

### **Tobacco Use Among High School Students — United States, 1997**

Tobacco use is the single leading preventable cause of death in the United States (1). Approximately 80% of tobacco use occurs for the first time among youth aged <18 years (2), and the prevalence of cigarette smoking among adolescents increased during the early 1990s (3). To determine prevalence rates of cigarette, smokeless tobacco (chewing tobacco or snuff), and cigar use for U.S. high school students, CDC analyzed data from the 1997 Youth Risk Behavior Survey (YRBS). This report summarizes the results of the analysis, which indicate that the prevalence of current cigarette smoking among U.S. high school students increased from 27.5% in 1991 to 36.4% in 1997 and that, in 1997, 42.7% of students used cigarettes, smokeless tobacco, or cigars during the 30 days preceding the survey.

YRBS, a component of CDC's Youth Risk Behavior Surveillance System (4), biennially measures the prevalence of priority health-risk behaviors among youth through representative national, state, and local surveys. The 1997 national YRBS used a three-stage cluster sample design to obtain a representative sample of 16,262 students in grades 9–12 in the 50 states and the District of Columbia. The school response rate was 79.1%, the student response rate was 87.2%, and the overall response rate was 69.0%. Data were weighted to provide national estimates, and SUDAAN<sup>®</sup> (Software for the Statistical Analysis of Correlated Data) was used to calculate standard errors for determining 95% confidence intervals.\*

Students completed a self-administered questionnaire that included questions about cigarette, smokeless tobacco, and cigar use. Lifetime cigarette smokers were defined as students who had ever smoked cigarettes, even one or two puffs. Current cigarette, smokeless tobacco, and cigar users were defined as students who reported product use on  $\geq 1$  of the 30 days preceding the survey. Frequent cigarette use was defined as smoking cigarettes on  $\geq 20$  of the 30 days preceding the survey. Any current tobacco use was defined as use of cigarettes, smokeless tobacco, or cigars on  $\geq 1$  of the 30 days preceding the survey. Data are presented only for non-Hispanic black, non-Hispanic white, and Hispanic students because the numbers of students from other racial/ethnic groups were too small for meaningful analysis.

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\*Differences between prevalence estimates were considered statistically significant if the 95% confidence intervals did not overlap. Use of trade names and commercial sources is for identification only and does not imply endorsement by CDC and the U.S. Department of Health and Human Services.

*Tobacco Use Among High School Students — Continued***Prevalence of Cigarette Use**

The overall prevalences of lifetime, current, and frequent cigarette use were 70.2%, 36.4%, and 16.7%, respectively (Table 1). The prevalence of lifetime cigarette smoking was higher among Hispanic male students (76.9%) than among white male students (70.4%). The prevalence of current cigarette smoking was higher among white students (39.7%) than Hispanic (34.0%) and black (22.7%) students, and Hispanic students (34.0%) were more likely to report current cigarette smoking than black students (22.7%). Among males, the prevalence of current cigarette smoking was higher among white students (39.6%) than black students (28.2%). Among females, the prevalence of current cigarette smoking was higher among white students (39.9%) than Hispanic (32.3%) and black (17.4%) students, and Hispanic female students (32.3%) were more likely to report current cigarette smoking than black female students (17.4%). Among black students, males (28.2%) were more likely than females (17.4%) to report current cigarette smoking.

The prevalence of frequent cigarette smoking was higher among white students (19.9%) than among Hispanic (10.9%) and black (7.2%) students. Among males, the prevalence of frequent cigarette smoking was higher among white students (19.8%) than black students (10.1%). Among females, the prevalence of frequent cigarette smoking was higher among white students (20.1%) than Hispanic (8.1%) and black (4.3%) students. Among black students, males (10.1%) were more likely than females (4.3%) to report frequent cigarette smoking.

Trend analyses of current cigarette smoking found significantly increasing trends overall and among all racial/ethnic subgroups ( $p < 0.001$ ). The overall prevalence of current cigarette smoking increased from 27.5% in 1991 to 36.4% in 1997. Among white students, current cigarette smoking increased from 30.9% in 1991 to 39.7% in 1997. Among black students, current cigarette smoking increased from 12.6% in 1991 to 22.7% in 1997. Among Hispanic students, current cigarette smoking increased from 25.3% in 1991 to 34.0% in 1997.

**Prevalence of Smokeless Tobacco Use**

The overall prevalence of current smokeless tobacco use was 9.3% (Table 1). The prevalence of current smokeless tobacco use was higher among male students (15.8%) than female students (1.5%) and among white students (12.2%) than black (2.2%) and Hispanic (5.1%) students. White male students (20.6%) were more likely than any other subgroup to report current smokeless tobacco use; Hispanic male students (8.4%) were more likely than black male students (3.2%) to report this behavior. Among Hispanic students, males (8.4%) were more likely than females (1.2%) to report current smokeless tobacco use.

**Prevalence of Cigar Use**

The overall prevalence of current cigar use was 22.0% (Table 1). Male students (31.2%) were more likely to use cigars than female students (10.8%). This difference held within each racial/ethnic subgroup. Ninth-grade students (17.3%) were less likely than 11th-grade students (24.2%) to use cigars.

**Prevalence of Any Current Tobacco Use**

The overall prevalence of any current tobacco use was 42.7% (Table 1). Male students (48.2%) were more likely to report any current tobacco use than female students

**TABLE 1. Percentage of high school students\* who used cigarettes, smokeless tobacco, or cigars, by sex, race/ethnicity, and grade — United States, Youth Risk Behavior Survey, 1997**

Category	Cigarette use			Current smokeless tobacco use**		Current cigar use††		Any current tobacco use§§				
	Lifetime†	Current§	Frequent¶	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	
<b>Sex</b>												
Male	70.9	(±1.9)	37.7	(±2.7)	17.6	(±2.7)	15.8	(±3.7)	31.2	(±2.3)	48.2	(±2.8)
Female	69.3	(±2.6)	34.7	(±2.8)	15.7	(±2.1)	1.5	(±0.7)	10.8	(±2.4)	36.0	(±2.8)
<b>Race/Ethnicity***</b>												
White, non-Hispanic	70.4	(±2.3)	39.7	(±2.4)	19.9	(±2.2)	12.2	(±2.5)	22.5	(±2.6)	46.8	(±1.9)
Male	70.4	(±2.4)	39.6	(±3.8)	19.8	(±3.3)	20.6	(±4.0)	32.5	(±2.1)	51.5	(±2.4)
Female	70.3	(±3.3)	39.9	(±3.2)	20.1	(±3.2)	1.6	(±0.9)	9.6	(±2.6)	40.8	(±3.1)
Black, non-Hispanic	68.4	(±4.4)	22.7	(±3.8)	7.2	(±1.8)	2.2	(±1.1)	19.4	(±3.2)	29.4	(±3.0)
Male	70.1	(±4.7)	28.2	(±5.5)	10.1	(±3.1)	3.2	(±1.7)	28.1	(±5.3)	37.6	(±4.7)
Female	66.8	(±5.2)	17.4	(±3.9)	4.3	(±1.8)	1.3	(±1.2)	11.0	(±2.9)	21.5	(±4.2)
Hispanic	75.0	(±2.7)	34.0	(±2.7)	10.9	(±2.6)	5.1	(±2.3)	20.3	(±4.4)	36.8	(±3.4)
Male	76.9	(±3.6)	35.5	(±3.6)	13.2	(±3.7)	8.4	(±3.3)	26.3	(±7.0)	41.3	(±5.0)
Female	72.7	(±3.9)	32.3	(±3.7)	8.1	(±2.7)	1.2	(±1.0)	13.0	(±2.8)	31.4	(±3.8)
<b>Grade</b>												
9	67.7	(±5.1)	33.4	(±5.1)	13.1	(±3.8)	9.7	(±2.7)	17.3	(±2.9)	38.0	(±5.3)
10	70.0	(±3.9)	35.3	(±4.1)	15.0	(±1.9)	6.8	(±1.7)	22.3	(±3.4)	40.9	(±4.1)
11	68.8	(±3.1)	36.6	(±3.6)	18.9	(±2.8)	10.0	(±2.5)	24.2	(±2.9)	44.2	(±3.1)
12	73.7	(±4.1)	39.6	(±4.9)	19.4	(±3.1)	10.5	(±3.6)	23.8	(±4.2)	47.0	(±6.1)
<b>Total</b>	<b>70.2</b>	<b>(±1.9)</b>	<b>36.4</b>	<b>(±2.3)</b>	<b>16.7</b>	<b>(±1.9)</b>	<b>9.3</b>	<b>(±2.2)</b>	<b>22.0</b>	<b>(±2.1)</b>	<b>42.7</b>	<b>(±2.3)</b>

\* N=16,262.

† Ever tried cigarette smoking, even one or two puffs.

§ Smoked cigarettes on ≥1 of the 30 days preceding the survey.

¶ Smoked cigarettes on ≥20 of the 30 days preceding the survey.

\*\* Used smokeless tobacco on ≥1 of the 30 days preceding the survey.

†† Smoked cigars on ≥1 of the 30 days preceding the survey.

§§ Smoked cigarettes, used smokeless tobacco, or smoked cigars on ≥1 of the 30 days preceding the survey.

¶¶ Confidence interval.

\*\*\* Numbers for other racial/ethnic groups were too small for meaningful analysis.

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(36.0%), and this difference held within each racial/ethnic subgroup. The prevalence of any current tobacco use was higher among white students (46.8%) than Hispanic (36.8%) and black (29.4%) students. These differences held for both male and female students. The prevalence of any current tobacco use was higher among Hispanic students (36.8%) than black students (29.4%) overall and among female students (31.4% of Hispanic females and 21.5% of black females).

*Reported by: Office on Smoking and Health, and Div of Adolescent and School Health, National Center for Chronic Disease Prevention and Health Promotion, CDC.*

**Editorial Note:** This report is the first to include cigarette, smokeless tobacco, and cigar use in a measure of current tobacco use and the first to report on past-month cigar use among a nationally representative sample of high school students. The increasing prevalence of cigarette smoking since 1991, the high rate of smokeless tobacco and cigar use, and the high rate of any tobacco use suggest that a major proportion of U.S. youth already have or are at risk for nicotine addiction (5,6) and the subsequent health problems caused by tobacco use (2,6).

In 1997, the prevalence of current cigarette smoking was 32% higher than in 1991; current cigarette smoking increased 80% among black students, 34% among Hispanic students, and 28% among white students. The reasons for the large differences in overall prevalence of current cigarette smoking and the increases in cigarette smoking among students in all the racial/ethnic groups are unclear and require further investigation. CDC is conducting research to help explain these differences and the reasons for continued increases in tobacco use among all youth.

The findings in this report are subject to at least two limitations. First, these data apply only to youth who attend high school and, therefore, are not representative of all persons in this age group. In 1996, only 6% of persons aged 16–17 years were not enrolled in a high school program and had not completed high school (7). Second, the measure of any current tobacco use described in this report might be an underestimate, because it does not include measures of pipe and “roll-your-own” tobacco smoking.

In 1994, CDC recommended that school-based tobacco-use prevention programs begin in elementary school and continue through 12th grade, with intensive instruction for students in grades six through eight (i.e., up to 10 smoking-focused sessions each year) (8). Data from the 1994 School Health Policies and Programs Study indicated that only 55% of middle/junior high and 47% of senior high school health education teachers taught tobacco-use prevention as a major topic (9). Of these teachers, 43% of middle/junior high and 42% of senior high school teachers taught only one or two classes on the topic. Additional research findings indicate that school-based tobacco-use prevention programs are most effective when supported by community-wide programs that involve parents, peers, mass media, and community organizations (2).

Tobacco-use prevention activities should be designed to prevent the use of all tobacco products. Such activities should include increasing tobacco prices, reducing access (e.g., by implementing and adequately enforcing minors' access restrictions), reducing the appeal of tobacco products (e.g., by restricting advertising and promotion), and conducting youth-oriented mass media campaigns and school-based tobacco-use prevention programs (2,10). Establishing health-oriented social norms (e.g., by increasing provision of smoke-free indoor air and decreasing modeling of

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tobacco use by parents, teachers, and celebrities) and increasing support and involvement from parents and schools also will contribute to prevention (2).

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