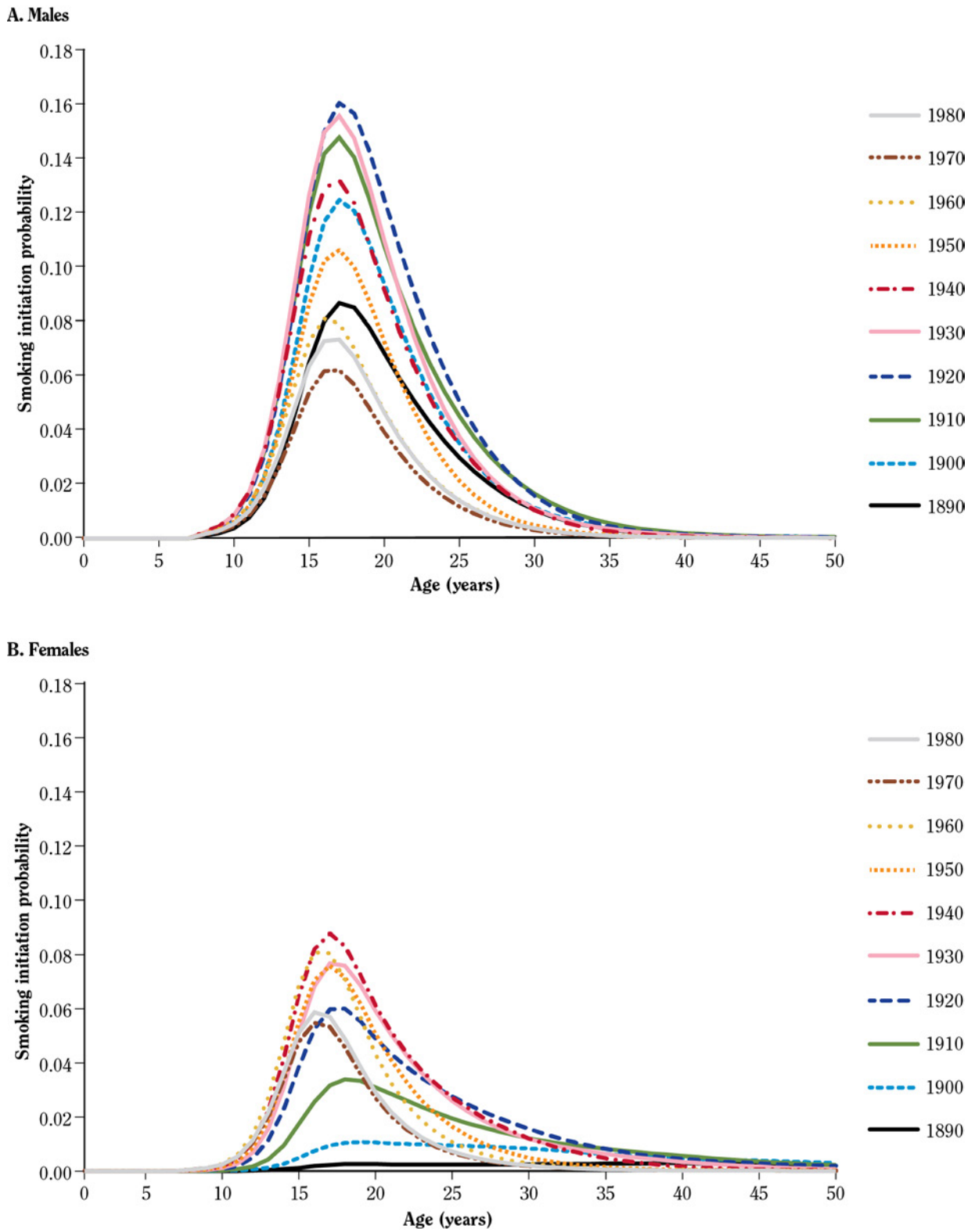
A. Males

B. Females

Source: Holford et al. in press. *American Journal of Preventive Medicine.* February 2014; online only.

Figure 13.16 Mean number of cigarettes smoked per day, by gender, year, and birth cohort
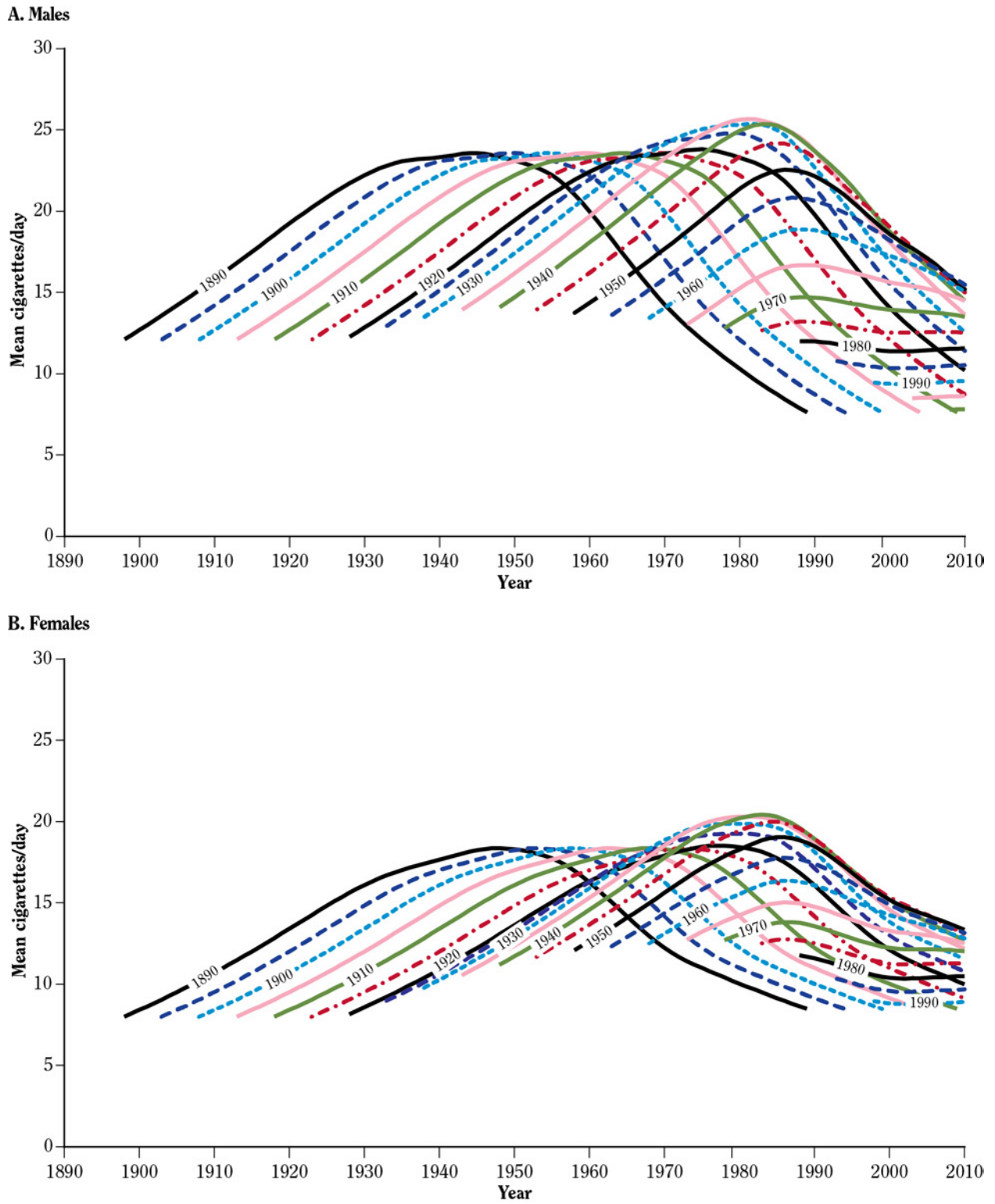
A. Males

B. Females

Source: Holford et al. in press. *American Journal of Preventive Medicine.* February 2014; online only.

Figure 13.17 Annual probabilities of cigarette smoking cessation, by gender, age, and birth cohort
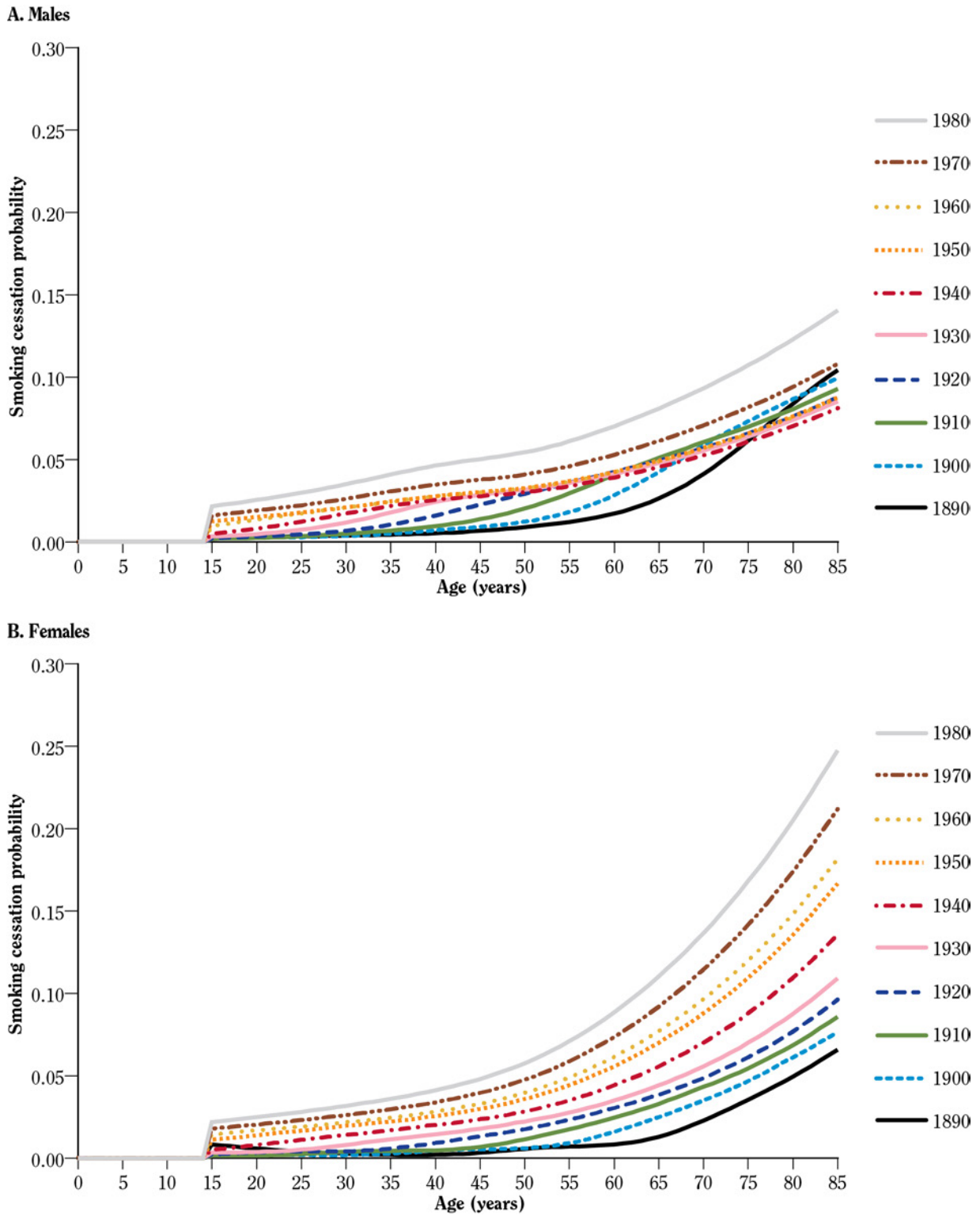
A. Males

B. Females

Source: Holford et al. in press. *American Journal of Preventive Medicine.* February 2014; online only.

Other Tobacco Products

Although cigarettes remain the most prevalent form of tobacco use in the United States, the use of other tobacco products, such as cigars and smokeless tobacco, is still common. Data from the U.S. Department of Agriculture and trade data reported by industry indicate that although cigarette consumption has declined substantially, both the consumption and sale of moist snuff and cigars have risen (Maxwell 2012a,b,c). Moreover, some tobacco users consume more than one product, while others switch from one product to another (prompted by perceived harm reduction, differential prices, and/or smokefree air policies).

Patterns of Smokeless Tobacco Use

Historically, the use of smokeless tobacco in the United States has been highest among White males (Bhattacharyya 2012). In the United States, smokeless tobacco is usually consumed in one of two forms: chewing tobacco, which is made up of long strands of tobacco; and snuff tobacco, a fine-grain tobacco that comes in either a moist blend or a dry or nasal form. Moist snuff is the most popular form of snuff and, indeed, is the most popular smokeless tobacco product. The amount of nicotine and nitrosamine varies widely in chewing tobacco and moist snuff, as it does between the different brands within each type (Richter and Spierto 2003; McNeill et al. 2006; Stepanov et al. 2006).

Current Prevalence Among Youth and Young Adults

Per NSDUH, the overall prevalence in 2012 of current use of smokeless tobacco was 2.1% for youth 12–17 years of age (Table 13.10). Current use was substantially more common among males (3.7%) than females (0.4%). In addition, the prevalence of current use of smokeless tobacco was significantly higher among White youth than Black, Hispanic, or "Other" youth; when gender and race/ethnicity are considered, the highest prevalence was among White males (5.8%). The percentage of youth who were current users of smokeless tobacco increased with age; no differences were observed by poverty status.

Patterns of smokeless tobacco use among young adults (18–25 years of age) usually mirrored those of youth (12–17 years of age). The overall prevalence was 5.5% (Table 13.10), and current use was far more common among males (10.5%) than females (0.5%). In addition,

Whites had a significantly higher prevalence of use than Blacks, Hispanic, or "Other" young adults. The prevalence of current use varied little by age among young adults. However, the higher rates for young adults compared with youth are notable. By region, the highest rate of current use among young adults was in the Midwest.

Current Prevalence Among Adults

In 2012, according to NSDUH, the national prevalence of current smokeless tobacco use was 3.6% for all adults (i.e., men and women 18 years of age or older) (Table 13.11). Current use was substantially higher among males (7.1%) than females (0.4%). This significant difference by gender was found for Whites, Hispanics, American Indians/Alaska Natives, and Asians. In addition, there were significant gender differences for every category within educational attainment, age, and poverty status. Because of the extremely low rates of use among females, the patterns by demographic characteristics described below will cover males only. Among racial/ethnic groups, use was highest among American Indians/Alaska Natives (16.2%), a finding that was reported previously (CDC 1987; Schinke et al. 1987; Kaplan et al. 1997). In addition, the use of smokeless tobacco was significantly higher among Whites (9.3%) than Blacks, Hispanics, or Asians. A higher prevalence was found in the groups that were not college graduates. The lowest was among those 65 years of age or older (1.5%). By region, the highest rate of use was in the Midwest and the South.

Trends Over Time in the Use of Smokeless Tobacco

Figure 13.18 shows trend data on the use of smokeless tobacco among youth from 1995–2011 that were derived from the National YRBS. Data on use of smokeless tobacco were first measured by YRBS in 1995, but data from other surveys indicate that the use of smokeless tobacco among youth rose sharply in the early 1990s and peaked around 1995 (USDHHS 2012). As shown in Figure 13.18A, the use of smokeless tobacco by female students was very low throughout the 1995–2011 period. Among male students, use declined from 1995–2003, and was stable from 2003–2011. Use differed by race/ethnicity with White male students having consistently higher rates of use than their Hispanic or Black counterparts (Figure 13.18B). However, due to a decrease in smokeless tobacco use among White males from 1995–2003, the gap between White male students and Black and Hispanic male students

Table 13.10   Prevalence of current smokeless tobacco use[a] among young people, by selected characteristics; National Survey on Drug Use and Health (NSDUH) 2012; United States

Characteristic	12–17 years of age % (95% CI)	18–25 years of age % (95% CI)
Overall	2.1 (1.8–2.3)	5.5 (5.1–5.9)
Gender		
Male	3.7 (3.3–4.2)	10.5 (9.8–11.3)
Female	0.4 (0.3–0.5)	0.5 (0.4–0.7)
Race/ethnicity		
White, non-Hispanic	3.2 (2.9–3.6)	8.6 (8.0–9.2)
Male	5.8 (5.1–6.6)	16.2 (15.1–17.4)
Female	0.5 (0.4–0.8)	0.8 (0.6–1.1)
Black or African American, non-Hispanic	0.4 (0.2–0.8)	0.4 (0.2–0.8)
Male	0.7 (0.4–1.4)	0.9 (0.4–1.6)
Female	0.1 (0.0–0.5)	0.1 (0.0–0.5)
Hispanic or Latino	0.5 (0.3–0.9)	1.7 (1.3–2.3)
Male	0.9 (0.6–1.6)	3.1 (2.2–4.3)
Female	0.1 (0.1–0.4)	0.2 (0.1–0.6)
Other[b]	1.3 (0.8–2.0)	3.2 (2.2–4.6)
Male	2.2 (1.3–3.6)	6.3 (4.3–9.0)
Female	0.3 (0.1–0.8)	0.3 (0.1–1.1)
Age (in years)		
12–13	0.4 (0.3–0.7)	NA
14–15	1.7 (1.4–2.1)	NA
16–17	4.0 (3.5–4.5)	NA
18–20	NA	5.4 (4.8–6.0)
21–23	NA	5.7 (5.1–6.4)
24–25	NA	5.5 (4.7–6.3)
Poverty status		
At or above poverty level	2.2 (2.0–2.5)	6.2 (5.7–6.7)
Below poverty level	1.5 (1.1–2.1)	3.9 (3.3–4.6)
Unknown[c]	NA	5.7 (3.2–10.0)
Region		
Northeast	1.4 (1.1–1.9)	4.1 (3.5–4.9)
Midwest	2.7 (2.3–3.1)	7.6 (6.7–8.6)
South	2.5 (2.0–3.0)	6.2 (5.5–6.9)
West	1.3 (1.0–1.8)	3.7 (3.0–4.5)

Source: 2012 NSDUH: Substance Abuse and Mental Health Services Administration.

Note: **CI** = confidence interval; **NA** = not applicable.

[a]Current smokeless tobacco use is defined as using smokeless tobacco in the 30 days preceding the survey.

[b]Includes Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and persons of 2 or more races.

[c]Respondents 18–22 years of age currently living in a college dormitory are included in the Unknown category.

Table 13.11   Prevalence of current smokeless tobacco use[a] among adults 18 years of age and older, by selected characteristics; National Survey on Drug Use and Health (NSDUH) 2012; United States

Characteristic	Male % (95% CI)	Female % (95% CI)	Total % (95% CI)
Total	7.1 (6.6–7.6)	0.4 (0.3–0.6)	3.6 (3.4–3.9)
Race/ethnicity			
White, non-Hispanic	9.3 (8.7–10.0)	0.3 (0.2–0.4)	4.7 (4.3–5.0)
Black, non-Hispanic	2.3 (1.4–4.0)	1.6 (0.7–3.4)	1.9 (1.2–3.0)
Hispanic	2.3 (1.6–3.3)	0.1 (0.0–0.5)	1.2 (0.9–1.7)
American Indian/Alaska Native, non-Hispanic	16.2 (10.7–23.7)	2.6 (1.2–5.6)	9.3 (6.3–13.5)
Asian, non-Hispanic	0.9 (0.4–1.9)	0.0 (0.0–0.1)	0.4 (0.2–0.9)
Education			
Less than high school	6.4 (5.4–7.6)	1.4 (0.7–3.0)	4.0 (3.3–4.8)
High school graduate	8.7 (7.7–9.7)	0.3 (0.2–0.6)	4.4 (3.9–4.9)
Some college	8.5 (7.5–9.5)	0.3 (0.1–0.5)	3.9 (3.5–4.4)
College graduate	4.7 (4.0–5.5)	0.1 (0.1–0.3)	2.3 (2.0–2.7)
Age group (years)			
18–25	10.5 (9.8–11.3)	0.5 (0.4–0.7)	5.5 (5.1–5.9)
26–44	9.9 (8.9–10.9)	0.3 (0.2–0.5)	5.0 (4.6–5.6)
45–64	5.0 (4.2–5.9)	0.3 (0.2–0.7)	2.6 (2.2–3.1)
≥65	2.7 (1.9–3.8)	0.6 (0.2–1.8)	1.5 (1.0–2.1)
Poverty status			
At or above poverty level	7.2 (6.7–7.7)	0.3 (0.1–0.5)	3.7 (3.4–4.0)
Below poverty level	6.5 (5.4–7.8)	1.0 (0.6–1.8)	3.2 (2.7–3.9)
Unknown[b]	11.1 (6.1–19.2)	0.2 (0.1–0.8)	5.7 (3.2–10.0)
Region			
Northeast	4.2 (3.5–4.9)	0.2 (0.1–0.3)	2.1 (1.7–2.4)
Midwest	9.0 (8.0–10.1)	0.5 (0.2–1.5)	4.6 (4.1–5.3)
South	8.4 (7.6–9.4)	0.5 (0.3–0.9)	4.3 (3.9–4.8)
West	5.5 (4.5–6.6)	0.3 (0.1–0.5)	2.8 (2.4–3.3)

Source: 2012 NSDUH: Substance Abuse and Mental Health Services Administration.
Note: **CI** = confidence interval.
[a]Current smokeless tobacco use is defined as using smokeless tobacco in the 30 days preceding the survey.
[b]Respondents 18–22 years of age currently living in a college dormitory are included in the Unknown category.

Figure 13.18 Trends over time in prevalence (%) of current smokeless tobacco use among high school students, by gender and race/ethnicity (males only); National Youth Risk Behavior Survey (YRBS) 1995–2011; United States

A. Gender
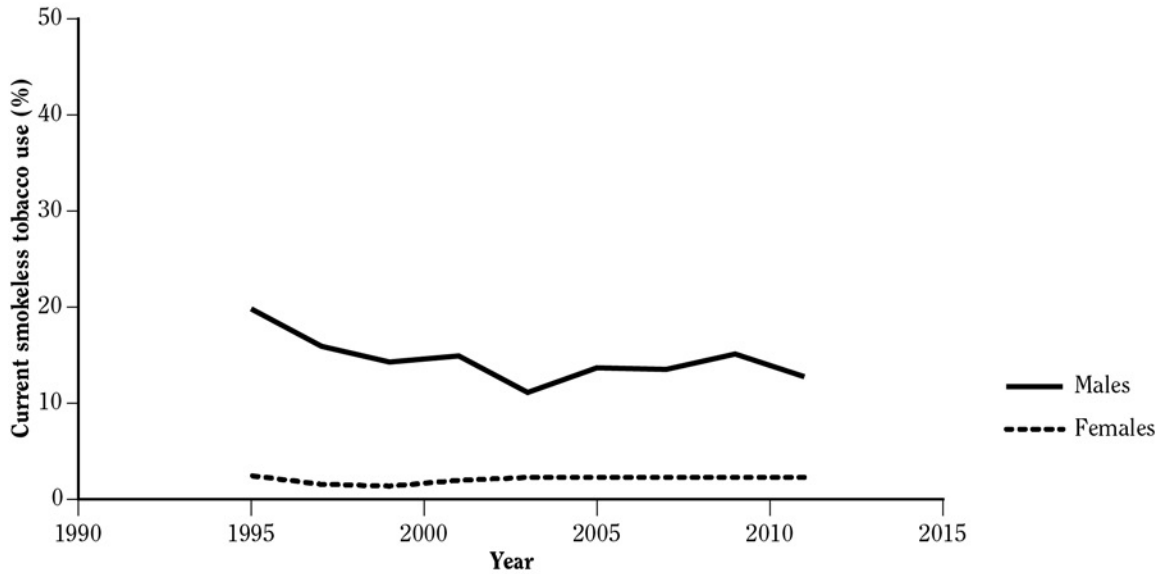
B. Race/ethnicity (males only)
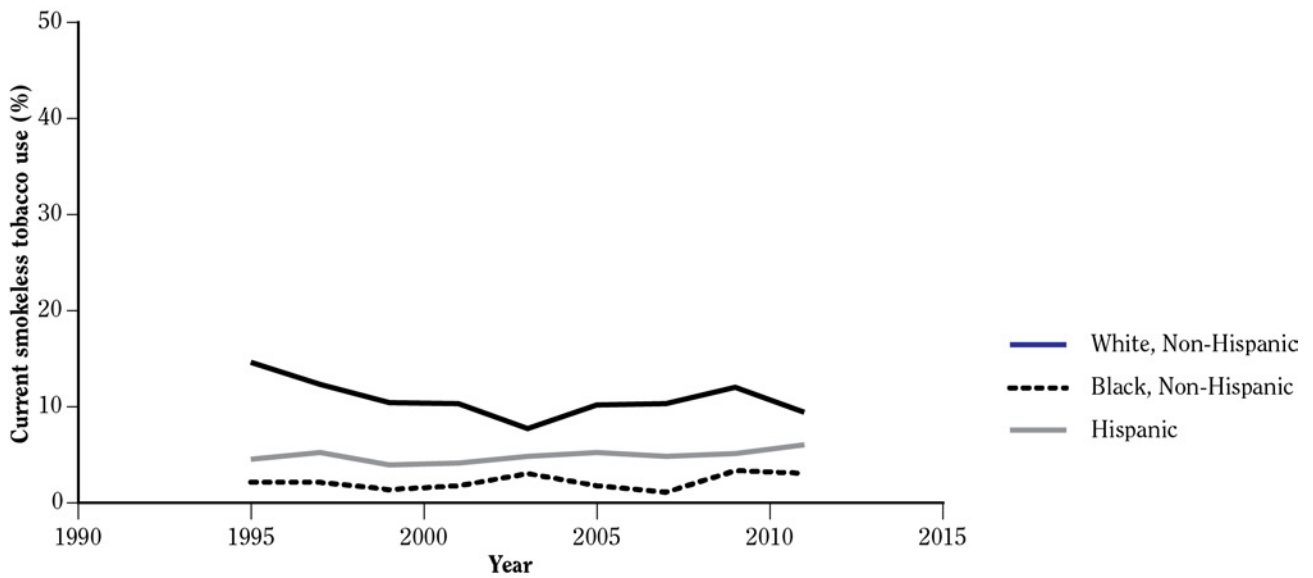
Source: 1995–2011 National YRBS: Centers for Disease Control and Prevention.
Note: Based on responses to the question "During the past 30 days, on how many days did you use chewing tobacco, snuff, or dip, such as Red Man, Levi Garrett, Beech Nut, Skoal, Skoal Bandits, or Copenhagen?" Respondents who reported that they used chewing tobacco, snuff, or dip on at least 1 day during the 30 days before the survey were classified as current smokeless tobacco users.

Figure 13.19 Trends in prevalence (%) of smokeless tobacco use[a] among adults 18 years of age and older, by gender and selected survey years[b]; National Health Interview Survey (NHIS) 1987–2010; United States

Source: 1987–2010 NHIS, National Center for Health Statistics, public use data tapes.

[a]Current users of smokeless tobacco included respondents who reported currently using snuff or chewing tobacco. From 1987 to 1992, this group included those who reported ever using snuff or chewing tobacco or using snuff or chewing tobacco at least 20 times and who specified currently using snuff or chewing tobacco. In 1998, this group included those who reported using snuff or chewing tobacco at least 20 times and who specified currently using snuff or chewing tobacco every day or some days. From 2000 to 2010, this category included those who reported ever using snuff or chewing tobacco or using snuff or chewing tobacco at least 20 times and who specified currently using snuff or chewing tobacco every day or some days.

[b]Data are plotted for 1987, 1991, 1992, 1998, 2000, 2005, and 2010.

has decreased over time. As revealed in Figure 13.18B, the use of smokeless tobacco among Black and Hispanic male students was stable from 1995–2011.

Trend data on the use of smokeless tobacco among adults have been derived from the NHIS; questions on smokeless tobacco use were asked on that survey in 1987, 1991, 1992, 1998, 2000, 2005, and 2010. Across these years (Figure 13.19), use was extremely low among females. For males, prevalence decreased from 1986–2000 but has been increasing since then. Concerning race/ethnicity, a decrease followed by an increase was seen for White males who have had, historically, higher rates of current use of smokeless tobacco than Black or Hispanic males. The prevalence among Black and Hispanic males (Figure 13.20) varied over time, but the erratic trend line among Hispanics should be viewed with caution, given the small sample. Last, three of the four male age groups (i.e., all but the 25–44 years of age group), experienced declines in the use of smokeless tobacco between 1987–2000, but an upward trend was documented for males 18–24 years of

age beginning in 2000 and in the other three age groups from 2005 (Figure 13.21).

Patterns of Cigar Use

The *Excise Tax Reduction Act of 1965* defines a cigar as "any roll of tobacco wrapped in leaf tobacco or in any substance containing tobacco". There are many different types of cigars, including large cigars, cigarillos, and small or little cigars. Small or little cigars closely resemble cigarettes. Despite the wide variety of cigar products, however, a single classification system has not been accepted universally (Baker et al. 2000). Historically, cigar smoking in the United States has been a behavior of older men, but the industry's increased marketing of cigars during the 1990s to targeted groups reversed the low rates of use among adolescents (USDHHS 1998). Correspondingly, the rise in the prevalence of cigar use during the mid-1990s was not limited to adults. Instead, as documented

Figure 13.20 Trends in prevalence (%) of smokeless tobacco use[a] among adult males 18 years of age and older, by race/ethnicity[b] and selected survey years[c]; National Health Interview Survey (NHIS) 1987–2010; United States

Source: 1987–2010 NHIS, National Center for Health Statistics, public use data tapes.
[a]Current users of smokeless tobacco included respondents who reported currently using snuff or chewing tobacco. From 1987 to 1992, this group included those who reported ever using snuff or chewing tobacco or using snuff or chewing tobacco at least 20 times and who specified currently using snuff or chewing tobacco. In 1998, this group included those who reported using snuff or chewing tobacco at least 20 times and who specified currently using snuff or chewing tobacco every day or some days. From 2000 to 2010, this category included those who reported ever using snuff or chewing tobacco or using snuff or chewing tobacco at least 20 times and who specified currently using snuff or chewing tobacco every day or some days.
[b]In 1999, NHIS began reporting race according to the 1997 Revisions to the Standards for the Classification of Federal Data on Race and Ethnicity. Before 1999, data were reported according to the 1977 Standards and thus are not strictly comparable to later years. In 2000, NHIS began reporting Hispanic ethnicity (which includes persons of Hispanic, Latino, or Spanish descent).
[c]Data are plotted for 1987, 1991, 1992, 1998, 2000, 2005, and 2010.
[d]Data for Hispanics were statistically unreliable (relative standard error >30%) for 1987, 1992, 2000, and 2005.

by numerous local, state, and national surveys, cigar use and experimentation was widespread among both male and female adolescents (CDC 1997; Delnevo et al. 2002; Marshall et al. 2006).

Current Prevalence Among Youth and Young Adults

NSDUH data indicate that 2.6% of 12- to 17-year-olds were current smokers of cigars in 2012 (Table 13.12), with current use defined as smoking cigars in the preceding 30 days. Use differed by gender, with males (3.5%) having smoked cigars at slightly over twice the rate of females (1.6%); this gender pattern also held for Whites, Hispanics, and others. By race/ethnicity, White youth had the highest prevalence. Current cigar use rose with increasing age.

In 2012, 10.7% of young adults (18–25 years of age) were current cigar smokers (Table 13.12), and the patterns of use generally mirrored those of youth. Current use among males (16.4%) was over three times that of females (5.1%). Use among females, however, was not inconsequential; in fact, the estimate for Black females was 8.5% in 2012. For young adults overall, the highest prevalence by race/ethnicity was among Whites and Blacks. Notably, despite a large difference in the prevalence of cigar use between 16- to 17-year-olds (5.6%) and 18- to 20-year-olds (11.9%), the prevalence of cigar use among young adults (18–20 years of age) was significantly lower than use among 21- to 23-year-olds and 24- to 25-year-olds. Current use varied by region with the lowest prevalence in the West.

Figure 13.21 **Trends in prevalence (%) of smokeless tobacco use[a] among adult males 18 years of age and older, by age group and selected survey years[b]; National Health Interview Survey (NHIS) 1987–2010; United States**

Source: 1987–2010 NHIS, National Center for Health Statistics, public use data tapes.

[a]Current users of smokeless tobacco included respondents who reported currently using snuff or chewing tobacco. From 1987 to 1992, this group included those who reported ever using snuff or chewing tobacco or using snuff or chewing tobacco at least 20 times and who specified currently using snuff or chewing tobacco. In 1998, this group included those who reported using snuff or chewing tobacco at least 20 times and who specified currently using snuff or chewing tobacco every day or some days. From 2000 to 2010, this category included those who reported ever using snuff or chewing tobacco or using snuff or chewing tobacco at least 20 times and who specified currently using snuff or chewing tobacco every day or some days.

[b]Data are plotted for 1987, 1991, 1992, 1998, 2000, 2005, and 2010.

Current Prevalence Among Adults

For 2012, the estimated prevalence for current cigar use among adults was 5.4% (Table 13.13). The estimate for males (9.1%) was more than four times that for females (2.0%). These gender differences persisted for all racial/ethnic groups as well as by educational status, age, and poverty status, but the magnitude of the difference by gender, when expressed as a ratio, was notably less for young adults than for adults 45–64 or 65 years of age and older. By race/ethnicity, the prevalence was highest among American Indians/Alaska Natives (7.9%), followed by Blacks (7.6%), Whites (5.5%), Hispanics (4.2%), and Asians (1.7%). This pattern was fairly consistent in both genders. The prevalence of cigar use varied little by educational status, except that lower use was observed among those who were college graduates (4.6%). Age and current cigar use were inversely related, with an estimate of 10.7% for those 18–25 years of age and just 1.6% for those 65 years of age or older. Use was more likely among those living below the poverty level (6.6%) than it was for those at or above the poverty level (5.2%). It is useful to highlight here that some research suggests that when faced with higher cigarette prices as a result of increases in the cigarette excise tax, cigarette smokers switch to cigars (Delnevo et al. 2004; Delnevo and Hrywna 2007), and those living below the poverty level are more price sensitive. Regionally, the highest prevalence was in the Northeast (5.9%) and in the West (4.4%).

Trends Over Time in the Use of Cigars

Data from 1997–2011 obtained from the National YRBS indicate that current cigar use among male high school students declined from 1997–2005 and then remained stable from 2005–2011 (Figure 13.22A). Among female students, current cigar use declined from 1997–2011. Current use declined among all three racial/ethnic groups presented in Figure 13.22B. Among White students, current cigar use declined from 1997–2003 and then remained stable from 2003–2011. Among Black students, current cigar use declined from 1997–2007 and

Table 13.12   **Prevalence of current cigar use[a] among young people, by selected characteristics; National Survey on Drug Use and Health (NSDUH) 2012; United States**

Characteristic	12–17 years of age % (95% CI)	18–25 years of age % (95% CI)
Overall	2.6 (2.3–2.9)	10.7 (10.2–11.3)
Gender		
Male	3.5 (3.1–3.9)	16.4 (15.5–17.3)
Female	1.6 (1.4–2.0)	5.1 (4.6–5.7)
Race/ethnicity		
White, non-Hispanic	3.2 (2.9–3.6)	12.1 (11.4–12.9)
Male	4.4 (3.9–5.1)	19.0 (17.8–20.2)
Female	1.9 (1.5–2.4)	5.2 (4.5–5.9)
Black or African American, non-Hispanic	1.9 (1.4–2.6)	11.8 (10.5–13.4)
Male	2.3 (1.6–3.3)	15.5 (13.4–18.0)
Female	1.5 (0.8–2.7)	8.5 (7.0–10.2)
Hispanic or Latino	1.8 (1.4–2.3)	7.3 (6.3–8.5)
Male	2.2 (1.6–3.1)	11.6 (9.7–13.8)
Female	1.3 (0.9–1.9)	2.7 (2.1–3.6)
Other[b]	1.8 (1.2–2.7)	8.0 (6.3–10.2)
Male	2.6 (1.6–4.3)	12.0 (9.0–15.7)
Female	1.0 (0.5–1.7)	4.2 (2.6–6.8)
Age (in years)		
12–13	0.4 (0.2–0.6)	NA
14–15	1.7 (1.4–2.1)	NA
16–17	5.6 (5.0–6.2)	NA
18–20	NA	11.9 (11.1–12.8)
21–23	NA	10.5 (9.7–11.4)
24–25	NA	9.2 (8.3–10.2)
Poverty status		
At or above poverty level	2.6 (2.4–3.0)	10.8 (10.2–11.5)
Below poverty level	2.4 (1.9–2.9)	10.1 (9.1–11.2)
Unknown[c]	NA	14.3 (11.4–17.8)
Region		
Northeast	2.8 (2.3–3.5)	11.1 (9.8–12.5)
Midwest	2.9 (2.5–3.4)	11.8 (10.8–12.9)
South	2.7 (2.2–3.2)	11.3 (10.4–12.2)
West	2.0 (1.6–2.6)	8.8 (7.6–10.0)

Source: 2012 NSDUH: Substance Abuse and Mental Health Services Administration.
Note: **CI** = confidence interval; **NA** = not applicable.
[a]Current cigar use is defined as smoking cigars in the 30 days preceding the survey.
[b]Includes Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and persons of 2 or more races.
[c]Respondents 18–22 years of age currently living in a college dormitory are included in the Unknown category.

Table 13.13 Prevalence of current cigar use[a] among adults 18 years of age and older, by selected characteristics; National Survey on Drug Use and Health (NSDUH) 2012; United States

Characteristic	Male % (95% CI)	Female % (95% CI)	Total % (95% CI)
Total	9.1 (8.5–9.7)	2.0 (1.8–2.3)	5.4 (5.1–5.8)
Race/ethnicity			
White, non-Hispanic	9.5 (8.8–10.3)	1.7 (1.5–2.0)	5.5 (5.1–5.9)
Black, non-Hispanic	12.3 (10.4–14.5)	3.8 (3.1–4.8)	7.6 (6.7–8.7)
Hispanic	6.7 (5.3–8.5)	1.7 (1.2–2.5)	4.2 (3.5–5.2)
American Indian/Alaska Native, non-Hispanic	—[b]	2.5 (1.1–5.5)	7.9 (4.4–13.7)
Asian, non-Hispanic	2.7 (1.4–5.4)	0.7 (0.3–2.0)	1.7 (0.9–2.9)
Education			
Less than high school	10.1 (8.6–11.8)	2.8 (2.1–3.7)	6.5 (5.7–7.5)
High school graduate	8.4 (7.5–9.3)	2.0 (1.6–2.4)	5.1 (4.6–5.6)
Some college	10.7 (9.5–12.0)	2.3 (1.9–2.9)	6.1 (5.5–6.7)
College graduate	8.0 (7.0–9.2)	1.4 (1.0–1.8)	4.6 (4.1–5.2)
Age group (years)			
18–25	16.4 (15.5–17.3)	5.1 (4.6–5.7)	10.7 (10.2–11.3)
26–44	10.3 (9.3–11.4)	2.2 (1.8–2.7)	6.2 (5.7–6.8)
45–64	7.6 (6.5–8.8)	1.4 (1.0–1.9)	4.4 (3.8–5.0)
≥65	3.1 (2.2–4.4)	0.5 (0.2–1.1)	1.6 (1.2–2.2)
Poverty status			
At or above poverty level	8.6 (8.0–9.3)	1.8 (1.5–2.0)	5.2 (4.8–5.5)
Below poverty level	11.6 (10.2–13.3)	3.1 (2.5–3.9)	6.6 (5.9–7.4)
Unknown[c]	23.3 (17.8–29.8)	5.2 (3.4–7.8)	14.3 (11.4–17.8)
Region			
Northeast	10.2 (8.8–11.7)	1.9 (1.4–2.5)	5.9 (5.1–6.7)
Midwest	9.2 (8.2–10.3)	2.3 (1.9–2.8)	5.6 (5.1–6.2)
South	9.6 (8.6–10.7)	2.2 (1.8–2.6)	5.7 (5.2–6.3)
West	7.4 (6.3–8.8)	1.6 (1.2–2.1)	4.4 (3.8–5.2)

Source: 2012 NSDUH: Substance Abuse and Mental Health Services Administration.
Note: **CI** = confidence interval.
[a]Current cigar use is defined as smoking cigars in the 30 days preceding the survey.
[b]Low precision; no estimate reported.
[c]Respondents 18–22 years of age currently living in a college dormitory are included in the Unknown category.

Figure 13.22 Trends over time in prevalence (%) of current cigar smoking among high school students, by gender and race/ethnicity; National Youth Risk Behavior Survey (YRBS) 1997–2011; United States

A. Gender
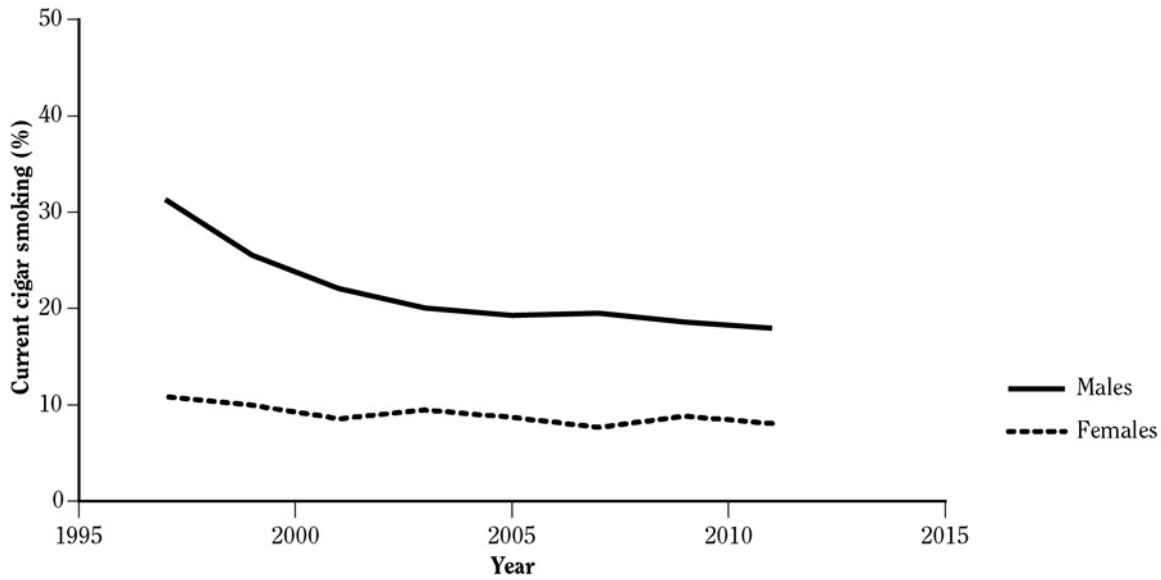
B. Race/ethnicity
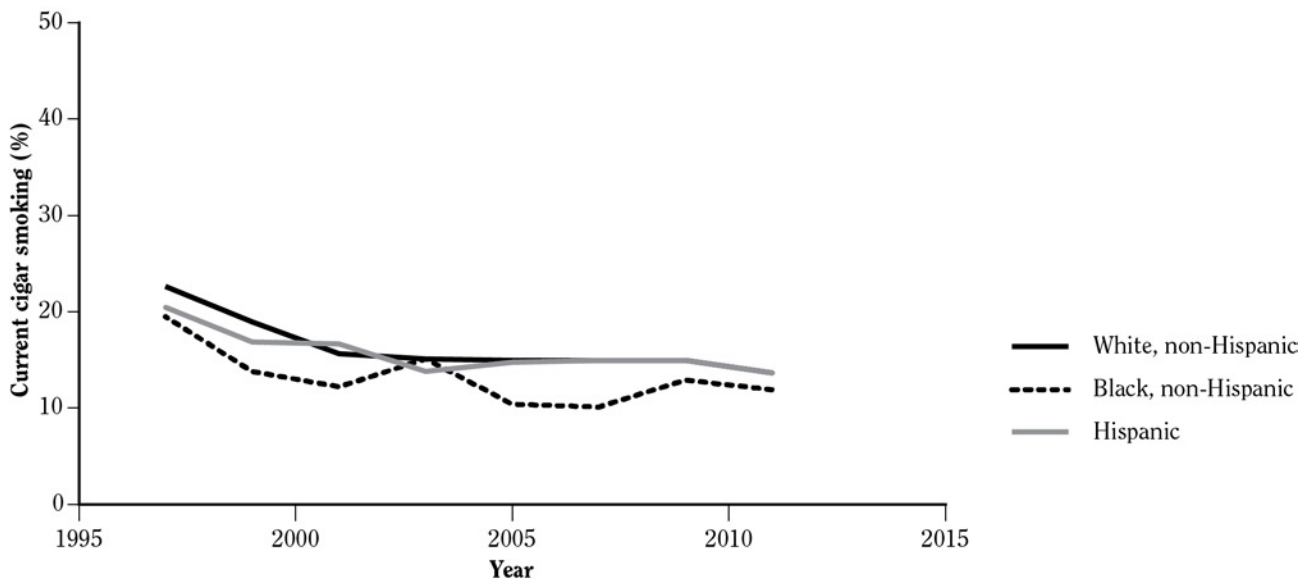
Source: 1997–2011 National YRBS: Centers for Disease Control and Prevention.
Note: Based on responses to the question "During the past 30 days, on how many days did you smoke cigars, cigarillos, or little cigars?" Respondents who reported that they had smoked cigars, cigarillos, or little cigars on at least 1 day during the 30 days before the survey were classified as current cigar users.

then remained stable from 2007–2011. Among Hispanic students, current cigar use declined from 1997–2011.

Trend data on adult cigar smoking are derived from NHIS; questions on cigar use were asked on that survey in 1987, 1991, 1992, 1998, 2000, 2005, and 2010. Per Figure 13.23, the prevalence of cigar use was extremely low among females across the period of interest. Among adult males, prevalence decreased from 1986–1992, then increased through 1998 and was essentially stable thereafter. When examined by racial/ethnic groups (Figure 13.24), there was no clear trend among Hispanic and Black non-Hispanic males. Figure 13.25 highlights trends in adult male cigar use by age groups. Cigar use declined among all age groups from 1987–1992 and then began to rise for all groups, except those 65 years of age and older. The increase peaked in 1998 and then remained relatively flat through 2010 for 18- to 24-year-olds and 25- to 44-year-olds. However, cigar use among 45- to 64-year-olds increased slightly from 1998–2010.

Patterns of Polytobacco Use

The use of multiple tobacco products—also called polytobacco use, dual use, or concurrent use—is common among some tobacco users (Backinger et al. 2008). In 2012, per NSDUH (Table 13.14), an estimated 8.6% of youth (12–17 years of age), 38.1% of young adults, and 27.0% of adults (26 years of age or older) were current users of one or more tobacco products. Most users used only one tobacco product (predominantly cigarettes), but 2.6% of youth, 10.1% of young adults, and 3.7% of adults used more than one product. The most common combination in all three age groups was cigarettes and cigars; for roughly one-half of polytobacco users, this was the combination employed.

Figure 13.23 Trends in prevalence (%) of current cigar use[a] among adults 18 years of age and older, by gender and selected survey years[b]; National Health Interview Survey (NHIS) 1987–2010; United States
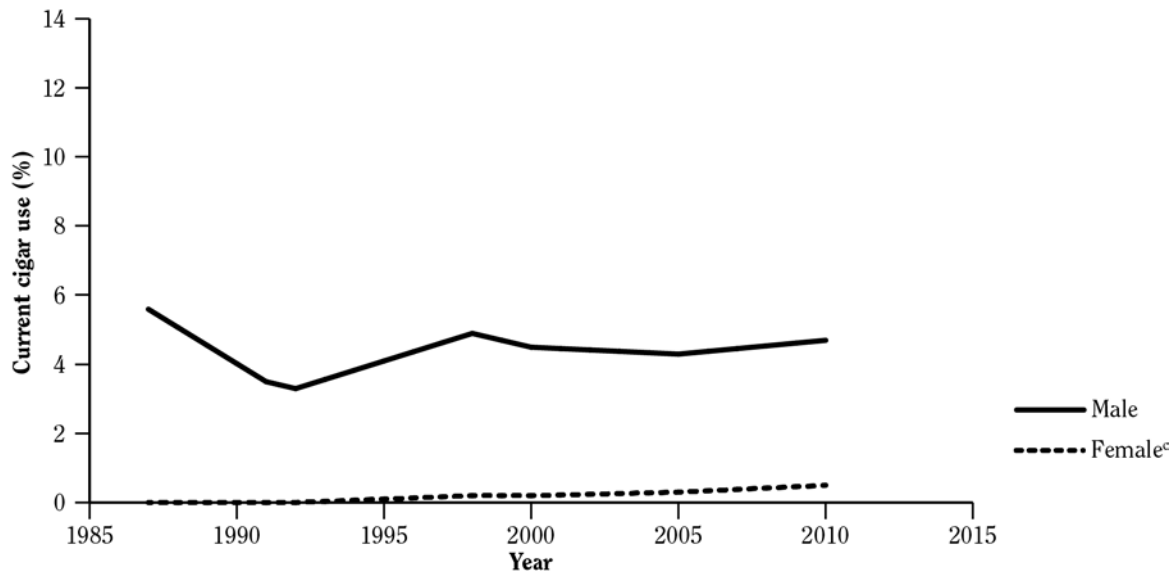
Source: 1987–2010 NHIS, National Center for Health Statistics, public use data tapes.
[a]Current users of cigars included respondents who reported currently using cigars. From 1987 to 1992, this group included those who reported ever smoking cigars and who specified smoking cigars now. From 1998 to 2010, this group included those who reported ever smoking cigars and who specified currently smoking cigars every day or some days.
[b]Data are plotted for 1987, 1991, 1992, 1998, 2000, 2005, and 2010.
[c]Data for females were statistically unreliable (relative standard error >30%) for 1987, 1991, and 1992.

Figure 13.24 Trends in prevalence (%) of current cigar use[a] among adult males 18 years of age and older, by race/ethnicity[b] and selected survey years[c]; National Health Interview Survey (NHIS) 1987–2010; United States

Source: 1987–2010 NHIS, National Center for Health Statistics, public use data tapes.

[a]Current users of cigars included respondents who reported currently using cigars. From 1987 to 1992, this group included those who reported ever smoking cigars or smoking at least 50 cigars and who specified smoking cigars now. From 1998 to 2010, this category included those who reported ever smoking cigars or smoking at least 50 cigars and who specified currently smoking cigars every day or some days.

[b]In 1999, NHIS began reporting race according to the 1997 Revisions to the Standards for the Classification of Federal Data on Race and Ethnicity. Before 1999, data were reported according to the 1977 Standards and thus are not strictly comparable to later years. In 2000, NHIS began reporting Hispanic ethnicity (which includes persons of Hispanic, Latino, or Spanish descent).

[c]Data are plotted for 1987, 1991, 1992, 1998, 2000, 2005, and 2010.

[d]Data for Hispanics were statistically unreliable (relative standard error >30%) for 1992.

Current Prevalence Among Youth and Young Adults

Among youth, polytobacco use in 2012 (Table 13.15) was higher among males (3.7%) than females (1.5%), primarily because smokeless tobacco and cigar use are more common among males. Polytobacco use was higher among White youth (3.6%) than Hispanic (1.6%) or Black (1.1%) youth. Consistent with other prevalence trends, polytobacco use increased with age. No discernible trend was observed by region.

The prevalence of polytobacco use among young adults (18–25 years of age) was four times that of youth (Table 13.15). Among young adults, the difference between males (16.1%) and females (3.9%) was more pronounced than it was among youth. Racial/ethnic differences in polytobacco use mirrored that of youth. Moreover, polytobacco use was higher among White young adult males (20.7%) than any other group. Use of more than one tobacco prod-

uct was highest at 18–20 years of age (10.6%) and 21–23 years of age (10.2%). Regionally, the highest prevalence of polytobacco use was observed in the Midwest and South.

Current Prevalence Among Adults

Among adults (18 years of age or older), the prevalence of polytobacco use in 2012 was much higher among males (7.9%) than females (1.6%) (Table 13.16). The prevalence varied by race/ethnicity. It was highest among American Indians/Alaska Natives (6.8%) and Blacks (5.3%) and lowest among Asians (1.0%). Polytobacco use increased as educational level decreased. The patterns by age group reflect those described previously for cigarettes, cigars, and smokeless tobacco, with prevalence inversely related to age group. Last, polytobacco use among those below the poverty level (7.0%) was almost twice that of those at or above the poverty level (4.1%).

Figure 13.25 Trends in prevalence (%) of current cigar use[a] among adult males 18 years of age and older, by age group and selected survey years[b], National Health Interview Survey (NHIS) 1987–2010; United States
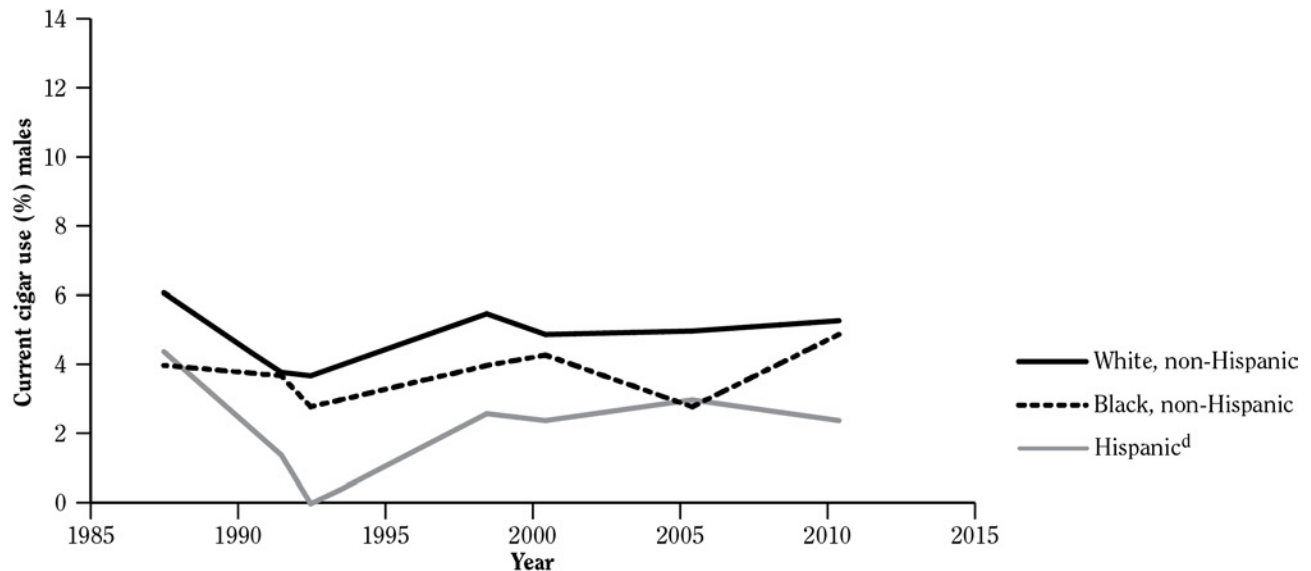

Source: 1987–2010 NHIS, National Center for Health Statistics, public use data tapes.

[a]Current users of cigars included respondents who reported currently using cigars. From 1987 to 1992, this group included those who reported ever smoking cigars or smoking at least 50 cigars and who specified smoking cigars now. From 1998 to 2010, this category included those who reported ever smoking cigars or smoking at least 50 cigars and who specified currently smoking cigars every day or some days.

[b]Data are plotted for 1987, 1991, 1992, 1998, 2000, 2005, and 2010.

[c]Data for adults 18–24 years of age were statistically unreliable (relative standard error >30%) for 1992.

Patterns of New and Emerging Products Use

Current Prevalence Among Youth and Young Adults

An analysis of data from the 2011 and 2012 National Youth Tobacco Survey (NYTS) provided an updated definition of current tobacco use, in which hookah, snus, dissolvable tobacco, and electronic cigarettes were added to take into account nonconventional products that are either new to the market and/or are increasing in popularity. The previous definition for current tobacco use included only cigarettes, cigars, smokeless tobacco, pipes, bidis, and kreteks, thus yielding slightly lower estimates of current tobacco use. For example, in 2011, the previous definition for overall current tobacco use resulted in estimates of 7.1% for middle school and 23.2% for high school students, whereas the new definition resulted in 2011 estimates of 7.5% for middle school and 24.3% for high school students (Tables 13.17–13.18). In 2012, the prevalence of current tobacco use among middle and high school students was 6.7% and 23.3%, respectively. After cigarettes, cigars were the second most commonly used tobacco product at 2.8% and 12.6%, respectively.

Data for four tobacco products—hookah, snus, dissolvable tobacco, and electronic cigarettes, were first collected in the NYTS in 2011. During 2011–2012—current use of electronic cigarettes nearly doubled among both middle school (0.6% to 1.1%) and high school (1.5% to 2.8%) students, and hookah use increased among high school students (4.1% to 5.4%). During the same period, significant decreases occurred in current use of bidis and kreteks among both middle and high school students, as well as in dissolvable tobacco use among high school students. A substantial proportion of youth tobacco use occurs with products other than cigarettes, so monitoring and prevention of youth tobacco use needs to incorporate other products, including those that are new or emerging.

Electronic Cigarettes

During 2011–2012, data from the NYTS suggested a doubling of electronic cigarette use among U.S. middle

Table 13.14   **Prevalence of current use of multiple tobacco products by age group; National Survey on Drug Use and Health (NSDUH) 2012; United States**

Tobacco products[a]	12–17 years of age % (95% CI)	18–25 years of age % (95% CI)	≥26 years of age % (95% CI)
No tobacco use	91.4 (90.9–91.8)	61.9 (61.0–62.9)	73.0 (72.2–73.8)
User, any tobacco products	8.6 (8.2–9.1)	38.1 (37.1–39.0)	27.0 (26.2–27.8)
Cigarettes only	4.1 (3.8–4.5)	22.5 (21.7–23.3)	19.0 (18.3–19.8)
Smokeless tobacco only	0.9 (0.7–1.0)	1.7 (1.5–2.0)	2.0 (1.8–2.3)
Cigars only	0.8 (0.7–1.0)	3.4 (3.1–3.7)	1.9 (1.7–2.2)
Pipe only	0.2 (0.1–0.3)	0.4 (0.3–0.6)	0.3 (0.2–0.4)
Multiple tobacco products	2.6 (2.4–2.9)	10.1 (9.6–10.6)	3.7 (3.4–4.0)
Cigarettes + smokeless only	0.6 (0.5–0.8)	2.1 (1.9–2.3)	0.8 (0.7–0.9)
Cigarettes + cigars only	1.1 (0.9–1.2)	5.1 (4.7–5.5)	2.0 (1.8–2.2)
Cigarettes + pipe only	0.2 (0.1–0.3)	0.5 (0.4–0.6)	0.2 (0.2–0.3)
Smokeless + cigars only	0.1 (0.1–0.2)	0.5 (0.4–0.6)	0.2 (0.1–0.3)
Smokeless + pipe only	_[b]	0.0 (0.0–0.1)	0.0 (0.0–0.1)
Cigars + pipe only	0.0 (0.0–0.1)	0.2 (0.1–0.3)	0.1 (0.1–0.2)
Cigarettes + smokeless + cigars only	0.3 (0.2–0.4)	1.0 (0.9–1.2)	0.2 (0.1–0.2)
Cigarettes + smokeless + pipe only	0.0 (0.0–0.1)	0.0 (0.0–0.1)	0.1 (0.0–0.2)
Cigarettes + cigars + pipe only	0.1 (0.1–0.2)	0.5 (0.4–0.6)	0.1 (0.1–0.2)
Cigars + smokeless + pipe only	0.0 (0.0–0.0)	0.0 (0.0–0.0)	_[b]
Cigarettes + cigars + smokeless + pipe	0.1 (0.0–0.1)	0.1 (0.1–0.2)	0.0 (0.0–0.0)

Source: 2012 NSDUH: Substance Abuse and Mental Health Administration.
Note: **CI** = confidence interval.
[a]Tobacco products include cigarettes, smokeless tobacco (i.e., chewing tobacco and snuff), cigars, and pipe tobacco.
[b]Low precision; no estimate reported.

and high school students. Among all students in grades 6–12, ever use of electronic cigarettes increased from 3.3% to 6.8% (Tables 13.17–13.18); current electronic cigarette use increased from 1.1% to 2.1%, and current use of both electronic-cigarettes and conventional cigarettes increased from 0.8% to 1.6%. In 2012, among ever electronic cigarette users, 9.3% reported never smoking conventional cigarettes; among current electronic cigarette users, 76.3% reported current conventional cigarette smoking.

Among middle school students, ever electronic cigarette use increased from 1.4% to 2.7% during 2011–2012 (Tables 13.17–13.18); current electronic cigarette use increased from 0.6% to 1.1% (p <0.05), and current use of both electronic cigarettes and conventional cigarettes increased from 0.3% to 0.7%. In 2012, among middle school ever electronic cigarette users, 20.3% reported never smoking conventional cigarettes; among middle school current electronic cigarette users, 61.1% reported current conventional cigarette smoking.

Among high school students, ever electronic cigarette use increased from 4.7% to 10.0% during 2011–2012 (Tables 13.17–13.18); current electronic cigarette use increased from 1.5% to 2.8%, and current use of both electronic cigarettes and conventional cigarettes increased from 1.2% to 2.2%. In 2012, among high school ever electronic cigarette users, 7.2% reported never smoking conventional cigarettes; among high school current electronic cigarette users, 80.5% reported current conventional cigarette smoking. Patterns of use by race/ethnicity are shown in Table 13.18.

Current Prevalence Among Adults

Given the range of tobacco products currently being used by adults, including new and emerging tobacco products that have been heavily marketed, definitions of overall current tobacco use for adults should incorporate a range of products. NSDUH provides data on several tobacco products in addition to cigarettes, including smokeless tobacco, cigars, and pipe tobacco (Table 13.19).

Table 13.15   Prevalence of current use of multiple tobacco products[a] among young people, by selected characteristics; National Survey on Drug Use and Health (NSDUH) 2012; United States

Characteristic	12–17 years of age % (95% CI)	18–25 years of age % (95% CI)
Overall	2.6 (2.4–2.9)	10.1 (9.6–10.6)
Gender		
Male	3.7 (3.3–4.1)	16.1 (15.3–17.0)
Female	1.5 (1.2–1.8)	3.9 (3.5–4.4)
Race/ethnicity		
White, non-Hispanic	3.6 (3.2–4.0)	12.7 (12.0–13.5)
Male	5.2 (4.6–5.9)	20.7 (19.5–21.9)
Female	1.9 (1.5–2.3)	4.7 (4.1–5.4)
Black or African American, non-Hispanic	1.1 (0.7–1.8)	6.8 (5.7–8.0)
Male	1.3 (0.7–2.3)	9.6 (7.8–11.7)
Female	0.9 (0.4–2.0)	4.2 (3.1–5.7)
Hispanic or Latino	1.6 (1.2–2.1)	5.8 (4.8–6.8)
Male	2.1 (1.5–2.9)	9.4 (7.8–11.3)
Female	1.1 (0.8–1.7)	1.8 (1.3–2.6)
Other[b]	1.4 (0.9–2.2)	8.1 (6.3–10.4)
Male	1.9 (1.0–3.4)	13.1 (9.9–17.0)
Female	0.9 (0.5–1.7)	3.4 (1.9–6.0)
Age (in years)		
12–13	0.5 (0.3–0.7)	NA
14–15	1.7 (1.4–2.1)	NA
16–17	5.5 (4.9–6.1)	NA
18–20	NA	10.6 (9.8–11.5)
21–23	NA	10.2 (9.4–11.0)
24–25	NA	9.0 (8.0–10.0)
Poverty status		
At or above poverty level	2.7 (2.4–3.0)	10.4 (9.8–11.0)
Below poverty level	2.5 (1.9–3.1)	9.1 (8.2–10.2)
Unknown[c]	NA	11.3 (8.2–15.3)
Region		
Northeast	1.8 (1.4–2.3)	9.3 (8.1–10.5)
Midwest	3.1 (2.7–3.6)	11.7 (10.6–12.8)
South	3.0 (2.5–3.6)	11.0 (10.2–11.9)
West	2.1 (1.7–2.7)	7.8 (6.8–8.9)

Source: 2012 NSDUH: Substance Abuse and Mental Health Services Administration.
Note: **CI** = confidence interval; **NA** = not applicable.
[a]Multiple use is defined as using 2 or more tobacco products. Tobacco products include cigarette, smokeless tobacco (i.e., chewing tobacco and snuff), cigars, and pipe tobacco.
[b]Includes Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and persons of 2 or more races.
[c]Respondents 18–22 years of age currently living in a college dormitory are included in the Unknown category.

Table 13.16   Prevalence of current use of multiple toba   cco products[a] among adults 18 years of age and older, by selected characteristics; National Survey on Drug Use and Health (NSDUH) 2012; United States

Characteristic	Male % (95% CI)	Female % (95% CI)	Total % (95% CI)
Total	7.9 (7.4–8.4)	1.6 (1.4–1.8)	4.6 (4.4–4.9)
Race/ethnicity			
White, non-Hispanic	8.7 (8.1–9.3)	1.5 (1.3–1.8)	5.0 (4.7–5.3)
Black, non-Hispanic	9.3 (7.6–11.3)	2.0 (1.5–2.8)	5.3 (4.5–6.3)
Hispanic	4.8 (3.7–6.1)	1.5 (1.0–2.2)	3.1 (2.5–3.9)
American Indian/Alaska Native, non-Hispanic	12.0 (7.3–19.2)	1.8 (0.8–4.0)	6.8 (4.2–10.8)
Asian, non-Hispanic	1.1 (0.7–1.8)	0.9 (0.4–2.3)	1.0 (0.6–1.7)
Education			
Less than high school	10.9 (9.5–12.5)	2.9 (2.2–3.8)	7.0 (6.2–8.0)
High school graduate	9.0 (8.1–10.0)	1.5 (1.2–1.9)	5.2 (4.7–5.7)
Some college	9.1 (8.2–10.2)	1.8 (1.4–2.2)	5.1 (4.6–5.6)
College graduate	4.0 (3.3–4.8)	0.9 (0.6–1.3)	2.4 (2.0–2.8)
Age group (years)			
18–25	16.1 (15.3–17.0)	3.9 (3.5–4.4)	10.1 (9.6–10.6)
26–44	10.2 (9.2–11.2)	1.8 (1.5–2.3)	5.9 (5.4–6.5)
45–64	5.2 (4.3–6.3)	1.0 (0.7–1.4)	3.1 (2.6–3.6)
≥65	1.2 (0.7–1.9)	0.5 (0.2–1.1)	0.8 (0.5–1.2)
Poverty status			
At or above poverty level	7.0 (6.5–7.6)	1.3 (1.1–1.5)	4.1 (3.9–4.4)
Below poverty level	12.8 (11.3–14.5)	3.0 (2.3–3.7)	7.0 (6.2–7.8)
Unknown[b]	19.9 (14.1–27.3)	2.5 (1.4–4.5)	11.3 (8.2–15.3)
Region			
Northeast	6.5 (5.6–7.4)	1.3 (1.0–1.9)	3.8 (3.3–4.3)
Midwest	8.2 (7.3–9.1)	1.9 (1.6–2.4)	5.0 (4.5–5.5)
South	9.5 (8.6–10.5)	1.7 (1.4–2.1)	5.4 (5.0–5.9)
West	6.1 (5.1–7.3)	1.3 (0.9–1.8)	3.7 (3.1–4.3)

Source: 2012 NSDUH: Substance Abuse and Mental Health Services Administration.
Note: **CI** = confidence interval.
[a]Multiple use is defined as using 2 or more tobacco products. Tobacco products include cigarette, smokeless tobacco (i.e., chewing tobacco and snuff), cigars, and pipe tobacco.
[b]Respondents 18–22 years of age currently living in a college dormitory are included in the Unknown category.

Table 13.17   Percent current use^a of tobacco by product, school level, and gender; National Youth Tobacco Survey 2011 and 2012; United States

	Total				Female				Male			
	2011		2012		2011		2012		2011		2012	
	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)
Middle School												
Tobacco^b	7.5	(6.5–8.8)	6.7	(5.8–7.7)	5.9	(4.7–7.4)	5.6	(4.7–6.7)	9.0	(7.9–10.3)	7.8	(6.7–9.0)
Both combustible & noncombustible tobacco^c	1.9	(1.5–2.5)	2.0	(1.6–2.5)	1.6	(1.2–2.1)*	1.6	(1.2–2.1)*	2.2	(1.7–3.0)	2.5	(2.0–3.1)
Only combustible^d	4.5	(3.7–5.5)	3.7	(3.2–4.3)	3.8	(2.8–5.0)	3.5	(2.8–4.4)	5.2	(4.3–6.2)†	3.9	(3.4–4.5)†
Only noncombustible^e	1.1	(0.8–1.4)	1.0	(0.7–1.3)	0.5	(0.3–0.9)	0.5	(0.3–0.8)	1.6	(1.2–2.3)	1.4	(1.0–2.0)
Cigarettes	4.3	(3.5–5.2)	3.5	(2.8–4.3)	4.0	(3.1–5.2)	3.2	(2.5–4.0)	4.5	(3.7–5.5)	3.8	(3.0–4.7)
Cigars	3.5	(2.8–4.2)	2.8	(2.4–3.4)	2.5	(1.9–3.4)	2.4	(1.9–3.2)	4.3	(3.4–5.4)	3.2	(2.7–3.8)
Smokeless tobacco	2.2	(1.8–2.7)	1.7	(1.3–2.1)	1.4	(1.0–2.0)	1.2	(0.8–1.6)	3.0	(2.3–3.8)	2.2	(1.7–2.9)
Pipes	2.2	(1.7–2.9)	1.8	(1.4–2.3)	1.8	(1.3–2.5)	1.7	(1.3–2.3)	2.7	(2.1–3.5)	1.9	(1.4–2.4)
Bidis	1.7	(1.3–2.2)†	0.6	(0.5–0.7)†	1.4	(1.0–1.9)†	0.4	(0.3–0.7)†	1.9	(1.4–2.6)†	0.7	(0.5–1.0)†
Kreteks	1.1	(0.9–1.4)†	0.5	(0.4–0.7)†	0.9	(0.6–1.3)†	0.4	(0.3–0.7)†	1.3	(1.0–1.6)†	0.6	(0.4–0.9)†
Hookah	1.0	(0.8–1.4)	1.3	(1.0–1.7)	1.0	(0.6–1.6)	1.0	(0.7–1.4)	1.1	(0.7–1.5)	1.5	(1.1–2.2)
Snus	0.9	(0.6–1.2)	0.8	(0.6–1.0)	0.8	(0.5–1.2)	0.6	(0.4–0.9)	1.0	(0.6–1.4)	1.0	(0.7–1.4)
Dissolvable tobacco	0.3	(0.2–0.4)*	0.5	(0.4–0.8)*	0.3	(0.2–0.5)*	0.4	(0.2–0.6)*	0.3	(0.1–0.5)*	0.7	(0.4–1.1)*
Electronic cigarettes	0.6	(0.4–0.9)†	1.1	(0.9–1.5)†	0.4	(0.2–0.7)†	0.8	(0.6–1.1)†	0.7	(0.4–1.3)†	1.5	(1.1–2.1)†
High School												
Tobacco	24.3	(22.1–26.6)	23.3	(21.6–25.2)	19.0	(17.0–21.1)	18.1	(16.2–20.1)	29.4	(26.6–32.4)	28.3	(26.2–30.6)
Both combustible & noncombustible tobacco	6.2	(5.1–7.5)	6.8	(5.9–7.9)	2.0	(1.5–2.6)†	3.4	(2.8–4.2)†	10.3	(8.4–12.4)	10.1	(8.6–11.7)
Only combustible	15.7	(14.6–16.8)	14.4	(13.2–15.6)	16.3	(14.4–18.3)	14.2	(12.6–15.9)	15.0	(13.8–16.3)	14.6	(13.3–15.9)
Only noncombustible	2.4	(1.8–3.2)	2.1	(1.7–2.7)	0.7	(0.4–1.1)	0.5	(0.3–0.7)	4.1	(3.1–5.5)	3.7	(2.9–4.8)
Cigarettes	15.8	(13.7–18.1)	14.0	(12.5–15.7)	13.8	(11.7–16.2)	11.7	(10.2–13.4)	17.7	(15.2–20.4)	16.3	(14.5–18.3)
Cigars	11.6	(10.5–12.7)	12.6	(11.4–13.9)	7.4	(6.3–8.6)	8.4	(7.2–9.8)	15.7	(14.3–17.2)	16.7	(15.0–18.5)
Smokeless tobacco	7.3	(5.9–9.0)	6.4	(5.5–7.5)	1.6	(1.2–2.2)	1.5	(1.1–2.1)	12.9	(10.4–15.9)	11.2	(9.5–13.0)
Pipes	4.0	(3.4–4.6)	4.5	(4.0–5.2)	2.8	(2.2–3.4)	3.2	(2.7–3.9)	5.1	(4.3–6.0)	5.8	(5.0–6.7)

Table 13.17 Continued

	Total				Female				Male			
	2011		**2012**		**2011**		**2012**		**2011**		**2012**	
	%	**(95% CI)**	**%**	**(95% CI)**	**%**	**(95% CI)**	**%**	**(95% CI)**	**%**	**(95% CI)**	**%**	**(95% CI)**
Bidis	2.0	(1.6–2.5)†	0.9	(0.7–1.1)†	1.0	(0.7–1.4)†	0.5	(0.3–0.7)†	2.9	(2.3–3.7)†	1.3	(1.0–1.7)†
Kreteks	1.7	(1.4–2.0)†	1.0	(0.8–1.2)†	0.8	(0.6–1.2)†	0.5	(0.3–0.7)†	2.4	(1.9–2.9)†	1.5	(1.1–1.9)†
Hookah	4.1	(3.4–5.0)†	5.4	(4.6–6.3)†	3.5	(2.8–4.4)	4.5	(3.7–5.4)	4.8	(3.7–6.1)	6.2	(5.3–7.3)
Snus	2.9	(2.3–3.7)	2.5	(2.0–3.0)	0.8	(0.5–1.1)	0.9	(0.7–1.3)	5.1	(3.9–6.6)	3.9	(3.2–4.9)
Dissolvable tobacco	2.0	(1.6–2.5)†	0.8	(0.6–1.0)†	0.1	(0.1–0.4)*	0.6	(0.4–0.9)*	0.6	(0.4–1.0)	1.0	(0.8–1.4)
Electronic cigarettes	1.5	(1.2–2.0)†	2.8	(2.3–3.5)†	0.7	(0.5–1.0)†	1.9	(1.5–2.4)†	2.3	(1.7–3.1)†	3.7	(2.9–4.8)†

Source: National Youth Tobacco Survey 2011–2012.

Note: **CI** = confidence interval.

aCurrent use of cigarettes was determined by asking, "During the past 30 days, on how many days did you smoke cigarettes?"; Current use of cigars was determined by asking, "During the past 30 days, on how many days did you smoke cigars, cigarillos, or little cigars?"; Current use of smokeless tobacco was determined by asking, "During the past 30 days, on how many days did you use chewing tobacco, snuff, or dip?"; Current use of pipe was determined by asking, "During the past 30 days, on how many days did you smoke tobacco in a pipe?"; In 2011, current use of bidis and kreteks were determined by asking, "During the past 30 days, on how many days did you smoke bidis?" and "During the past 30 days, on how many days did you smoke kreteks?"; In 2012, current use of bidis and kreteks were determined by asking, "During the past 30 days, which of the following products have you used on at least one day?"; Current use of hookah, snus, dissolvable tobacco, and electronic cigarettes were determined by asking, "During the past 30 days, which of the following products have you used on at least one day?"

bTobacco is use of cigarettes or cigars or smokeless tobacco or tobacco pipes or bidis or kreteks or hookah or snus or dissolvable tobacco or electronic cigarettes on ≥1 day in the past 30 days.

cBoth combustible & noncombustible tobacco is use of cigarettes or cigars or tobacco pipes or bidis or kreteks or hookah and smokeless tobacco or snus or dissolvable tobacco or electronic cigarettes on ≥1 day in the past 30 days.

dOnly combustible tobacco is use of cigarettes or cigars or tobacco pipes or bidis or kreteks or hookah on ≥1 day in the past 30 days and no use of smokeless tobacco, snus, dissolvable tobacco, and electronic cigarettes in the past 30 days.

eOnly noncombustible tobacco is use of smokeless tobacco or snus or dissolvable tobacco or electronic cigarettes on ≥1 day in the past 30 days and no use of cigarettes, cigars, tobacco pipes, bidis, kreteks, and hookah in the past 30 days.

*Data statistically unreliable due to sample size <50 OR relative standard error >0.3 on at least 1 year's data; thus, no t-test was done.

†p-value of the t-test for difference between 2011 and 2012 prevalences is <0.05.

Table 13.18 Percent current use^a of tobacco by product, school level, and race/ethnicity; National Youth Tobacco Survey 2011 and 2012; United States

	White, non-Hispanic				Black, non-Hispanic				Hispanic				Other, non-Hispanic			
	2011		2012		2011		2012		2011		2012		2011		2012	
	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)
Middle School																
Tobacco^b	6.2	(5.1–7.4)	5.1	(4.2–6.3)	8.5	(6.6–10.9)	7.7	(5.9–10.1)	11.5	(10.2–13.1)	10.5	(8.6–12.8)	6.1	(3.8–9.9)	3.1	(1.7–5.4)
Both combustible & noncombustible tobacco^c	2.0	(1.4–2.6)	1.7	(1.3–2.2)	0.9	(0.4–1.8)*	1.4	(1.0–2.0)*	2.8	(2.1–3.7)	3.4	(2.5–4.6)	2.0	(1.1–3.6)*	1.2	(0.5–2.8)*
Only combustible^d	3.0	(2.2–4.0)	2.5	(2.0–3.1)	7.0	(5.3–9.0)	5.6	(4.3–7.3)	7.8	(6.8–9.1)†	6.1	(4.9–7.5)†	2.8	(1.5–5.0)*	1.4	(0.7–2.7)*
Only noncombustible^e	1.2	(0.8–1.7)	1.0	(0.7–1.4)	0.7	(0.4–1.3)*	0.7	(0.3–2.0)*	0.9	(0.6–1.4)	1.0	(0.6–1.8)	1.3	(0.6–3.2)*	0.5	(0.2–1.3)*
Cigarettes	3.8	(2.8–5.1)	3.1	(2.4–4.0)	3.6	(2.6–5.0)	2.6	(1.7–4.0)	6.7	(5.6–8.0)	5.4	(4.2–7.1)	3.4	(2.0–5.8)*	1.7	(0.8–3.6)*
Cigars	2.3	(1.7–3.0)	1.6	(1.2–2.0)	5.7	(4.3–7.4)	5.0	(3.8–6.6)	6.1	(4.9–7.4)	4.9	(3.8–6.4)	1.6	(0.8–3.2)*	1.5	(0.7–3.1)*
Smokeless tobacco	2.3	(1.8–2.9)	1.6	(1.1–2.2)	1.0	(0.5–2.1)*	0.6	(0.3–1.3)*	2.9	(2.3–3.6)	2.4	(1.7–3.4)	2.4	(1.2–4.8)*	1.4	(0.7–3.1)*
Pipes	1.5	(1.1–2.2)	1.2	(0.8–1.7)	1.3	(0.8–2.1)*	1.2	(0.6–2.2)*	5.0	(4.2–6.1)	3.7	(2.7–5.1)	2.5	(1.2–5.0)*	0.5	(0.2–1.1)*
Bidis	1.0	(0.7–1.5)*	0.3	(0.2–0.5)*	1.9	(1.1–3.2)*	0.6	(0.4–1.0)*	3.5	(2.6–4.6)†	1.2	(0.8–1.8)†	1.2	(0.5–2.8)*	0.7	(0.2–2.4)*
Kreteks	0.6	(0.4–0.6)	0.3	(0.2–0.5)	0.9	(0.5–1.6)*	0.2	(0.1–0.7)*	2.5	(2.0–3.3)†	1.0	(0.6–1.7)†	1.8	(0.7–4.3)*	0.7	(0.2–2.4)*
Hookah	0.9	(0.6–1.4)	0.8	(0.6–1.2)	0.9	(0.5–1.7)*	0.9	(0.4–1.8)*	1.7	(1.2–2.3)†	3.0	(2.2–4.1)†	0.1	(0.0–0.5)*	0.3	(0.1–1.6)*
Snus	1.0	(0.7–1.4)	0.7	(0.5–1.0)	0.6	(0.2–1.3)*	0.4	(0.2–0.9)*	1.0	(0.6–1.5)	1.1	(0.7–1.7)	0.7	(0.2–2.5)*	0.4	(0.1–2.8)*
Dissolvable tobacco	0.2	(0.1–0.5)*	0.4	(0.2–0.7)*	0.4	(0.1–1.2)*	0.5	(0.2–1.5)*	0.2	(0.1–0.5)*	1.0	(0.6–1.6)*	0.4	(0.1–2.4)*	0.1	(0.0–0.5)*
Electronic cigarettes	0.6	(0.4–1.0)*	0.9	(0.6–1.3)*	0.4	(0.2–1.0)*	1.1	(0.6–2.2)*	0.6	(0.4–1.1)*	2.0	(1.4–2.9)*	0.7	(0.2–2.6)*	0.3	(0.1–0.8)*
High School																
Tobacco	26.6	(23.6–29.8)	24.6	(22.3–27.0)	18.9	(15.6–22.8)	22.6	(19.7–25.8)	23.8	(21.2–26.5)	22.5	(19.5–25.6)	13.9	(10.5–18.3)	13.7	(9.9–18.8)
Both combustible & noncombustible tobacco	7.5	(6.1–9.3)	8.2	(6.9–9.6)	2.3	(1.2–4.2)*	2.3	(1.6–3.2)*	5.4	(4.3–6.6)	6.4	(5.0–8.1)	3.4	(2.0–5.7)	4.4	(2.9–6.5)
Only combustible	15.8	(14.5–17.3)†	13.6	(12.2–15.0)†	15.7	(13.1–18.6)	19.2	(16.4–22.4)	16.9	(15.2–18.3)	14.8	(13.0–16.8)	9.1	(6.1–13.3)	8.3	(5.7–12.0)
Only noncombustible	3.2	(2.4–4.2)	2.8	(2.2–3.6)	1.0	(0.4–2.3)*	1.1	(0.6–1.9)*	1.5	(1.0–2.3)	1.3	(0.9–1.9)	1.5	(0.6–3.5)*	1.1	(0.5–2.4)*
Cigarettes	17.6	(14.7–20.9)	15.4	(13.2–17.8)	10.6	(7.6–14.6)	9.6	(7.6–12.0)	15.8	(13.9–17.8)	14.3	(12.0–16.9)	8.9	(6.2–12.5)	8.7	(5.9–12.5)

Table 13.18   Continued

	White, non-Hispanic				Black, non-Hispanic				Hispanic				Other, non-Hispanic			
	2011		2012		2011		2012		2011		2012		2011		2012	
	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)
Cigars	12.1	(10.7–13.6)	12.2	(10.8–13.8)	11.7	(9.8–13.9)†	16.7	(14.4–19.3)†	11.3	(9.8–13.1)†	12.4	(10.6–14.4)	5.7	(4.0–8.1)	6.3	(4.4–9.0)
Smokeless tobacco	9.2	(7.4–11.5)	8.1	(6.9–9.5)	3.0	(1.8–5.1)	2.2	(1.5–3.2)	5.1	(3.8–6.8)	5.1	(3.8–6.8)	4.0	(2.4–6.6)	3.4	(2.3–5.2)
Pipes	3.5	(2.9–4.4)	4.5	(3.8–5.4)	2.4	(1.5–3.8)	2.9	(1.8–4.5)	6.3	(5.2–7.7)	6.2	(5.2–7.4)	3.4	(1.7–6.6)*	2.4	(1.4–3.9)*
Bidis	1.4	(1.0–2.0)†	0.7	(0.5–1.0)†	2.0	(1.2–3.2)*	0.8	(0.4–1.7)*	3.7	(2.9–4.8)†	1.4	(0.9–2.2)†	1.8	(1.0–3.4)*	0.4	(0.2–1.1)*
Kreteks	1.4	(1.0–2.0)	1.1	(0.8–1.5)	1.3	(0.8–2.2)*	0.6	(0.3–1.1)*	2.5	(1.9–3.3)*	0.9	(0.6–1.4)†	2.0	(1.0–4.0)*	0.3	(0.1–0.7)*
Hookah	4.3	(3.4–5.4)†	6.1	(5.2–7.2)†	1.7	(0.9–3.0)	2.1	(1.6–2.9)	5.1	(4.1–6.3)	6.6	(5.1–8.5)	4.8	(2.5–9.0)*	2.5	(1.5–4.1)*
Snus	3.7	(2.8–4.9)	3.3	(2.6–4.2)	0.7	(0.3–1.5)*	0.6	(0.3–1.1)*	2.3	(1.7–3.1)	1.8	(1.3–2.5)	1.7	(0.7–3.8)*	0.8	(0.4–1.6)*
Dissolvable tobacco	0.3	(0.1–0.5)*	0.7	(0.5–0.9)*	0.3	(0.1–1.2)*	0.8	(0.4–1.3)*	0.8	(0.5–1.3)	1.4	(1.0–2.1)	0.6	(0.1–2.9)*	0.5	(0.2–1.2)*
Electronic cigarettes	1.8	(1.3–2.4)†	3.4	(2.7–4.2)†	0.8	(0.3–1.7)*	1.1	(0.7–1.9)*	1.3	(0.8–2.1)†	2.7	(1.9–3.8)†	0.6	(0.3–1.2)*	2.2	(0.9–5.8)*

Source: National Youth Tobacco Survey 2011–2012.

Note: **CI** = confidence interval.

[a]Current use of cigarettes was determined by asking, "During the past 30 days, on how many days did you smoke cigarettes?"; Current use of cigars was determined by asking, "During the past 30 days, on how many days did you smoke cigars, cigarillos, or little cigars?"; Current use of smokeless tobacco was determined by asking, "During the past 30 days, on how many days did you use chewing tobacco, snuff, or dip?"; Current use of pipe was determined by asking, "During the past 30 days, on how many days did you smoke tobacco in a pipe?"; In 2011, current use of bidis and kreteks were determined by asking, "During the past 30 days, on how many days did you smoke bidis?" and "During the past 30 days, on how many days did you smoke kreteks?"; In 2012, current use of bidis and kreteks were determined by asking, "During the past 30 days, which of the following products have you used on at least one day?"; Current use of hookah, snus, dissolvable tobacco, and electronic cigarettes were determined by asking, "During the past 30 days, which of the following products have you used on at least one day?"

[b]Tobacco is use of cigarettes or cigars or smokeless tobacco or tobacco pipes or bidis or kreteks or hookah or snus or dissolvable tobacco or electronic cigarettes on ≥1 day in the past 30 days.

[c]Both combustible & noncombustible tobacco is use of cigarettes or cigars or tobacco pipes or bidis or kreteks or hookah and smokeless tobacco or snus or dissolvable tobacco or electronic cigarettes on ≥1 day in the past 30 days.

[d]Only combustible tobacco is use of cigarettes or cigars or tobacco pipes or bidis or kreteks or hookah on ≥1 day in the past 30 days and no use of smokeless tobacco, snus, dissolvable tobacco, and electronic cigarettes in the past 30 days.

[e]Only noncombustible tobacco is use of smokeless tobacco or snus or dissolvable tobacco or electronic cigarettes on ≥1 day in the past 30 days and no use of cigarettes, cigars, tobacco pipes, bidis, kreteks, and hookah in the past 30 days.

*Data statistically unreliable due to sample size <50 or relative standard error >0.3 on at least 1 year's data; thus, no t-test was done.

†p-value of the t-test for difference between 2011 and 2012 prevalences is <0.05.

Table 13.19   Percentage of tobacco product use in the past month among persons 18 years of age and older, 2002–2012

Substance	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Total tobacco products[a]	30.8[b]	30.2[b]	29.6[b]	29.9[b]	30.1[b]	29.2[b]	28.8[b]	28.1	27.8	26.9	27.3
Cigarettes[c]	25.8[b]	25.2[b]	24.7[b]	24.7[b]	24.8[b]	24.1[b]	23.7[b]	23.0[d]	22.6	21.7	22.0
Smokeless tobacco	3.5	3.4	3.1[b]	3.3	3.5	3.3	3.6	3.5	3.6	3.3	3.6
Cigars	5.5	5.5	5.8	5.8	5.7	5.5	5.5	5.4	5.4	5.2	5.4
Pipe tobacco	0.8	0.7[b]	0.8[d]	0.9	1.0	0.8	0.8[d]	0.8	0.9	0.8	1.0
Cigarettes[c] or cigars	28.5[b]	27.9[b]	27.6[b]	27.7[b]	27.7[b]	27.0[b]	26.4[b]	25.8[d]	25.5	24.6	24.8
Cigarettes,[c] cigars, or pipe tobacco	28.8[b]	28.2[b]	27.9[b]	28.0[b]	28.0[b]	27.3[b]	26.7[b]	26.1	25.8	24.9	25.2

Source: Substance Abuse and Mental Health Services Administration, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health, 2002–2012.
[a]Tobacco products include cigarettes, smokeless tobacco (i.e., chewing tobacco or snuff), cigars, or pipe tobacco.
[b]The difference between estimate and 2012 estimate is statistically significant at the 0.01 level.
[c]Past-month cigarette use is defined as smoking during the 30 days preceding the survey and smoking 100 cigarettes or more in a lifetime. Respondents with an unknown lifetime number of cigarettes smoked were excluded from the analysis.
[d]The difference between this estimate and 2012 estimate is statistically significant at the 0.05 level.

Data from the 2012 NSDUH show that the prevalence of combustible (cigarettes, cigar, or pipe tobacco) tobacco product use among adults 18 years of age or older was 25.2% and the prevalence of overall tobacco product use (cigarettes, cigars, pipe tobacco, and smokeless) was 27.3%, both of which were significantly higher than the 22.0% prevalence of cigarette smoking (Table 13.19). In addition, NSDUH data suggest that declines in cigarette smoking may be masking persistently high cigarette initiation rates (Figure 13.26). Overall, 2.3 million persons 12 years of age or older initiated cigarette use in 2012, a level equivalent to that observed in 2005. These data on persistently high cigarette initiation rates are not inconsistent with data shown in Table 13.2; however, data in Figure 13.26 focus on somewhat different and more recent aspects of the problem. Table 13.2 shows the age of smoking initiation among adults 30–39 years of age who had ever smoked daily. Figure 13.26 shows the recent patterns of ever smoking even a single cigarette. The proportion of adults (18 years of age or older) who initiated cigarette use in the previous year was greater than prior years. If this pattern continues and is also reflected in those who ever become daily smokers by 30 years of age, the high rates of initiation below 18 years of age shown in Table 13.2 could improve in the future.

Electronic Cigarettes

Although NSDUH did not measure electronic cigarette use in 2012 and other nationally representative surveillance data on the awareness and use of electronic cigarettes remains limited, all available data show rapid increases in recent years. Data from the HealthStyles Survey show that awareness of electronic cigarettes among adults 18 years of age or older increased from 40.9% in 2010 to 57.9% in 2011 (King et al. 2013). Ever use of electronic cigarettes also nearly doubled among all adults during 2010–2011, from 3.3% to 6.2% (Table 13.20). During the same period, the prevalence of ever electronic cigarette use among current cigarette smokers increased from 9.8% to 21.2%, while the prevalence among former cigarette smokers increased from 2.5% to 7.4%. Prevalence remained unchanged among never cigarette smokers (1.3%). Other studies described in Table 13.20 are consistent with these results.

Figure 13.26 Cigarette initiation during the past year among persons 12 years of age and older, by age at first use, 2002–2012
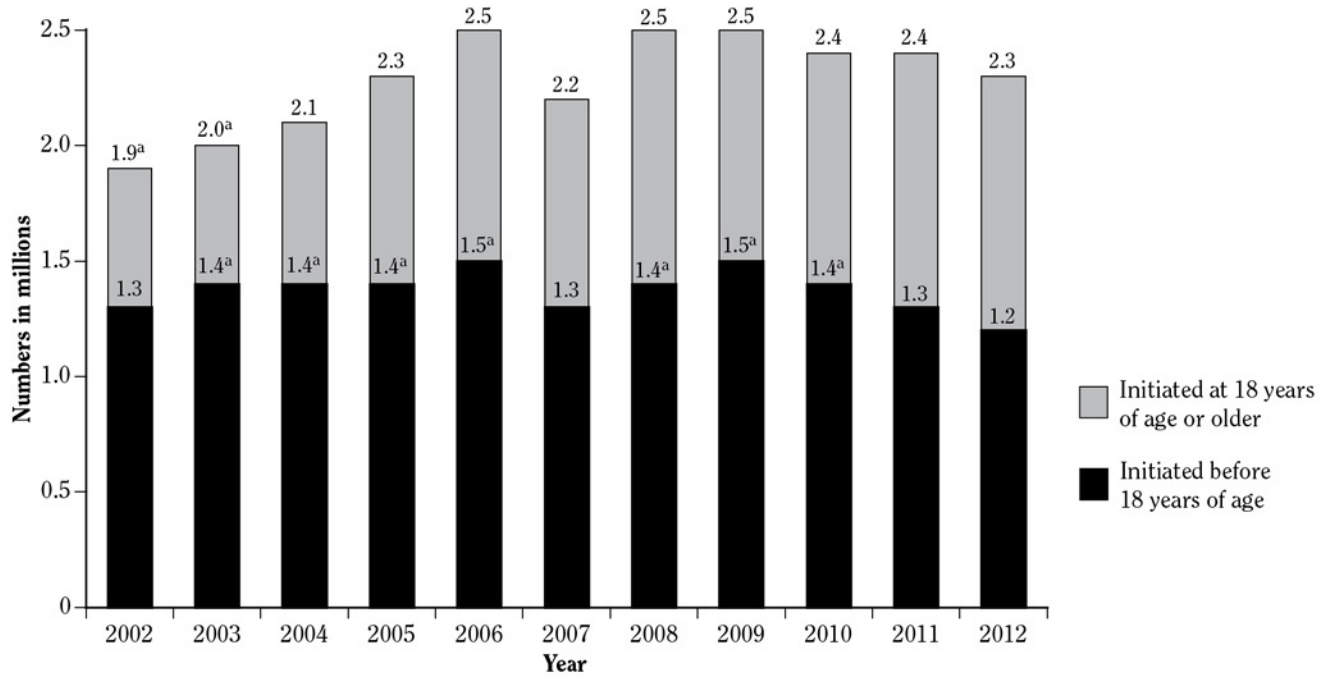
Source: Substance Abuse and Mental Health Services Administration, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health, 2002–2012.
[a]Difference between this estimate and the 2012 estimate is statistically significant at the .05 level.

Table 13.20   Sources of data and prevalence of electronic nicotine delivery systems (ENDS); United States, 2012–2013

Study	Study design/population	Findings

McMillen et al. 2012	• Social Climate Survey of Tobacco Control
	• 3,240 online surveys and telephone interviews
	• 2010
	• United States
		Ever use of ENDS (%)
		• Overall: 1.8
		• Smoking status:
		  – Never: 0.3
		  – Former: 1.5
		  – Nondaily: 8.2
		  – Daily: 6.2
		• Region:[a]
		  – Northeast: 2.7
		  – Midwest: 1.4
		  – South: 1.6
		  – West: 1.9
		• Race:
		  – White: 1.7
		  – Black: 1.9
		  – Other: 1.8
		• Years of age:
		  – 18–24: 2.5
		  – ≥25: 1.6
		• Education:
		  – <High school diploma: 0.7
		  – High school diploma: 1.7
		  – Some college: 3.7
		  – College degree: 0.5

Table 13.20   Continued

Study	Study design/population	Findings

Pearson et al. 2012	• Legacy Longitudinal Smoker Cohort (LLSC) (n = 3658)
	• Knowledge Networks' KnowledgePanel (n=2,649)
	• 2010 online surveys and telephone interviews
	• United States
		Prevalence of ENDS use among Knowledge Networks' KnowledgePanel
		• Ever use of ENDS:
		  – Never smoker: 0.8% (0.4–1.7)
		  – Former smoker: 2.0% (1.0–3.8)
		  – Current smoker: 11.4% (9.3–14.0)
		• Use for current smokers, % (95% CI):
		  – Overall: 11.4 (9.2–14.0)
		  – Gender:
		    o Male: 12.6 (9.2–16.9)
		    o Female: 10.3 (7.7–13.7)
		  – Race/ethnicity:
		    o White: 11.8 (9.4–14.7)
		    o Black: 8.2 (3.6–17.7)
		    o Hispanic: 10.2 (5.1–19.6)
		    o Other: 18.1 (8.4–34.6)
		  – Education:
		    o <High school diploma: 11.6 (6.5–19.8)
		    o High school diploma or GED: 8.5 (6.0–11.9)
		    o Some college: 13.6 (9.8–18.5)
		    o College degree: 13.7 (8.4–21.6)
		Prevalence of ENDS use among LLSC
		• Ever use of ENDS:
		  – Never smoker: Not reported
		  – Former smoker: 3.1% (1.3–7.1)
		  – Current smoker: 6.4% (5.3–7.7)
		• Use for current smokers, % (95% CI):
		  – Overall: 6.4 (5.3–7.7)
		  – Gender:
		    o Male: 7.3 (5.6–9.5)
		    o Female: 5.3 (4.2–6.7)
		  – Race/ethnicity:
		    o White: 7.4 (6.1–9.1)
		    o Black: 0.8 (0.3–2.0)
		    o Hispanic: 5.5 (3.2–9.5)
		    o Other: 6.0 (2.5–13.6)
		  – Education:
		    o <High school diploma: 3.4 (2.0–7.7)
		    o High school diploma or GED: 7.0 (5.3–9.1)
		    o Some college: 7.4 (5.2–10.4)
		    o College degree: 9.4 (5.6–15.5)

Adkison et al. 2013	• Wave 8 of the International Tobacco Control Four-Country Survey:
	  – Canada: n = 1,581
	  – United States: n = 1,520
	  – UK: n = 1,325
	  – Australia: n = 1,513
	• July 2010–June 2011
	• Online surveys and telephone interviews
		• Current ENDS user, United States: 1.08% (95% CI, 0.52–2.12)

Table 13.20   Continued

Study	Study design/population	Findings
King et al. 2013	• HealthStyles Survey • 4,184 adults (≥18 years of age) • 2010 mail survey • United States	**Ever use of ENDS[b], % (95% CI)** • Gender: – Male: 2.3 (1.3–3.4) – Female: 1.9 (1.3–2.6) • Years of age: – 18–24: —[c] – 25–34: 2.9 (1.1–4.7) – 35–44: 3.4 (2.0–4.8) – 45–54: 1.9 (1.0–2.8) – 55–64: 2.2 (0.9–3.4) – ≥65: 0.8 (0.2–1.4) • Race/ethnicity: – White, non-Hispanic: 2.4 (1.6–3.2) – Black, non-Hispanic: —[c] – Other, non-Hispanic: 1.8 (0.4–3.2) – Hispanic: 2.3 (0.9–3.7) • Education: – <High school: —[c] – High school graduate: 3.1 (1.3–5.0) – Some college: 2.3 (1.4–3.2) – College graduate: 1.5 (0.7–2.2) • Annual household income: – <$15,000: 1.1 (0.3–1.9) – $15,000–$24,999: 1.6 (0.4–2.9) – $25,000–$39,999: 2.9 (0.6–5.2) – $40,000–$59,999: 1.9 (0.7–3.1) – ≥$60,000: 2.4 (1.5–3.3) • Region:[a] – Northeast: 1.1 (0.3–1.9) – Midwest: 3.3 (1.5–5.1) – South: 1.4 (0.8–2.0) – West: 3.0 (1.7–4.2) • Smoking status: – Current smoker: 6.8 (4.6–8.9) – Former smoker: 0.6 (0.2–1.1) – Never smoker: 1.2 (1.5–2.7) • Total: 2.1 (1.5–2.7)

Table 13.20   Continued

Study	Study design/population	Findings

King et al. 2013	• HealthStyles Survey
	• 2,505 adults (≥18 years of age)
	• 2010 Web survey
	• United States
		Ever use of ENDS[b], % (95% CI)
		• Gender:
		  – Male: 3.0 (1.9–4.2)
		  – Female: 3.7 (2.4–4.9)
		• Years of age:
		  – 18–24: 7.0 (3.0–10.9)
		  – 25–34: 3.1 (1.4–4.8)
		  – 35–44: 3.2 (1.4–5.0)
		  – 45–54: 3.2 (1.3–5.2)
		  – 55–64: 2.9 (1.1–4.8)
		  – ≥65: —[c]
		• Race/ethnicity:
		  – White, non-Hispanic: 3.8 (2.7–4.9)
		  – Black, non-Hispanic: —[c]
		  – Other, non-Hispanic: —[c]
		  – Hispanic: 3.0 (1.0–5.1)
		• Education:
		  – <High school: 4.3 (1.7–6.9)
		  – High school graduate: 4.0 (2.2–5.7)
		  – Some college: 3.6 (2.0–5.1)
		  – College graduate: 2.0 (0.8–3.2)
		• Annual household income:
		  – <$15,000: 3.5 (1.5–5.6)
		  – $15,000–$24,999: —[c]
		  – $25,000–$39,999: 3.5 (1.3–5.8)
		  – $40,000–$59,999: 2.5 (1.1–3.8)
		  – ≥$60,000: 3.5 (2.1–4.9)
		• Region:[a]
		  – Northeast: —[c]
		  – Midwest: 5.4 (3.1–7.6)
		  – South: 2.5 (1.4–3.6)
		  – West: 3.7 (2.0–5.5)
		• Smoking status:
		  – Current smoker: 9.8 (6.9–12.6)
		  – Former smoker: 2.5 (0.8–4.2)
		  – Never smoker: 1.3 (0.5–2.0)
		• Total: 3.3 (2.5–4.2)

Table 13.20   Continued

Study	Study design/population	Findings

King et al. 2013	• HealthStyles Survey
	• 4,050 adults (≥18 years of age)
	• 2011 Web survey
	• United States
		Ever use of ENDS[b], % (95% CI)
		• Gender:
		  – Male: 5.8 (4.4–7.2)
		  – Female: 6.6 (5.1–8.2)
		• Years of age:
		  – 18–24: 8.1 (4.0–12.2)
		  – 25–34: 6.6 (3.9–9.3)
		  – 35–44: 5.7 (3.6–7.7)
		  – 45–54: 8.0 (5.5–10.5)
		  – 55–64: 5.5 (3.4–7.5)
		  – ≥65: 3.7 (1.9–5.4)
		• Race/ethnicity:
		  – White, non-Hispanic: 6.8 (5.6–8.1)
		  – Black, non-Hispanic: 4.5 (1.6–7.3)
		  – Other, non-Hispanic: 6.1 (1.8–10.4)
		  – Hispanic: 3.9 (1.1–6.7)
		• Education:
		  – <High school: 7.4 (3.4–11.4)
		  – High school graduate: 7.5 (5.4–9.7)
		  – Some college: 6.1 (4.6–7.7)
		  – College graduate: 4.4 (2.9–5.9)
		• Annual household income:
		  – <$15,000: 7.5 (4.3–10.7)
		  – $15,000–$24,999: 5.7 (1.9–9.4)
		  – $25,000–$39,999: 9.4 (5.7–13.0)
		  – $40,000–$59,999: 4.9 (2.9–6.9)
		  – ≥$60,000: 5.6 (4.3–7.0)
		• Region:[a]
		  – Northeast: 5.6 (3.5–7.7)
		  – Midwest: 7.7 (5.3–10.1)
		  – South: 6.2 (4.4–8.0)
		  – West: 5.3 (3.3–7.3)
		• Smoking status:
		  – Current smoker: 21.2 (17.0–25.4)
		  – Former smoker: 7.4 (5.0–9.7)
		  – Never smoker: 1.3 (0.7–1.8)
		• Total: 6.2 (5.2–7.3)

Table 13.20   Continued

Study	Study design/population	Findings

Regan et al. 2013	• ConsumerStyles Survey
	• 2009: n = 21,240
	• 2010: n = 20,000
	• United States
		Ever use ENDs (n = 249): % (95% CI)[d]
		• Gender:
		  – Male: 6.5 (4.9–8.0)
		  – Female: 10.5 (7.9–13.2)
		• Years of age:
		  – 18–24: 10.1 (3.1–17.0)
		  – 25–34: 9.2 (6.2–12.2)
		  – 35–44: 6.9 (4.9–9.0)
		  – 45–54: 9.2 (7.1–11.3)
		  – 55–64: 5.9 (3.4–8.4)
		  – ≥65: 7.9 (4.8–11.1)
		• Race/ethnicity:
		  – White, non-Hispanic: 8.3 (6.4–10.1)
		  – Black, non-Hispanic: 8.9 (4.9–12.9)
		  – Other, non-Hispanic: 8.2 (4.6–11.7)
		  – Hispanic: 8.9 (4.5–13.3)
		• Education:
		  – <High school: 17.8 (5.4–30.2)
		  – High school graduate: 9.5 (6.2–12.7)
		  – Some college: 8.0 (5.9–10.1)
		  – ≥College graduate: 7.0 (4.3–9.6)
		• Annual household income:
		  – <$15,000: 12.9 (5.8–20.0)
		  – $15,000–$24,999: 12.6 (6.7–18.5)
		  – $25,000–$39,999: 8.1 (4.7–11.4)
		  – $40,000–$59,999: 9.3 (5.1–13.5)
		  – ≥$60,000: 6.0 (4.7–7.4)
		• Region:
		  – Northeast: 9.5 (4.9–14.2)
		  – Midwest: 8.6 (5.5–11.8)
		  – South: 8.1 (6.0–10.3)
		  – West: 7.3 (5.1–9.6)
		• Smoking status:
		  – Current smoker: 18.2 (13.8–22.7)
		  – Former smoker: 6.2 (4.0–8.3)
		  – Never smoker: 3.8 (2.7–4.9)
		• Tobacco use:
		  – Uses tobacco: 17.2 (13.6–20.8)
		  – Uses one tobacco product: 14.7 (10.6–18.7)
		  – Uses >1 tobacco product: 21.1 (14.3–28.0)
		  – Does not use tobacco: 3.6 (2.6–4.6)

Table 13.20   Continued

Study	Study design/population	Findings
Regan et al. 2013	• ConsumerStyles Survey • 2009: n = 21,240 • 2010: n = 20,000 • United States	**Ever use ENDs (n = 249): OR (95% CI)[d]** • Gender – Male: 0.59 (0.40–0.86)[*] – Female: 1 • Years of age: – 18–24: 1.30 (0.54–3.14) – 25–34: 1.17 (0.67–2.05) – 35–44: 0.87 (0.51–1.48) – 45–54: 1.18 (0.71–1.93) – 55–64: 0.73 (0.39–1.36) – ≥65: 1 • Race/ethnicity: – White, non-Hispanic: 1 – Black, non-Hispanic: 1.08 (0.62–1.89) – Other, non-Hispanic: 0.99 (0.58–1.68) – Hispanic: 1.09 (0.60–1.97) • Education: – <High school: 2.90 (1.13–7.45)[*] – High school graduate: 1.41 (0.81–2.45) – Some college: 1.17 (0.71–1.92) – ≥College graduate: 1 • Annual household income: – <$15,000: 2.24 (1.25–4.02) [*] – $15,000–$24,999: 1.36 (0.82–2.28) – $25,000–$39,999: 1.59 (0.92–2.77) – $40,000–$59,999: 2.30 (1.17–4.51)[*] – ≥$60,000: 1 • Region: – Northeast: 1.33 (0.71–2.51) – Midwest: 1.19 (0.71–2.01) – South: 1.11 (0.72–1.72) – West: 1 • Smoking status: – Current smoker: 5.71 (3.72–8.76) [*] – Former smoker: 1.68 (1.03–2.72) [*] – Never smoker: 1 • Tobacco use: – Uses tobacco: 5.55 (3.80–8.11) [*] – Uses one tobacco product: 4.59 (3.00–7.04) [*] – Uses >1 tobacco product: 7.17 (4.36–11.78) [*] – Does not use tobacco: 1

Table 13.20   Continued

Study	Study design/population	Findings

Regan et al. 2013	• ConsumerStyles Survey
	• 2009: n = 21,240
	• 2010: n = 20,000
	• United States
		Past month use of ENDS (n = 115): % (95% CI)[d]
		• Gender:
		  – Male: 3.6 (2.4–4.9)
		  – Female: 3.5 (2.5–4.6)
		• Years of age:
		  – 18–24: —[e]
		  – 25–34: 3.7 (1.6–5.7)
		  – 35–44: 2.9 (1.7–4.1)
		  – 45–54: 4.8 (3.2–6.4)
		  – 55–64: 3.1 (1.2–5.0)
		  – ≥65: 5.2 (2.5–7.9)
		• Race/ethnicity:
		  – White, non-Hispanic: 3.3 (2.3–4.3)
		  – Black, non-Hispanic: 5.8 (2.4–9.3)
		  – Other, non-Hispanic: 3.1 (1.1–5.2)
		  – Hispanic: 4.3 (0.9–7.8)
		• Education:
		  – <High school: —[e]
		  – High school graduate: 4.1 (1.9–6.3)
		  – Some college: 3.4 (2.2–4.5)
		  – ≥College graduate: 2.9 (1.8–4.1)
		• Annual household income:
		  – <$15,000: 4.6 (1.7–7.5)
		  – $15,000–$24,999: 4.1 (1.6–6.6)
		  – $25,000–$39,999: 4.3 (1.9–6.8)
		  – $40,000–$59,999: 3.7 (1.3–6.1)
		  – ≥$60,000: 3.0 (1.9–4.0)
		• Region:
		  – Northeast: 4.2 (1.7–6.6)
		  – Midwest: 2.8 (1.2–4.4)
		  – South: 3.5 (2.3–4.8)
		  – West: 4.2 (2.5–6.0)
		• Smoking status:
		  – Current smoker: 6.3 (4.1–8.6)
		  – Former smoker: 2.9 (1.4–4.5)
		  – Never smoker: 2.2 (1.3–3.1)
		• Tobacco use:
		  – Uses tobacco: 7.1 (5.0–9.1)
		  – Uses one tobacco product: 4.3 (2.6–6.0)
		  – Uses >1 tobacco product: 11.4 (6.9–15.9)
		  – Does not use tobacco: 1.8 (1.1–2.5)

Table 13.20   Continued

Study	Study design/population	Findings

Regan et al. 2013	• ConsumerStyles Survey
	• 2009: n = 21,240
	• 2010: n = 20,000
	• United States
		Past month use of ENDS (n = 115): OR (95% CI)[d]
		• Gender:
		  – Male: 1.03 (0.64–1.67)
		  – Female: 1
		• Years of age:
		  – 18–24: 0.46 (0.12–1.74)
		  – 25–34: 0.69 (0.31–1.53)
		  – 35–44: 0.54 (0.27–1.10)
		  – 45–54: 0.91 (0.47–1.74)
		  – 55–64: 0.59 (0.25–1.35)
		  – ≥65: 1
		• Race/ethnicity:
		  – White, non-Hispanic: 1
		  – Black, non-Hispanic: 1.79 (0.89–3.61)
		  – Other, non-Hispanic: 0.94 (0.45–1.99)
		  – Hispanic: 1.32 (0.55–3.19)
		• Education:
		  – <High school: 3.47 (1.15–10.46)[e]
		  – High school graduate: 1.42 (0.70–2.85)
		  – Some college: 1.15 (0.67–1.99)
		  – ≥College graduate: 1
		• Annual household income:
		  – <$15,000: 1.40 (0.68–2.89)
		  – $15,000–$24,999: 1.48 (0.74–2.97)
		  – $25,000–$39,999: 1.25 (0.58–2.69)
		  – $40,000–$59,999: 1.57 (0.73–3.35)
		  – ≥$60,000: 1
		• Region:
		  – Northeast: 0.98 (0.46–2.09)
		  – Midwest: 0.65 (0.31–1.35)
		  – South: 0.83 (0.47–1.47)
		  – West: 1
		• Smoking status:
		  – Current smoker: 3.06 (1.72–5.42)[e]
		  – Former smoker: 1.36 (0.68–2.73)
		  – Never smoker: 1
		• Tobacco use:
		  – Uses tobacco: 4.21 (2.53–7.01)[e]
		  – Uses one tobacco product: 2.48 (1.40–4.40)[e]
		  – Uses >1 tobacco product: 7.10 (3.89–12.98)[e]
		  – Does not use tobacco: 1

Note: GED = general education development; **OR** = odds ratio; **CI** = confidence interval.

[a]Regions are taken from U.S. Census Bureau: Northeast (Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont); Midwest (Indiana, Illinois, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin); South (Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia); West (Alaska, Arizona, California, Colorado, Hawaii, Idaho, New Mexico, Montana, Oregon, Nevada, Utah, Washington, and Wyoming).

[b]Defined as a response of "electronic cigarettes or e-cigarettes" to the question, "Have you tried any of the following products, even just one time?"

[c]Relative standard error ≥40%.

[d]Among those who had heard of ENDS.

[e]Unreliable estimate; data censored because relative standard error >45%.

[*]Significant at p <0.05.

Conclusions

Extensive national surveys document the rise and subsequent decline of cigarette use, the current heterogeneity of cigarette use across subgroups of the population, and the changing patterns of tobacco product use. Such data are requisite for continually evaluating and reshaping tobacco control strategies. The data reviewed support the following conclusions:

In the United States, the prevalence of current cigarette smoking among adults has declined from 42% in 1965 to 18% in 2012.

1. The prevalence of current cigarette smoking declined first among men (between 1965 and the 1990s), and then among women (since the 1980s). However, declines in the prevalence of smoking among adults (18 years of age and older) have slowed in recent years.

2. Most first use of cigarettes occurs by 18 years of age (87%), with nearly all first use by 26 years of age (98%).

3. Very large disparities in tobacco use remain across racial/ethnic groups and between groups defined by educational level, socioeconomic status, and region.

4. In the United States, there are now more former smokers than there are current smokers. More than half of all ever smokers have quit smoking.

5. The rate of quitting smoking among recent birth cohorts has been increasing, and interest in quitting is high across all segments of society.

6. Patterns of tobacco use are changing, with more intermittent use of cigarettes and an increase in use of other products.

Summary and Implications

Cigarette smoking among both youth and adults has declined since 1964. However, declines in the prevalence of cigarette smoking among adults have slowed in recent years. Survey data indicate that tobacco control efforts need to not only address the population generally but also to focus on subpopulations with a higher prevalence of tobacco use and lower rates of quitting. Some of the highest prevalence rates have been observed among persons of lower socioeconomic status, sexual minorities (including individuals who are gay, lesbian, bisexual and transgender, and individuals with same-sex relationships and/or attraction), high school dropouts (Fagan et al. 2007; Lee et al. 2009; Garrett et al. 2011, 2013; SAMSHA 2013) and in Appalachia and the South (Pickle and Su 2002) as well as among vulnerable populations with complex comorbid medical illness (e.g. HIV/AIDS and cardiovascular disease) (Crothers et al. 2009; Hoffman et al. 2009; Marshall et al. 2009; Vidrine 2009; Levine et al. 2010; Tesoriero et al. 2010; Pines et al. 2011; Rahmanian et al. 2011), mental illness, and alcohol and substance abuse disorders (CDC 2013; Prochaska et al. 2008; Schroeder and Morris 2010; Villanti et al. 2012). Additionally, polytobacco use is now very common, especially among youth and young adults, and a recent upsurge in the use of cigars has also occurred. Limited national surveillance data are available to monitor the use of nonconventional tobacco products, particularly electronic cigarettes and hookah pipes, suggesting the need for sustained and expanded efforts to capture all forms of tobacco use. Given the rapid increase in electronic cigarette use among both adults and adolescents, rigorous surveillance of these products is particularly important, including their impact on the initiation and cessation of conventional tobacco use and concurrent use with other conventional tobacco products. Without question, data collection systems need the capacity to monitor the patterns of both conventional and nonconventional tobacco use across all segments of our society. The tables in this chapter provide the prevalence of use of cigarettes and other tobacco products stratified by gender, race/ethnicity, education, age groups, poverty status, and region of the United States; however, the high prevalence of smoking in some other segments of society suggests the need for national data collection systems which have the capacity to provide surveillance of tobacco use patterns in other segments of society where higher prevalence of tobacco use has been observed.

Appendix 13.1: Sources of Data

Data in this chapter were obtained from three national surveys: National Health Interview Survey (NHIS), National Survey on Drug Use and Health (NSDUH), and the Youth Risk Behavior Survey (YRBS) (Table 13.1).

National Health Interview Survey

NHIS is a multipurpose survey conducted by the National Center for Health Statistics (NCHS) of the Centers for Disease Control and Prevention (CDC) and is the principal source of information on the health of the civilian, noninstitutionalized population of the United States. The NHIS has been conducted continuously since 1957. Questions on smoking have been included in selected survey years since 1965, and detailed items allowing classification by race and ethnicity have been included since 1978. Detailed questions on tobacco use are included in a Cancer Control Supplement to the NHIS, which was initiated in 1987 and subsequently conducted in 1992, 2000, 2005, and 2011. Face-to-face interviews are used to collect confidential data from a representative sample of the population at the respondent's place of residence (NCHS 2008).

The sampling plan follows a multistage area probability design that permits the representative sampling of households and noninstitutional group quarters (e.g., college dormitories) in all 50 states and the District of Columbia. Non-Hispanic African American or Black, Hispanic or Latino, and Asian persons are oversampled. For each family in NHIS, one sample child (younger than 18 years of age) and one sample adult are randomly selected, and information on each is collected. For children and those adults not at home during the interview, information is provided by a knowledgeable adult family member. Since 1974, only self-reports of cigarette smoking and use of other tobacco products have been used, and thus no proxy data have been employed since 1974 on questions of import to this report. Since 1997, NHIS has been conducted using computer-assisted personal interviewing by interviewers from the U.S. Census Bureau; sampling and interviewing are continuous throughout each year (NCHS 2008).

National Survey on Drug Use and Health

NSDUH is an annual survey of the civilian, noninstitutionalized population 12 years of age and older in the United States. Before 2002, this survey, which has been conducted by the federal government since 1971, was called the National Household Survey on Drug Abuse. NSDUH is the primary source of statistical information on the use of illegal drugs by the U.S. population; face-to-face interviews are used to collect confidential data from a representative sample of the population at the respondent's place of residence. The survey is sponsored by the Substance Abuse and Mental Health Services Administration (SAMHSA) of the U.S. Department of Health and Human Services and is planned and managed by SAMHSA's Center for Behavioral Health Statistics and Quality.

Data are collected using audio computer-assisted self-interviewing, and respondents are given a US$30 incentive payment for participation. The total targeted sample size for 1 year of 67,500 participants is allocated equally across three age groups: 12–17, 18–25, and 26 years of age and older. The NSDUH sampling frame includes residents of noninstitutional group quarters (e.g., shelters, rooming houses, dormitories, and group homes), residents of the 50 states and the District of Columbia, and civilians living on military bases. The sample excludes persons with no fixed household address (e.g., homeless transients not in shelters) and long-term residents of institutional group quarters (e.g., prisons and hospitals).

Youth Risk Behavior Surveillance System

Developed in 1990 by CDC, the YRBSS monitors priority health risk behaviors, including tobacco use, among high school students in the United States. In addition to the surveys that are conducted by state, local, territorial, and tribal health and education agencies, there is a national YRBS conducted by CDC. The current report includes data from the national YRBS only, which has a sampling frame

of all public and private school students in grades 9–12 in the 50 states and the District of Columbia. A three-stage cluster sample design is used to sample (1) large-sized counties or groups of smaller adjacent counties, (2) public and private schools with a probability proportional to the schools' enrollment, and (3) one or two randomly selected classes in each grade. Examples of classes include home-rooms, classes of a required discipline (e.g., English or social studies), and all classes meeting during a required period (e.g., second period). All students in a sampled class are eligible to participate. Oversampling is used to achieve sufficiently large subsamples of Black or African American and Hispanic or Latino students to enable separate analyses of these subgroups. Schools that decline to participate in the original sample are not replaced. Students complete self-administered, paper-and-pencil questionnaires and record their answers directly in the questionnaire booklet or on a separate computer-scannable answer sheet (CDC 2013). Local procedures to obtain the permission of parents are followed. Trained personnel administer the questionnaires to students in their classrooms for the national survey and for most state and local surveys. The participation of students is both voluntary and anonymous (CDC 2013).

Appendix 13.2: Measures of Tobacco Use

Validity of Measures of Tobacco Use Among Youth

All of the data on tobacco use among youth that are presented in this report are based on retrospective, self-reported responses to questionnaires. Because of the retrospective nature of data collection, and because tobacco use is viewed by many as a socially undesirable behavior, there is a risk of inaccurate or dishonest responses. Because it was not feasible to verify the self-reported data included here, it is important for researchers to interpret these data with some caution and an understanding of possible sources of inaccuracy. Many factors can affect the validity of self-reported data—factors that can be categorized as cognitive or situational. Cognitive processes that affect responses include comprehension of the question, retrieval of relevant information from memory, decision making about the adequacy of the information retrieved, and the generation of a response (Brener et al. 2003). Each of these processes can contribute to errors in responses and, subsequently, to problems with validity.

Situational factors that affect the validity of self-reported data refer to characteristics of the external environment in which the survey is being conducted. These include the setting (i.e., school or home based), the method (i.e., self-administered questionnaire or in-person interview), the social desirability of the behavior being reported, and the perception of privacy and/or confidentiality of responses (U.S. Department of Health and Human Services [USDHHS] 1994; Brener et al. 2003).

Many studies have found that youth report a higher number of sensitive behaviors when a survey is completed in a school setting rather than in their homes (Gfroerer et al. 1997; Hedges and Jarvis 1998; Kann et al. 2002). For example, Kann and colleagues (2002) compared the school-based National Youth Risk Behavior Survey (YRBS) with the household-based YRBS supplement to the National Health Interview Survey (NHIS). The study found that the school-based survey produced a significantly higher reporting of many sensitive behaviors, such as driving after drinking alcohol, binge drinking, and currently using marijuana and cocaine. Four measures of various stages of the smoking uptake process were higher in the school-based survey, but estimates of current cigarette use and frequent cigarette use, while elevated in the school-based survey, were not significantly different from estimates generated in the household-based survey. Few differences in nonsensitive behaviors were observed. Two other studies (Gfroerer et al. 1997; Brener et al. 2003) indicate that although self-reported estimates of current use of alcohol and illicit drugs were higher in the school-based versus household-based surveys, estimates of current cigarette smoking were quite similar across settings. All three of these studies used self—rather than interviewer—administered interviews/questionnaires. Nevertheless, the provision of privacy that school surveys provide is important, especially if smoking becomes more socially unacceptable over time. Notably, household-based surveys are more likely to include youth who drop out of school or are frequently absent from school, and these groups are more likely to smoke.

Self-administered methods of data collection have generally produced higher reporting of sensitive behaviors, including tobacco use, than have interviewer-administered methods (Turner et al. 1992; Aquilino 1994; Brittingham et al. 1998). For example, Turner and colleagues (1992) found that the prevalence of current smoking among 12- to 17-year-olds based on reports in the self-administered version of the National Survey on Drug Use and Health (NSDUH) home-based survey was considerably higher (by 10–30%) than it was using the interviewer-administered version. The absence of personal interaction with an interviewer on self-administered surveys may reduce the reporting biases associated with perceived privacy and the social desirability of a behavior (Brener et al. 2003).

Another situational influence is the use of the "bogus pipeline" (Brener et al. 2003). This method has been used to improve the validity of self-reported measures of smoking, especially in school-based surveys. Respondents are told that a biochemical test will be used to accurately evaluate their smoking behavior after the questionnaire is completed, although in fact such a test will not be used. This method has been associated with higher reported smoking prevalence (Aguinis et al. 1993). None of the surveys used in this report make use of the bogus pipeline, but each survey has taken alternative steps to ensure that the survey setting is private and that the data collected are at least confidential if not anonymous.

In conclusion, the factors described above may affect the point estimate of smoking prevalence. However, if these factors remain stable over the years, they should not affect the trends seen over time.

Validity of Measures of Tobacco Use Among Adults

All of the data on tobacco use among adults that were presented in this report were based on retrospective self-reported responses to questionnaires. Biochemical validation studies suggest that data on self-reported cigarette smoking are generally valid, except in certain situations, such as in conjunction with intense smoking cessation programs and with certain populations, such as pregnant women or adolescents (Velicer et al. 1992; Kendrick et al. 1995; USDHHS 2012). Misclassification may also be more common among intermittent smokers. Additionally, smokers may misreport the number of cigarettes smoked per day because of digit preference (preference for multiples of 10) (Klesges et al. 1995). Regardless, a meta-analysis of 26 validation studies found that self-reported smoking status is generally accurate (Patrick et al. 1994), particularly when interviewer-administered questionnaires are used. It should be noted here that much of the research literature on the validity of self-reported data is restricted to cigarette smoking—cigars and smokeless tobacco are rarely addressed. As such, a discussion of the factors that may affect validity is warranted so that the data presented in the present report are interpreted with some caution and an understanding of possible sources of inaccuracy. Clearly, many factors can affect the validity of self-reported data, such as response biases and methodologic features of surveys.

Methodologic differences in survey administration—including, but not limited to, timing, survey question order, sampling, data collection mode (e.g., computer-assisted personal interviewing vs. computer-assisted telephone interviewing), participation rates, and operational definitions—can affect prevalence estimates of tobacco use (Ryan et al. 2012). NHIS and NSDUH both use computer-assisted personal interviewing, which is done in the home. NSDUH differs from NHIS, however, with respect to the operational definition of cigarette smoking (Delnevo and Bauer 2009). NHIS defines current smoking among adults as smoking at least 100 cigarettes during one's lifetime and smoking every day or on some days. In contrast, NSDUH defines current smoking for youth, young adults, and adults as smoking part or all of a cigarette during the past 30 days. The Substance Abuse and Mental Health Services Administration, which sponsors NSDUH, does not use the 100 cigarettes-in-a-lifetime threshold when making estimates of cigarette smoking prevalence from NSDUH data. This likely contributes to the consistently higher estimates from NSDUH noted throughout this report (see "Measures of Tobacco Use" section below) (Ryan et al. 2012). Tables in this chapter continue the criteria described above for youth and young adults. To facilitate comparisons with NHIS, however, data in selected tables on all adults 18 years of age or older incorporate the 100-cigarette threshold, as noted in the footnotes to the tables. Ryan and colleagues (2012) discuss these differences in the definitions of current smoking and how they could affect smoking estimates, particularly in some subpopulations. However, with the use of a modified NSDUH current smoking definition that incorporated the 100-cigarettes-in-a-lifetime threshold, Ryan and colleagues (2012) observed that a notable number of subpopulation estimates (e.g., 26–34 years of age group, Asians, and Hispanics groups) became comparable between the NSDUH and NHIS surveys for the year 2008.

Ryan and associates (2012) also noted other methodologic differences between the surveys beyond the current smoking definition that may contribute to the consistently higher estimates in NSDUH, including survey mode, setting, context, and incentives. The NSDUH interview mode is strictly in person using computer-assisted personal interviewing that is thought to provide respondents with an enhanced sense of privacy. Although NHIS is interviewer administered, some interviews that cannot be fully conducted in person are completed by telephone. Ryan and coworkers (2012) also note that the context of the survey and question placement could be a factor contributing to higher self-report of smoking in NSDUH. Within the NHIS survey context, smoking may be viewed as one of the most serious health behaviors that respondents are asked about. Within NSDUH, in contrast, the survey content focuses almost entirely on substance-use behaviors, both licit and illicit, and respondents may perceive smoking to be one of the more socially acceptable behaviors they are being asked about. Finally, since 2002, NSDUH began paying respondents a US$30 incentive upon completion of the survey, while NHIS remains uncompensated. Although these factors may affect the point estimates of various tobacco use indicators, if the factors remain stable over the years they should not affect the trends seen over time within a given survey. Still, direct comparisons of point estimates across surveys are not advised because of methodologic differences between them. Instead, readers should consider consistency in patterns across years for the same survey.

Measures of Tobacco Use

Measures of tobacco use differ slightly among surveys and by the target population. For each tobacco use measure, the definitions used in the various surveys are summarized below.

Current Smoking: Youth

YRBS defines current smoking among students as having smoked cigarettes on at least 1 day during the 30 days before the survey. NSDUH asks whether the respondent has smoked "part or all of a cigarette" during the past 30 days to determine current usage.

Current Smoking: Adult

For NHIS from 1965–1991, current smokers were defined as respondents who had smoked at least 100 ciga-rettes and who answered "yes" to the question "Do you smoke cigarettes now?" Beginning in 1992, NHIS assessed whether respondents smoked every day, some days, or not at all. Persons who smoked every day or some days were classified as current smokers. In contrast, NSDUH defines a current cigarette smoker as a person who has smoked all or part of a cigarette during the past 30 days. The 100-cigarettes-in-a-lifetime threshold is not traditionally used by NSDUH in reporting the prevalence of current cigarette smoking. This difference, in part, contributes to the consistently higher estimates from NSDUH data than from other surveys. However, the 100-cigarettes-in-a-lifetime threshold question was collected and used in the present report when giving estimates of prevalence for adults.

Intermittent and Daily Smoking

In NSDUH, participants who reported that they had smoked on every day during the past 30 days were classified as daily smokers; those who smoked on 1–29 days were classified as intermittent smokers. In NHIS, intermittent smokers were those who report currently smoking "some days," while daily smokers were those who report currently smoking "every day."

Attempts to Quit Smoking

An attempt to quit smoking was defined in this chapter as having quit smoking for more than 1 day during the previous year. Depending on the year of the survey, NHIS asked about attempts to quit during the past year or in a lifetime. Examples of questions were "During the past 12 months, have you quit smoking for one day or longer?" and "Have you ever stopped smoking for one day or longer?" In the 1998 NHIS, the question was revised to "During the past 12 months, have you stopped smoking for more than one day because you were trying to quit smoking?"

Current Use of Smokeless Tobacco

NSDUH defines current use of smokeless tobacco as having used it during the 30 days before the survey. To determine current usage, NSDUH asks whether the respondent has "used snuff, even once" and/or "used chewing tobacco, even once" during the past 30 days. An affirmative answer to either question categorizes that respondent as a current user. YRBS defines current use of smokeless tobacco as using chewing tobacco, snuff, or dip on at least 1 day during the 30 days before the survey. NHIS defines current use of smokeless tobacco as use on every day or some days.

Current Cigar Use

NSDUH defines current cigar use as having smoked cigars during the 30 days before the survey. Cigars are defined as "big cigars, cigarillos, and even little cigars that look like cigarettes." To determine current usage, NSDUH asks whether the respondent has smoked "part or all of a cigar" during the past 30 days. An affirmative answer to either question categorizes that respondent as a current user. NHIS first asks "Have you ever used a cigar?" Those providing an affirmative response are asked "Do you currently smoke cigars every day, some days or not at all?" Those responding "every day" or "some days" are defined as current cigar smokers. YRBS defines current cigar use as smoking cigars, cigarillos, or little cigars on at least 1 day during the 30 days before the survey.

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Table 13.17 Percent current use[a] of tobacco by product, school level, and gender, National Youth Tobacco Survey 2011 and 2012, United States

A. Middle school

	Total, 2011: % (95% CI)	Total, 2012: % (95% CI)	Females, 2011: % (95% CI)	Females, 2012: % (95% CI)	Males, 2011: % (95% CI)	Males, 2012: % (95% CI)
Tobacco[b]	7.5 (6.5–8.8)	6.7 (5.8–7.7)	5.9 (4.7–7.4)	5.6 (4.7–6.7)	9.0 (7.9–10.3)	7.8 (6.7–9.0)
Both combustible & noncombustible tobacco[c]	1.9 (1.5–2.5)	2.0 (1.6–2.5)	1.6 (1.2–2.1)*	1.6 (1.2–2.1)*	2.2 (1.7–3.0)	2.5 (2.0–3.1)
Only combustible[d]	4.5 (3.7–5.5)	3.7 (3.2–4.3)	3.8 (2.8–5.0)	3.5 (2.8–4.4)	5.2 (4.3–6.2)[†]	3.9 (3.4–4.5)[†]
Only noncombustible[e]	1.1 (0.8–1.4)	1.0 (0.7–1.3)	0.5 (0.3–0.9)	0.5 (0.3–0.8)	1.6 (1.2–2.3)	1.4 (1.0–2.0)
Cigarettes	4.3 (3.5–5.2)	3.5 (2.8–4.3)	4.0 (3.1–5.2)	3.2 (2.5–4.0)	4.5 (3.7–5.5)	3.8 (3.0–4.7)
Cigars	3.5 (2.8–4.2)	2.8 (2.4–3.4)	2.5 (1.9–3.4)	2.4 (1.9–3.2)	4.3 (3.4–5.4)	3.2 (2.7–3.8)
Smokeless tobacco	2.2 (1.8–2.7)	1.7 (1.3–2.1)	1.4 (1.0–2.0)	1.2 (0.8–1.6)	3.0 (2.3–3.8)	2.2 (1.7–2.9)
Pipes	2.2 (1.7–2.9)	1.8 (1.4–2.3)	1.8 (1.3–2.5)	1.7 (1.3–2.3)	2.7 (2.1–2.5)	1.9 (1.4–2.4)
Bidis	1.7 (1.3–2.2)[†]	0.6 (0.5–0.7)[†]	1.4 (1.0–1.9)[†]	0.4 (0.3–0.7)[†]	1.9 (1.4–2.6)[†]	0.7 (0.5–1.0)[†]
Kreteks	1.1 (0.9–1.4)[†]	0.5 (0.4–0.7)[†]	0.9 (0.6–1.3)[†]	0.4 (0.3–0.7)[†]	1.3 (1.0–1.6)[†]	0.6 (0.4–0.9)[†]
Hookah	1.0 (0.8–1.4)	1.3 (1.0–1.7)	1.0 (0.6–1.6)	1.0 (0.7–1.4)	1.1 (0.7–1.5)	1.5 (1.1–2.2)
Snus	0.9 (0.6–1.2)	0.8 (0.6–1.0)	0.8 (0.5–1.2)	0.6 (0.4–0.9)	1.0 (0.6–1.4)	1.0 (0.7–1.4)
Dissolvable tobacco	0.3 (0.2–0.4)*	0.5 (0.4–0.8)*	0.3 (0.2–0.5)*	0.4 (0.2–0.6)*	0.3 (0.1–0.5)*	0.7 (0.4–1.1)*
Electronic cigarettes	0.6 (0.4–0.9)[†]	1.1 (0.9–1.5)[†]	0.4 (0.2–0.7)[†]	0.8 (0.6–1.1)[†]	0.7 (0.4–1.3)[†]	1.5 (1.1–2.1)[†]

Table 13.17   Continued

B. High school

	Total, 2011: % (95% CI)	Total, 2012: % (95% CI)	Females, 2011: % (95% CI)	Females, 2012: % (95% CI)	Males, 2011: % (95% CI)	Males, 2012: % (95% CI)
Tobacco[b]	24.3 (22.1–26.6)	23.3 (21.6–25.2)	19.0 (17.0–21.1)	18.1 (16.2–20.1)	29.4 (26.6–32.4)	28.3 (26.2–30.6)
Both combustible & noncombustible tobacco[c]	6.2 (5.1–7.5)	6.8 (5.9–7.9)	2.0 (1.5–2.6)[†]	3.4 (2.8–4.2)[†]	10.3 (8.4–12.4)	10.1 (8.6–11.7)
Only combustible[d]	15.7 (14.6–16.8)	14.4 (13.2–15.6)	16.3 (14.4–18.3)	14.2 (12.6–15.9)	15.0 (13.8–16.3)	14.6 (13.3–15.9)
Only noncombustible[e]	2.4 (1.8–3.2)	2.1 (1.7–2.7)	0.7 (0.4–1.1)	0.5 (0.3–0.7)	4.1 (3.1–5.5)	3.7 (2.9–4.8)
Cigarettes	15.8 (13.7–18.1)	14.0 (12.5–15.7)	13.8 (11.7–16.2)	11.7 (10.2–13.4)	17.7 (15.2–20.4)	16.3 (14.5–18.3)
Cigars	11.6 (10.5–12.7)	12.6 (11.4–13.9)	7.4 (6.3–8.6)	8.4 (7.2–9.8)	15.7 (14.3–17.2)	16.7 (15.0–18.5)
Smokeless tobacco	7.3 (5.9–9.0)	6.4 (5.5–7.5)	1.6 (1.2–2.2)	1.5 (1.1–2.1)	12.9 (10.4–15.9)	11.2 (9.5–13.0)
Pipes	4.0 (3.4–4.6)	4.5 (4.0–5.2)	2.8 (2.2–3.4)	3.2 (2.7–3.9)	5.1 (4.3–6.0)	5.8 (5.0–6.7)
Bidis	2.0 (1.6–2.5)[†]	0.9 (0.7–1.1)[†]	1.0 (0.7–1.4)[†]	0.5 (0.3–0.7)[†]	2.9 (2.3–3.7)[†]	1.3 (1.0–1.7)[†]
Kreteks	1.7 (1.4–2.0)[†]	1.0 (0.8–1.2)[†]	0.8 (0.6–1.2)[†]	0.5 (0.3–0.7)[†]	2.4 (1.9–2.9)[†]	1.5 (1.1–1.9)[†]
Hookah	4.1 (3.4–5.0)[†]	5.4 (4.6–6.3)[†]	3.5 (2.8–4.4)	4.5 (3.7–5.4)	4.8 (3.7–6.1)	6.2 (5.3–7.3)
Snus	2.9 (2.3–3.7)	2.5 (2.0–3.0)	0.8 (0.5–1.1)	0.9 (0.7–1.3)	5.1 (3.9–6.6)	3.9 (3.2–4.9)
Dissolvable tobacco	2.0 (1.6–2.5)[†]	0.8 (0.6–1.0)[†]	0.1 (0.1–0.4)*	0.6 (0.4–0.9)*	0.6 (0.4–1.0)	1.0 (0.8–1.4)
Electronic cigarettes	1.5 (1.2–2.0)[†]	2.8 (2.3–3.5)[†]	0.7 (0.5–1.0)[†]	1.9 (1.5–2.4)[†]	2.3 (1.7–3.1)[†]	3.7 (2.9–4.8)[†]

Source: National Youth Tobacco Survey 2011–2012.

Note: **CI =** confidence interval.

[a]Current use of cigarettes was determined by asking, "During the past 30 days, on how many days did you smoke cigarettes?"; Current use of cigars was determined by asking, "During the past 30 days, on how many days did you smoke cigars, cigarillos, or little cigars?"; Current use of smokeless tobacco was determined by asking, "During the past 30 days, on how many days did you use chewing tobacco, snuff, or dip?"; Current use of pipe was determined by asking, "During the past 30 days, on how many days did you smoke tobacco in a pipe?"; In 2011, current use of bidis and kreteks were determined by asking, "During the past 30 days, on how many days did you smoke bidis?" and "During the past 30 days, on how many days did you smoke kreteks?"; In 2012, current use of bidis and kreteks were determined by asking, "During the past 30 days, which of the following products have you used on at least one day?"; Current use of hookah, snus, dissolvable tobacco, and electronic cigarettes were deteremined by asking, "During the past 30 days, which of the following products have you used on at least one day?"

[b]Tobacco is use of cigarettes or cigars or smokeless tobacco or tobacco pipes or bidis or kreteks or hookah or snus or dissolvable tobacco or electronic cigarettes on ≥1 day in the past 30 days.

[c]Both combustible & noncombustible tobacco is use of cigarettes or cigars or tobacco pipes or bidis or kreteks or hookah and smokeless tobacco or snus or dissolvable tobacco or electronic cigarettes on ≥1 day in the past 30 days.

[d]Only combustible tobacco is use of cigarettes or cigars or tobacco pipes or bidis or kreteks or hookah on ≥1 day in the past 30 days and no use of smokeless tobacco, snus, dissolvable tobacco, and electronic cigarettes in the past 30 days.

[e]Only noncombustible tobacco is use of smokeless tobacco or snus or dissolvable tobacco or electronic cigarettes on ≥1 day in the past 30 days and no use of cigarettes, cigars, tobacco pipes, bidis, kreteks, and hookah in the past 30 days.

*Data statistically unreliable due to sample size <50 OR relative standard error >0.3 on at least 1 year's data; thus, no t-test was done.

[†]p-value of the t-test for difference between 2011 and 2012 prevalences is <0.05.

Table 13.18   Percent current use[a] of tobacco by product, school level, and race/ethnicity, National Youth Tobacco Survey 2011 and 2012, United States

A. Middle school

	White, non-Hispanic, 2011: % (95% CI)	White, non-Hispanic, 2012: % (95% CI)	Black, non-Hispanic, 2011: % (95% CI)	Black, non-Hispanic,, 2012: % (95% CI)	Other, non-Hispanic, 2011: % (95% CI)	Other, non-Hispanic, 2012: % (95% CI)
Tobacco[b]	6.2 (5.1–7.4)	5.1 (4.2–6.3)	8.5 (6.6–10.9)	7.7 (5.9–10.1)	11.5 (10.2–13.1)	10.5 (8.6–12.8)
Both combustible & noncombustible tobacco[c]	2.0 (1.4–2.6)	1.7 (1.3–2.2)	0.9 (0.4–1.8)*	1.4 (1.0–2.0)*	2.8 (2.1–3.7)	3.4 (2.5–4.6)
Only combustible[d]	3.0 (2.2–4.0)	2.5 (2.0–3.1)	7.0 (5.3–9.0)	5.6 (4.3–7.3)	7.8 (6.8–9.1)[†]	6.1 (4.9–7.5)[†]
Only noncombustible[e]	1.2 (0.8–1.7)	1.0 (0.7–1.4)	0.7 (0.4–1.3)*	0.7 (0.3–2.0)*	0.9 (0.6–1.4)	1.0 (0.6–1.8)
Cigarettes	3.8 (2.8–5.1)	3.1 (2.4–4.0)	3.6 (2.6–5.0)	2.6 (1.7–4.0)	6.7 (5.6–8.0)	5.4 (4.2–7.1)
Cigars	2.3 (1.7–3.0)	1.6 (1.2–2.0)	5.7 (4.3–7.4)	5.0 (3.8–6.6)	6.1 (4.9–7.4)	4.9 (3.8–6.4)
Smokeless tobacco	2.3 (1.8–2.9)	1.6 (1.1–2.2)	1.0 (0.5–2.1)*	0.6 (0.3–1.3)*	2.9 (2.3–3.6)	2.4 (1.7–3.4)
Pipes	1.5 (1.1–2.2)	1.2 (0.8–1.7)	1.3 (0.8–2.1)*	1.2 (0.6–2.2)*	5.0 (4.2–6.1)	3.7 (2.7–5.1)
Bidis	1.0 (0.7–1.5)*	0.3 (0.2–0.5)*	1.9 (1.1–3.2)*	0.6 (0.4–1.0)*	3.5 (2.6–4.6)[†]	1.2 (0.8–1.8)[†]
Kreteks	0.6 (0.4–0.6)	0.3 (0.2–0.5)	0.9 (0.5–1.6)*	0.2 (0.1–0.7)*	2.5 (2.0–3.3)[†]	1.0 (0.6–1.7)[†]
Hookah	0.9 (0.6–1.4)	0.8 (0.6–1.2)	0.9 (0.5–1.7)*	0.9 (0.4–1.8)*	1.7 (1.2–2.3)[†]	3.0 (2.2–4.1)[†]
Snus	1.0 (0.7–1.4)	0.7 (0.5–1.0)	0.6 (0.2–1.3)*	0.4 (0.1–0.9)*	1.0 (0.6–1.5)	1.1 (0.7–1.7)
Dissolvable tobacco	0.2 (0.1–0.5)*	0.4 (0.2–0.7)*	0.4 (0.1–1.2)*	0.5 (0.2–1.5)*	0.2 (0.1–0.5)*	1.0 (0.6–1.6)*
Electronic cigarettes	0.6 (0.4–1.0)*	0.9 (0.6–1.3)*	0.4 (0.2–1.0)*	1.1 (0.6–2.2)*	0.6 (0.4–1.1)*	2.0 (1.4–2.9)*

Table 13.18   Continued

B. High school

	White, non-Hispanic, 2011: % (95% CI)	White, non-Hispanic, 2012: % (95% CI)	Black, non-Hispanic, 2011: % (95% CI)	Black, non-Hispanic,, 2012: % (95% CI)	Other, non-Hispanic, 2011: % (95% CI)	Other, non-Hispanic, 2012: % (95% CI)
Tobacco[b]	26.6 (23.6–29.8)	24.6 (22.3–27.0)	18.9 (15.6–22.8)	22.6 (19.7–25.8)	23.8 (21.2–26.5)	22.5 (19.5–25.6)
Both combustible & noncombustible tobacco[c]	7.5 (6.1–9.3)	8.2 (6.9–9.6)	2.3 (1.2–4.2)*	2.3 (1.6–3.2)*	5.4 (4.3–6.6)	6.4 (5.0–8.1)
Only combustible[d]	15.8 (14.5–17.3)[†]	13.6 (12.2–15.0)[†]	15.7 (13.1–18.6)	19.2 (16.4–22.4)	16.9 (15.2–18.3)	14.8 (13.0–16.8)
Only noncombustible[e]	3.2 (2.4–4.2)	2.8 (2.2–3.6)	1.0 (0.4–2.3)*	1.1 (0.6–1.9)*	1.5 (1.0–2.3)	1.3 (0.9–1.9)
Cigarettes	17.6 (14.7–20.9)	15.4 (13.2–17.8)	10.6 (7.6–14.6)	9.6 (7.6–12.0)	15.8 (13.9–17.8)	14.3 (12.0–16.9)
Cigars	12.1 (10.7–13.6)	12.2 (10.8–13.8)	11.7 (9.8–13.9)[†]	16.7 (14.4–19.3)[†]	11.3 (9.8–13.1)	12.4 (10.6–14.4)
Smokeless tobacco	9.2 (7.4–11.5)	8.1 (6.9–9.5)	3.0 (1.8–5.1)	2.2 (1.5–3.2)	5.1 (3.8–6.8)	5.1 (3.8–6.8)
Pipes	3.5 (2.9–4.4)	4.5 (3.8–5.4)	2.4 (1.5–3.8)	2.9 (1.8–4.5)	6.3 (5.2–7.7)	6.2 (5.2–7.4)
Bidis	1.4 (1.0–2.0)[†]	0.7 (0.5–1.0)[†]	2.0 (1.2–3.2)*	0.8 (0.4–1.7)*	3.7 (2.9–4.8)[†]	1.4 (0.9–2.2)[†]
Kreteks	1.4 (1.0–2.0)	1.1 (0.8–1.5)	1.3 (0.8–2.2)*	0.6 (0.3–1.1)*	2.5 (1.9–3.3)[†]	0.9 (0.6–1.4)[†]
Hookah	4.3 (3.4–5.4)[†]	6.1 (5.2–7.2)[†]	1.7 (0.9–3.0)	2.1 (1.6–2.9)	5.1 (4.1–6.3)	6.6 (5.1–8.5)
Snus	3.7 (2.8–4.9)	3.3 (2.6–4.2)	0.7 (0.3–1.5)*	0.6 (0.3–1.1)*	2.3 (1.7–3.1)	1.8 (1.3–2.5)
Dissolvable tobacco	0.3 (0.1–0.5)*	0.7 (0.5–0.9)*	0.3 (0.1–1.2)*	0.8 (0.4–1.3)*	0.8 (0.5–1.3)	1.4 (1.0–2.1)
Electronic cigarettes	1.8 (1.3–2.4)[†]	3.4 (2.7–4.2)[†]	0.8 (0.3–1.7)*	1.1 (0.7–1.9)*	1.3 (0.8–2.1)[†]	2.7 (1.9–3.8)[†]

Source: National Youth Tobacco Survey 2011–2012.

Note: **CI** = confidence interval.

[a]Current use of cigarettes was determined by asking, "During the past 30 days, on how many days did you smoke cigarettes?"; Current use of cigars was determined by asking, "During the past 30 days, on how many days did you smoke cigars, cigarillos, or little cigars?"; Current use of smokeless tobacco was determined by asking, "During the past 30 days, on how many days did you use chewing tobacco, snuff, or dip?"; Current use of pipe was determined by asking, "During the past 30 days, on how many days did you smoke tobacco in a pipe?"; In 2011, current use of bidis and kreteks were determined by asking, "During the past 30 days, on how many days did you smoke bidis?" and "During the past 30 days, on how many days did you smoke kreteks?"; In 2012, current use of bidis and kreteks were determined by asking, "During the past 30 days, which of the following products have you used on at least one day?"; Current use of hookah, snus, dissolvable tobacco, and electronic cigarettes were deteremined by asking, "During the past 30 days, which of the following products have you used on at least one day?"

[b]Tobacco is use of cigarettes or cigars or smokeless tobacco or tobacco pipes or bidis or kreteks or hookah or snus or dissolvable tobacco or electronic cigarettes on ≥1 day in the past 30 days.

[c]Both combustible & noncombustible tobacco is use of cigarettes or cigars or tobacco pipes or bidis or kreteks or hookah and smokeless tobacco or snus or dissolvable tobacco or electronic cigarettes on ≥1 day in the past 30 days.

[d]Only combustible tobacco is use of cigarettes or cigars or tobacco pipes or bidis or kreteks or hookah on ≥1 day in the past 30 days and no use of smokeless tobacco, snus, dissolvable tobacco, and electronic cigarettes in the past 30 days.

[e]Only noncombustible tobacco is use of smokeless tobacco or snus or dissolvable tobacco or electronic cigarettes on ≥1 day in the past 30 days and no use of cigarettes, cigars, tobacco pipes, bidis, kreteks, and hookah in the past 30 days.

*Data statistically unreliable due to sample size <50 OR relative standard error >0.3 on at least 1 year's data; thus, no t-test was done.

[†]p-value of the t-test for difference between 2011 and 2012 prevalences is <0.05.