

Corrected Text:

Tobacco Use, Access, and Exposure to Tobacco in Media Among Middle and High School Students — United States, 2004

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Two of the national health objectives for 2010 are to reduce the prevalence of any tobacco use during the preceding month to <21% and the prevalence of current cigarette use to <16% among high school students (objectives 27–2a and 27–2b) (1). The National Youth Tobacco Survey (NYTS), conducted by CDC in 2004, provided estimates of current use of tobacco products and selected indicators related to tobacco use, including youth exposure to tobacco–related media and access to cigarettes. This report summarizes data from the 2004 NYTS and describes changes in tobacco use and indicators related to tobacco use since 2002 (2). During 2002–2004, middle school students reported decreases in pipe use, seeing actors using tobacco on television or in movies, and seeing advertisements for tobacco products on the Internet. Among high school students, no changes were observed in the use of tobacco or in access to tobacco products; however, seeing actors using tobacco on television or in movies declined slightly, and seeing advertisements for tobacco products on the Internet increased. The lack of substantial decreases in the use of almost all tobacco products among middle and high school students underscores the need to fully implement evidence–based strategies (e.g., increasing the retail price of tobacco products, implementing smoking–prevention media campaigns, and decreasing minors' access as part of comprehensive tobacco–control programs) that are effective in preventing youth tobacco use (3).

Similar to the 2002 NYTS (2), the sampling frame for the 2004 NYTS consisted of all U.S. public and private schools and was stratified by U.S. Census Bureau data by region and urbanicity; non–Hispanic black, Hispanic, and Asian students were oversampled. A total of 91 primary sampling units (PSUs) (i.e., large counties or groups of counties) were selected in the first stage of sampling, and 288 schools were selected from these PSUs in the second stage of sampling. Of these 288 eligible schools, 267 (93%) participated in the survey. In each school, typically five classes (approximately 125 students) were selected randomly from a required subject area (e.g., English) or a particular class period (e.g., all 2nd period classes). Participation was voluntary and anonymous, and school parental permission procedures were followed; students recorded their responses in a computer–scannable booklet.

Of 31,774 students who were sampled from the participating schools, 27,933 (88%) completed the survey (14,034 middle school students [grades 6–8], 13,738 high school students [grades 9–12], and 161 students unclassified with respect to grade). Data were weighted to be nationally representative. Statistical software was used to compute 95% confidence intervals for prevalence estimates. Differences in tobacco use estimates during 2002–2004 were assessed by using t–tests at two–tailed significance level. All statistically significant results were $p < 0.05$. Current use of specific tobacco products (i.e., cigarettes, cigars, smokeless tobacco, pipes, bidis [leaf–wrapped, flavored cigarettes from India], or kreteks [clove cigarettes]) was defined as having used that product on at least 1 day during the 30 days preceding the survey. Current use of any tobacco product was defined as having used any of the listed products on at least 1 day during the 30 days preceding the survey. Students were asked how often they saw actors using tobacco on television or in movies or saw advertisements for tobacco products on the

Internet, whether they were asked for proof of age when they bought or tried to buy cigarettes in a store during the preceding 30 days, and whether anyone ever refused to sell them cigarettes because of their age during the preceding 30 days.

In 2004, a total of 11.8% of middle school students reported current use of any tobacco product ([Table 1, Corrected](#)). Cigarettes (8.4%) were the most commonly used product, followed by cigars (5.3%), smokeless tobacco (2.8%), pipes (2.7%), bidis (2.4%), and kreteks (1.6%). During 2002–2004, no significant changes were observed among middle school students in use of any tobacco or cigarettes (in 2002, a total of 13.3% of middle school students reported current use of any tobacco product, and 9.8% reported current use of cigarettes), cigars, smokeless tobacco, bidis, or kreteks. Pipe use declined significantly, from 3.5% to 2.7%. Among males, cigarette smoking and use of pipes and kreteks declined, from 9.8% to 7.9%, 5.1% to 3.5%, and 2.7% to 2.0%, respectively. Among Asians, use cigarettes, cigars, and pipes decreased significantly, from 7.4% to 2.7%, 5.0% to 1.2%, and 4.6% to 1.5%, respectively. Among non-Hispanic blacks, use of pipes decreased significantly, from 3.9% to 2.2%. Among Hispanics, use of cigars and bidis increased significantly, from 6.3% to 8.2% and 2.9% to 4.3%, respectively

In 2004, a total of 27.4% of high school students reported current use of any tobacco product ([Table 2, Corrected](#)). Cigarettes (21.7%) were the most commonly used product, followed by cigars (12.9%), smokeless tobacco (5.5%), pipes (3.2%), bidis (2.7%), and kreteks (2.5%). During 2002–2004, no significant decreases were observed in use of any tobacco or use of a specific tobacco product (in 2002, a total of 28.2% of high school students reported current use of any tobacco product, and 22.5% reported current use of cigarettes). Among non-Hispanic blacks, use of any tobacco product and pipes decreased, from 21.7% to 16.8% and 3.7% to 1.7%, respectively. Among Hispanics, use of cigars and bidis increased significantly, from 10.8% to 13.5% and 3.5% to 4.8%, respectively.

During 2002–2004, a significant overall decline was observed among middle school students who reported seeing actors using tobacco on television or in movies, from 89.9% (not shown) to 77.8%, and who reported seeing advertisements for tobacco products on the Internet, from 42.7% (not shown) to 34.1% ([Table 3, Corrected](#)). In addition, in 2004, a total of 69.9% of current cigarette smokers in middle school said they were not asked to show proof of age when they purchased or attempted to purchase cigarettes from a store, and 68.5% said they were not refused purchase of cigarettes because of their age. No significant differences were observed from 2002.

During 2002–2004, a significant overall decline was observed among high school students who reported seeing actors using tobacco on television or in movies, from 91.3% (not shown) to 86.6% ([Table 3, Corrected](#)). However, a significant increase was observed, from 33.5% (not shown) to 38.6%, in seeing advertisements for tobacco products on the Internet. In addition, in 2004, 63.4% of current smokers aged <18 years in high school said they were not asked to show proof of age when they purchased or attempted to purchase cigarettes from a store, and 61.2% said they were not refused purchase of cigarettes because of their age. No significant differences were observed from 2002.

Editorial Note: Preventing smoking initiation and use among adolescents is critical to ending the epidemic of tobacco use in the United States. In assessing state and national tobacco-control efforts, multiple indicators are needed to evaluate progress in reducing tobacco use among adolescents, in particular, measures of exposure to influences that promote or discourage tobacco use. NYTS serves as a national evaluation tool and as a benchmark for the 29 states that implemented a comparable state Youth Tobacco Survey in 2003 and 2004. Data from two of the multiple indicators in NYTS indicated no change occurred in minors' access to cigarettes, whereas declines in seeing actors using tobacco on television or in movies occurred among both middle and high school students. Although the levels of exposure to seeing actors using tobacco decreased from 91.3% in 2002 to 86.6% in 2004 among high school students and from 89.9% in 2002 to 77.8% in 2004 among middle school students, more than three-fourths of middle and high school students are still exposed to these images. Parental monitoring of and limitations on minors' access to media sources might reduce exposures (4); however, reductions in exposure large enough to effectively prevent smoking initiation might require different industry practices on smoking images in movies (5).

Because the overall prevalence of any tobacco use or cigarette smoking did not change during 2002–2004 (2), data from future surveys will be important in determining whether progress toward meeting the national health objectives for 2010 is slowing. Several factors might be related to this lack of change in prevalence. From winter 1997 to spring 2002, the retail price of cigarettes increased approximately 80%, but from spring 2002 to spring 2004, the price increased only 4% (6). Although smoking-prevention media campaigns are effective in preventing youth smoking initiation (7), funding for these campaigns has declined substantially (8). In addition, during the preceding 3 fiscal years (FYs), a 28% decline in the total investment in statewide comprehensive tobacco-prevention and -control programs occurred, from \$749.7 million in FY 2002 to \$542.6 in FY 2004 (8). Finally, whereas factors preventing tobacco use (e.g., increasing the retail price of tobacco products, implementing smoking-prevention media campaigns, and funding for comprehensive state tobacco-prevention and -control programs) declined from 2002 to 2004, tobacco industry expenditures on tobacco advertising and promotion increased from \$5.7 billion in 1997 to \$12.5 billion in 2002 (9). The findings in this report are subject to at least three limitations. First, these data apply only to youths who attended middle school or high school. Among persons aged 16–17 years in the United States, approximately 5% were not enrolled in a high school program and had not completed high school in 2000 (2). Second, the questionnaire was offered only in English. Thus, comprehension might have been limited for students with English as a second language. Third, significance testing did not control for possible changes in demographics from 2002 to 2004. The decline in youth smoking prevalence since the late 1990s has been a public health success, reversing the pattern of increase in the early 1990s (2). However, the lack of substantial change among middle and high school students during the preceding two years emphasizes the need for sustained, comprehensive, evidence-based programs that demonstrate the ability to reduce adolescent smoking prevalence (10).

References

1. US Department of Health and Human Services. Healthy People 2010 (conference ed., 2 vols.). Washington, DC: US Department of Health and Human Services; 2000.
2. CDC. Tobacco use among middle and high school students—United States, 2002. *MMWR* 2003;52:1096–8.
3. Task Force on Community Preventive Services. The guide to community preventive services: tobacco use prevention and control. *Am J Prev Med* 2001;20(2 Suppl 1):1–87.
4. Sargent JD, Dalton MA, Heatherton T, Beach M. Modifying exposure to smoking depicted in movies: a novel approach to preventing adolescent smoking. *Arch Pediatr Adolesc Med* 2003;157:643–8.
5. Glanz SA. Smoking in movies: a major problem and a real solution. *Lancet* 2003;362:258–9.
6. US Department of Labor. Consumer price index—all urban consumers. U.S. city average, cigarettes. Washington, DC: US Department of Labor, Bureau of Labor Statistics; 2004. Available at <http://data.bls.gov/pdq/outside.jsp?survey=cu>.
7. Farrelly MC, Davis KC, Haviland L, Messeri P, Heaton CG. Evidence of a dose–response relationship between “truth” antismoking ads and youth smoking prevalence. *Am J Public Health* 2005;95:425–31.
8. Campaign for Tobacco-Free Kids, American Lung Association, American Cancer Society, American Heart Association (December 2, 2004). A broken promise to our children: the 1998 state tobacco settlement six years later. Washington, DC: National Center for Tobacco-Free Kids; 2004. Available at <http://www.tobaccofreekids.org/reports/settlements/2005/fullreport.pdf>.
9. Federal Trade Commission. Cigarette report for 2002. Washington, DC: Federal Trade Commission; 2003. Available at <http://www.ftc.gov/reports/cigarette/041022cigaretterpt.pdf>.
10. Tauras JA, Chaloupha FJ, Farrelly MC, et al. State tobacco control spending and youth smoking. *Am J Public Health* 2005;95:338–44.