

# The University of Michigan

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## **Cigarette use and smokeless tobacco use decline substantially among teens.**

FOR RELEASE AT 10 A.M EST, THURSDAY, DECEMBER, 14, 2000.

EDITORS: Results of this survey are scheduled to be announced at a news conference in Washington, D.C., at the Department of Health and Human Services Hubert H. Humphrey Building. Participating in the release of results will be Secretary of Health and Human Services Donna E. Shalala, Director of the Office of National Drug Control Policy Barry R. McCaffrey, Director of the National Institute on Drug Abuse Alan I. Leshner, and the principal investigator of the Monitoring the Future study, Lloyd D. Johnston. For further information on the study, contact Johnston at (734)763-5043.

ANN ARBOR---Cigarette smoking among American adolescents continues its "encouraging ongoing decline," according to the latest results from the Monitoring the Future study, conducted at the University of Michigan Institute for Social Research (ISR). Reporting on the 26th national survey in the Monitoring the Future series, U-M psychologists Lloyd Johnston, Jerald Bachman, and Patrick O'Malley conclude that the improvements now occurring will have significant long-term consequences for the health and longevity of this generation of adolescents.

In the 2000 survey 15 percent, 24 percent and 31 percent of the 8th-, 10th- and 12th-graders, respectively, indicated smoking at least once in the prior 30 days. The proportions who were daily smokers were 7 percent, 14 percent, and 21 percent.

"Cigarette smoking rose sharply among American teenagers in the '90s as we have been reporting," states Johnston, principal investigator of the study, "and we know from our studies and other studies that these young people are now carrying their heavier smoking habits with them into their twenties, and very likely beyond. That's why it's so important for teen-agers not to become smokers in the first place." Cigarette smoking is the leading preventable cause of death and disease in the United States.

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After reporting a nearly 50 percent increase in the rate of smoking among younger teens---eighth- and 10th-graders---between 1991 and 1996, the study has been showing a fairly steady reduction in smoking since then. For instance, in 1991, 14.3 percent of eighth-graders said they had smoked at least one cigarette in the prior 30 days (called "current smoking"). The rate rose to 21.0 percent by 1996, but then began falling back, reaching 14.6 percent in 2000, including a 2.8 percentage point decline between 1999 and 2000. Among 10th-graders, the rate of current smoking was 20.8 percent in 1991, rose to 30.4 percent in 1996, and then fell steadily back to 23.9 percent by 2000.

Twelfth-graders showed a similar, but somewhat lagged, pattern of change: they started from a recent low in current smoking of 27.8 percent in 1992, rose steadily to 36.5 percent by 1997, and have since dropped back to 31.4 percent by 2000. All three grade levels showed statistically significant declines this year on one or more of the smoking measures---current smoking, current daily smoking, or current half-pack-a-day smoking.

"We haven't yet regained all the ground lost early in the nineties, but have nearly done so with the younger teens, who are harbingers of what will be happening among older teens in a few years," says Johnston.

Monitoring the Future is conducted at the U-M Institute for Social Research. The study has been supported since its inception 26 years ago through a series of investigator-initiated research grants made by the National Institute on Drug Abuse (NIDA), one of the National Institutes of Health in the U.S. Department of Health and Human Services. This year's survey results are based on nationally representative samples of 8th, 10th, and 12th grade students attending public and private schools in the coterminous United States. In all, 45,200 students located in 435 schools completed the survey in the spring of 2000.

"Just as the earlier increase in smoking was very broad, showing up in virtually every demographic subgroup studied, so has the decline been very broad," observes Johnston. It can be seen in all grade levels among both males and females, college bound and those not college bound, in all four regions of the country, in urban and non-urban areas, in all three of the largest racial ethnic groups (Blacks, Whites, and Hispanics), and across different levels of socioeconomic status. [Tables 2 and 3.]

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"There are some major differences across these various groups in terms of their absolute rates of smoking," says Johnston," but all groups have been showing a decline." The study finds smoking rates among African American adolescents to be considerably lower than among their White and Hispanic counterparts. College-bound students are also much less likely to smoke than those not planning to complete college. Smoking tends to be somewhat higher in non-urban areas than in urban areas; and, in the lower grades at least, smoking tends to be inversely related to the parents' educational level.

While the increase in youth smoking in the early '90s was accompanied by some decline in the proportion of students seeing a great risk associated with pack-a-day smoking, after 1995 this belief began to rise steadily at all three grade levels. This increase in perceived risk continued into 2000. Between 1995 and 2000, the proportion of students saying there is a "great risk" in pack-a-day smoking rose from 50 percent to 59 percent at eighth-grade, from 57 percent to 66 percent at 10th-grade, and from 66 percent to 73 percent at 12th-grade.

"Unfortunately the younger teens are not as aware of the dangers of smoking as the older ones," Johnston says, "but this has been true for a long time. I think this change in perceived risk, which preceded the downturn in teen smoking by one to two years, may have been an important determinant of that downturn. And disapproval of cigarette smoking among teens, which also had been on the decline in the first part of the '90s, began to rise a year or two after perceived risk turned around. It, too, may have contributed."

What has caused these changes in teen attitudes and beliefs about smoking is open to conjecture. "I have to believe that all of the adverse publicity suffered by the industry during the sequence of political and legal events that finally led to the tobacco settlement with the states, had an influence," observes Johnston. "Further, a number of states initiated vigorous efforts to reduce teen smoking during this time with ad campaigns and other efforts. Finally, the Joe Camel ad campaign folded its tent, and billboard advertising of cigarettes was ended. Any and all of those things may well have played a role in changing attitudes about smoking. Also, there have been some important increases in the price of

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cigarettes in the last few years, which undoubtedly contributed to the decline in use."

For the younger teens, still another factor may have been reduced access to cigarettes. Between 1996 and 2000, the proportion of eighth-graders who said it would be "fairly easy" or "very easy" for them to get cigarettes declined steadily from 77 percent to 69 percent, which, of course, still means that most of them have easy access. Among 10th-graders the decline over the same interval was from 91 percent to 87 percent. Both grades had statistically significant declines in reported availability in 2000. [Figure 1.]

### Smokeless Tobacco

Cigarettes are not the only tobacco product showing a downward trend among youth. Rates of smokeless tobacco consumption by American teens have declined by even larger proportions. In the '90s, peak rates of smokeless tobacco use among eighth- and 10th-graders were reached in 1994, when 7.7 percent of eighth-graders and 10.5 percent of 10th-graders indicated using in the prior 30 days. Use peaked among 12th-graders a year later, in 1995, when 12.2 percent of the 12th-graders indicated such use. Since those peak years, use has fallen fairly steadily, dropping by 45 percent among eighth-graders, 42 percent among 10th-graders, and 38 percent so far among 12th-graders. All grades showed some continued decline in 2000, though none of these one-year changes was large enough to be statistically significant. [Figure 2.]

Because boys are the predominant users of smokeless tobacco, their rates of use are considerably higher than the overall rates. Current use rates for boys in 2000 are 6.7 percent in eighth-grade, 11.4 percent in 10th-grade, and 14.4 percent (or one in every seven) in 12th-grade. Boys' daily use rates at the three grade levels are 1.5 percent, 3.9 percent, and 6.5 percent, respectively.

"Smokeless tobacco can cause lip, throat, and tongue cancer and a number of other serious health problems," notes Johnston, "so I see this large decline in its use by our young people to be a very positive development. Using smokeless or 'spit' tobacco also may well establish a dependence on nicotine which then leads to later cigarette smoking,

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when spitting all the time becomes intolerable to the user's spouse and fellow employees."

In addition to being heavily concentrated among boys, smokeless tobacco use is considerably higher among those not planning to attend college compared to the college-bound. It also tends to be disproportionately concentrated in more rural areas, in the South and North Central regions of the country, among Whites as opposed to Blacks and Hispanics, and in those coming from less educated families. Substantial declines in use are to be found in all groups, however, suggesting that there are culture-wide influences at work here.

As was true for cigarettes, students at all three grade levels have shown a steady increase since 1995 in the level of risk perceived to be associated with using smokeless tobacco regularly. And since 1996 the proportion of students disapproving of its use has been increasing, as well.

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The annual surveys of high school seniors in the Monitoring the Future study were begun in 1975, and the annual surveys of eighth- and 10th-grade students were added, starting in 1991. At each grade level students are drawn to be representative of all students in public and private schools in the coterminous United States. They complete self-administered, optically-scanned questionnaires given to them in their classrooms in the spring of the year by U-M personnel. In 2000 the sample sizes for eighth-, 10th-, and 12th-grades, respectively, were 17,311, 14,576, and 13,286. In all about 45,200 students in 435 schools participated in the study.

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**TABLE 1**

**Long-Term Trends in Prevalence of Use of Cigarettes for Eighth, Tenth, and Twelfth Graders**

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	'99-'00 change	
<b>Lifetime</b>																												
8th Grade																		44.0	45.2	45.3	46.1	46.4	49.2	47.3	45.7	44.1	40.5	-3.6sss
10th Grade																		55.1	53.5	56.3	56.9	57.6	61.2	60.2	57.7	57.6	55.1	-2.5s
12th Grade	73.6	75.4	75.7	75.3	74.0	71.0	71.0	70.1	70.6	69.7	68.8	67.6	67.2	66.4	65.7	64.4	63.1	61.8	61.9	62.0	64.2	63.5	65.4	65.3	64.6	62.5	-2.1	
<b>Thirty-Day</b>																												
8th Grade																		14.3	15.5	16.7	18.6	19.1	21.0	19.4	19.1	17.5	14.6	-2.8sss
10th Grade																		20.8	21.5	24.7	25.4	27.9	30.4	29.8	27.6	25.7	23.9	-1.8
12th Grade	36.7	38.8	38.4	36.7	34.4	30.5	29.4	30.0	30.3	29.3	30.1	29.6	29.4	28.7	28.6	29.4	28.3	27.8	29.9	31.2	33.5	34.0	36.5	35.1	34.6	31.4	-3.2ss	
<b>Daily</b>																												
8th Grade																		7.2	7.0	8.3	8.8	9.3	10.4	9.0	8.8	8.1	7.4	-0.7
10th Grade																		12.6	12.3	14.2	14.6	16.3	18.3	18.0	15.8	15.9	14.0	-1.9s
12th Grade	26.9	28.8	28.8	27.5	25.4	21.3	20.3	21.1	21.2	18.7	19.5	18.7	18.7	18.1	18.9	19.1	18.5	17.2	19.0	19.4	21.6	22.2	24.6	22.4	23.1	20.6	-2.5s	
<b>1/2 pack+ per day</b>																												
8th Grade																		3.1	2.9	3.5	3.6	3.4	4.3	3.5	3.6	3.3	2.8	-0.5
10th Grade																		6.5	6.0	7.0	7.6	8.3	9.4	8.6	7.9	7.6	6.2	-1.4ss
12th Grade	17.9	19.2	19.4	18.8	16.5	14.3	13.5	14.2	13.8	12.3	12.5	11.4	11.4	10.6	11.2	11.3	10.7	10.0	10.9	11.2	12.4	13.0	14.3	12.6	13.2	11.3	-1.9ss	
<b>Approx. Ns</b> (in thousands)																												
8th Grade																		17.5	18.6	18.3	17.3	17.5	17.8	18.6	18.1	16.7	16.7	
10th Grade																		14.8	14.8	15.3	15.8	17.0	15.6	15.5	15.0	13.6	14.3	
12th Grade	9.4	15.4	17.1	17.8	15.5	15.9	17.5	17.7	16.3	15.9	16.0	15.2	16.3	16.3	16.7	15.2	15.0	15.8	16.3	15.4	15.4	14.3	15.4	15.2	13.6	12.8		

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001.  
Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.

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

**TABLE 2**

**Cigarettes: Trends in Thirty-Day Prevalence of Use by Subgroups for Eighth and Tenth Graders**

	Percent who used in last thirty days																					
	8th Grade											10th Grade										
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	'99-'00 change	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	'99-'00 change
Approx. N =	17500	18600	18300	17300	17500	17800	18600	18100	16700	16700	14800	14800	15300	15800	17000	15600	15500	15000	13600	14300		
Total	14.3	15.5	16.7	18.6	19.1	21.0	19.4	19.1	17.5	14.6	-2.8sss	20.8	21.5	24.7	25.4	27.9	30.4	29.8	27.6	25.7	23.9	-1.8
Sex:																						
Male	15.5	14.9	17.2	19.3	18.8	20.6	19.1	18.0	16.7	14.3	-2.4ss	20.8	20.6	24.6	26.6	27.7	30.1	28.2	26.2	25.2	23.8	-1.4
Female	13.1	15.9	16.3	17.9	19.0	21.1	19.5	19.8	17.7	14.7	-3.0ss	20.7	22.2	24.5	23.9	27.9	30.8	31.1	29.1	25.8	23.6	-2.2
College Plans:																						
None or under 4 yrs.	29.2	31.9	34.1	36.6	36.5	39.2	40.0	40.1	40.3	34.7	-5.7s	36.5	35.0	41.9	42.2	46.3	46.2	47.2	45.2	44.0	38.6	-5.5s
Complete 4 yrs.	11.8	13.1	14.3	16.1	16.8	18.2	16.9	16.5	14.5	12.2	-2.3ss	17.3	18.6	21.0	21.7	24.7	27.8	26.8	24.5	22.7	21.5	-1.2
Region:																						
Northeast	13.7	14.4	15.0	17.8	18.6	22.1	18.0	15.6	15.7	13.7	-2.0	22.4	21.9	27.1	24.5	27.8	31.7	29.3	30.1	28.0	23.9	-4.1
North Central	15.5	16.5	16.3	18.5	20.9	23.2	20.0	22.3	21.3	17.1	-4.2s	22.9	24.3	26.0	28.8	30.1	32.5	31.7	29.5	30.2	27.1	-3.1
South	15.7	17.0	18.2	19.5	19.4	21.1	21.0	21.1	18.7	14.7	-4.0ss	21.2	19.8	24.0	25.7	30.8	33.4	32.2	29.8	26.3	25.5	-0.8
West	10.0	12.2	16.4	18.0	16.5	17.1	17.1	15.1	12.1	12.2	+0.1	16.7	20.2	21.2	20.1	19.6	20.8	23.2	19.6	17.5	16.8	-0.7
Population Density:																						
Large MSA	12.8	15.0	14.1	15.5	16.5	19.4	15.8	16.4	12.7	12.1	-0.6	19.7	21.6	22.5	22.3	23.3	26.2	26.6	22.5	22.9	23.1	+0.2
Other MSA	14.9	15.3	17.8	20.7	19.4	21.4	19.7	17.7	16.0	13.1	-2.9ss	20.3	20.3	23.8	26.3	28.9	31.1	28.9	26.6	25.0	21.3	-3.7ss
Non-MSA	14.8	16.4	17.9	17.8	21.5	22.1	22.8	24.8	26.1	21.1	-5.0ss	22.7	23.7	28.2	26.7	31.3	33.9	34.9	35.7	30.4	29.4	-1.0
Parental Education: <sup>a</sup>																						
1.0-2.0 (Low)	26.2	24.1	23.3	26.1	25.3	26.5	26.9	26.7	26.6	22.0	-4.6	23.5	28.4	29.5	26.4	30.9	28.7	28.2	28.0	30.5	29.3	-1.2
2.5-3.0	16.4	16.9	19.8	20.6	22.7	24.4	22.4	23.9	23.5	19.6	-3.9ss	24.1	23.3	28.0	29.1	33.2	33.8	33.2	33.0	29.6	26.8	-2.8
3.5-4.0	13.9	14.9	17.4	20.1	20.8	21.4	20.9	21.4	17.0	14.7	-2.3	20.4	20.6	24.8	26.0	27.8	31.6	30.9	27.3	26.0	25.3	-0.7
4.5-5.0	10.1	13.3	12.5	14.9	14.9	18.4	16.2	14.2	12.3	10.2	-2.1s	18.5	19.5	20.1	22.6	25.9	28.7	28.5	25.7	22.4	21.2	-1.3
5.5-6.0 (High)	11.3	11.5	13.3	15.1	14.5	17.3	15.3	13.8	12.2	9.8	-2.5	18.5	18.9	21.4	20.7	21.8	27.8	24.6	22.5	21.4	19.1	-2.3
Race (2-year average): <sup>b</sup>																						
White	—	16.2	17.8	18.9	20.7	22.7	22.8	21.5	20.1	17.7	-2.4s	—	24.1	26.0	27.8	29.7	32.9	34.4	33.2	30.8	28.2	-2.6s
Black	—	5.3	6.6	8.7	8.9	9.6	10.9	10.6	10.7	9.6	-1.2	—	6.6	7.5	9.8	11.5	12.2	12.8	13.7	12.5	11.1	-1.4
Hispanic	—	16.7	18.3	21.3	21.6	19.6	19.1	20.1	20.5	16.6	-3.9	—	18.3	20.5	19.4	21.4	23.7	23.0	21.3	21.1	19.6	-1.5

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error. See Table D-58 for the number of subgroup cases. See Appendix B for definition of variables in table.

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

<sup>a</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

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

**TABLE 3**

**Cigarettes: Trends in Thirty-Day Prevalence of Use by Subgroups for Twelfth Graders**

	Percent who used in last thirty days																								'99-'00 change			
	Class of 1975	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990	Class of 1991	Class of 1992	Class of 1993	Class of 1994	Class of 1995	Class of 1996	Class of 1997	Class of 1998		Class of 1999	Class of 2000	
Approx. N =	9400	15400	17100	17800	15500	15900	17500	17700	16300	15900	16000	15200	16300	16300	16700	15200	15000	15800	16300	15400	15400	14300	15400	15200	13600	12800		
Total	36.7	38.8	38.4	36.7	34.4	30.5	29.4	30.0	30.3	29.3	30.1	29.6	29.4	28.7	28.6	29.4	28.3	27.8	29.9	31.2	33.5	34.0	36.5	35.1	34.6	31.4	-3.2ss	
Gender:																												
Male	37.2	37.7	36.6	34.5	31.2	26.8	26.5	26.8	28.0	25.9	28.2	27.9	27.0	28.0	27.7	29.1	29.0	29.2	30.7	32.9	34.5	34.9	37.3	36.3	35.4	32.8	-2.5	
Female	35.9	39.1	39.6	38.1	37.1	33.4	31.6	32.6	31.6	31.9	31.4	30.6	31.4	28.9	29.0	29.2	27.5	26.1	28.7	29.2	32.0	32.4	35.2	33.3	33.5	29.7	-3.8s	
College Plans:																												
None or < 4 yrs.	—	46.3	46.2	44.6	43.0	39.6	38.1	38.7	38.0	37.9	40.5	38.5	39.7	37.5	38.0	37.5	38.1	38.6	37.3	40.9	43.5	45.0	45.7	46.7	44.9	43.6	-1.3	
Complete 4 yrs.	—	29.8	29.4	27.4	26.0	22.3	22.3	22.1	23.3	22.7	22.8	24.0	24.3	24.4	24.1	25.4	24.2	23.8	27.3	28.0	29.9	30.8	33.1	31.3	31.4	27.3	-4.1sss	
Region:																												
Northeast	40.1	41.8	43.0	40.6	37.0	34.1	31.5	32.1	34.6	33.5	34.2	35.2	34.1	31.2	29.4	31.9	30.5	29.6	34.2	33.2	34.4	38.5	40.6	35.9	34.2	33.1	-1.1	
North Central	39.5	41.3	40.5	39.0	36.6	31.5	32.4	33.5	33.2	31.4	34.1	32.5	31.7	31.1	34.9	34.0	34.6	31.7	33.2	36.2	37.8	37.7	39.3	40.0	37.8	35.6	-2.2	
South	36.2	39.1	37.6	35.7	35.4	31.8	28.9	29.4	28.7	28.6	25.6	26.1	26.0	28.0	26.4	26.1	25.4	26.4	29.0	30.7	33.5	33.2	35.0	34.3	36.2	29.6	-6.7sss	
West	26.3	28.3	27.7	27.3	24.8	21.2	21.8	20.4	21.8	22.9	26.3	23.3	26.6	23.9	22.7	25.1	23.2	22.8	22.9	24.0	26.5	24.4	30.5	29.1	27.6	28.1	+0.5	
Population Density:																												
Large MSA	39.7	40.4	40.9	37.5	33.4	31.2	30.6	32.1	30.8	31.3	31.9	30.8	29.3	26.9	25.9	27.9	26.2	25.6	29.5	29.0	33.9	32.1	34.9	32.9	30.0	27.4	-2.6	
Other MSA	35.1	35.9	36.1	34.3	33.5	29.7	27.4	27.8	29.1	28.2	28.5	28.0	28.2	28.3	28.2	29.6	29.3	26.9	29.8	31.1	31.7	32.6	35.7	34.2	35.0	31.5	-3.6s	
Non-MSA	36.7	40.9	39.2	39.4	36.4	30.9	30.9	31.2	31.5	29.3	30.8	31.0	31.8	31.4	32.2	30.4	28.6	31.5	30.3	33.8	36.2	38.2	40.0	39.7	38.7	36.3	-2.5	
Parental Education: <sup>a</sup>																												
1.0-2.0 (Low)	37.2	43.2	39.6	38.1	38.1	32.7	32.5	32.6	32.7	33.6	32.3	28.6	28.8	28.1	25.4	26.3	31.3	27.1	26.5	26.2	31.2	31.5	31.2	32.3	33.0	31.3	-1.7	
2.5-3.0	37.0	41.2	40.8	39.3	35.9	34.2	31.7	32.0	32.2	31.8	32.3	31.4	29.9	30.8	30.8	28.7	30.3	30.4	32.8	35.0	35.5	36.5	36.0	37.3	32.2	-5.1ss		
3.5-4.0	31.9	35.3	37.3	34.0	33.3	28.0	28.2	29.0	28.0	28.1	29.7	29.7	28.8	27.8	29.4	29.3	28.4	27.8	29.9	31.4	33.2	33.2	35.6	36.7	35.0	32.8	-2.2	
4.5-5.0	32.3	35.0	33.0	32.6	30.1	25.7	26.0	25.5	27.8	25.2	27.7	26.4	27.6	28.6	27.0	29.1	26.9	25.8	30.1	32.0	32.6	34.5	37.5	34.2	32.4	30.2	-2.2	
5.5-6.0 (High)	26.8	30.8	32.8	31.9	29.6	24.0	22.5	25.1	25.5	23.7	22.6	26.7	29.3	27.8	26.3	28.6	27.1	25.5	30.5	30.4	34.0	32.9	38.5	33.1	34.4	27.4	-7.0ss	
Race (2-year average): <sup>b</sup>																												
White	—	—	38.3	37.6	36.0	33.0	30.5	30.7	31.3	31.2	31.3	31.9	32.1	32.2	32.2	32.3	32.2	31.8	33.2	35.2	36.6	38.1	40.7	41.7	40.1	37.9	-2.2	
Black	—	—	36.7	32.7	30.2	26.8	23.7	21.8	21.2	19.3	18.1	16.9	14.2	13.3	12.6	12.2	10.6	8.7	9.5	10.9	12.9	14.2	14.3	14.9	14.9	14.3	-0.6	
Hispanic	—	—	35.7	32.8	26.8	22.6	23.2	24.7	24.7	25.3	25.5	23.7	22.7	21.9	20.6	21.7	24.0	25.0	24.2	23.6	25.1	25.4	25.9	26.6	27.3	27.7	+0.4	

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error. See Table D-59 for the number of subgroup cases. See Appendix B for definition of variables in table.

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

<sup>a</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

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

**TABLE 4**  
**Trends in Availability and Attitudes about Smoking One or More Packs of Cigarettes per Day,  
for Eighth, Tenth, and Twelfth Graders**

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	'99-'00 change
<b>Perceived Risk<sup>a</sup></b>																											
8th Grade																	51.6	50.8	52.7	50.8	49.8	50.4	52.6	54.3	54.8	58.8	+4.0ss
10th Grade																	60.3	59.3	60.7	59.0	57.0	57.9	59.9	61.9	62.7	65.9	+3.3s
12th Grade	51.3	56.4	58.4	59.0	63.0	63.7	63.3	60.5	61.2	63.8	66.5	66.0	68.6	68.0	67.2	68.2	69.4	69.2	69.5	67.6	65.6	68.2	68.7	70.8	70.8	73.1	+2.3
<b>Disapproval<sup>b</sup></b>																											
8th Grade																	82.8	82.3	80.6	78.4	78.6	77.3	80.3	80.0	81.4	81.9	+0.5
10th Grade																	79.4	77.8	76.5	73.9	73.2	71.6	73.8	75.3	76.1	76.7	+0.6
12th Grade	67.5	65.9	66.4	67.0	70.3	70.8	69.9	69.4	70.8	73.0	72.3	75.4	74.3	73.1	72.4	72.8	71.4	73.5	70.6	69.8	68.2	67.2	67.1	68.8	69.5	70.1	+0.6
<b>Availability<sup>c,d</sup></b>																											
8th Grade																		77.8	75.5	76.1	76.4	76.9	76.0	73.6	71.5	68.7	-2.8sss
10th Grade																		89.1	89.4	90.3	90.7	91.3	89.6	88.1	88.3	86.8	-1.5s
12th Grade																											
<b>Approx. Ns:</b>																											
8th Grade																		17500	18600	18300	17300	17500	17800	18600	18100	16700	16700
10th Grade																		14800	14800	15300	15800	17000	15600	15500	15000	13600	14300
12th Grade	2800	2900	3100	3800	3300	3200	3600	3600	3300	3300	3300	3000	3300	3300	2800	2600	2500	2700	2800	2600	2600	2400	2600	2500	2300	2100	

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001.  
Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.  
SOURCE: The Monitoring the Future Study, The University of Michigan.

<sup>a</sup>The question text was: How much do you think people risk harming themselves (physically or in other ways) if they smoke one or more packs of cigarettes per day? Answer alternatives were: (1) No risk, (2) Slight risk, (3) Moderate risk, (4) Great risk, and (5) Can't say, drug unfamiliar. The percentage saying "great risk" is shown. For 8th and 10th graders: Beginning in 1999, perceived risk data based on two of four forms; N is two-thirds of N indicated.

<sup>b</sup>The question text was: Do you disapprove of people smoking one or more packs of cigarettes per day? For 12th graders, the question asked about people who are "18 or older." Answer alternatives were: (1) Don't disapprove, (2) Disapprove, and (3) Strongly disapprove. For 8th and 10th graders, there was another category—"Can't say, drug unfamiliar"—which was included in the calculation of these percentages. The percentage saying they "disapprove" or "strongly disapprove" is shown. For 8th and 10th graders: Beginning in 1999, disapproval data based on two of four forms; N is two-thirds of N indicated.

<sup>c</sup>The question text was: How difficult do you think it would be for you to get cigarettes, if you wanted some? Answer alternatives were: (1) Probably impossible, (2) Very difficult, (3) Fairly difficult, (4) Fairly easy, (5) Very easy, and (8) Can't say, drug unfamiliar (included in the calculation of these percentages). The percentage saying cigarettes are "fairly easy" or "very easy" to get is shown. In 1992 only, availability data based on one of two forms; N is one-half of N indicated. The question was not asked of the 12th graders.

<sup>d</sup>Data in 1992 based on one of two forms; N is one-half of N indicated.

**TABLE 5**

**Long-Term Trends in Prevalence of Use of Smokeless Tobacco for Eighth, Tenth, and Twelfth Graders**

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	'99-'00 change
<b>Lifetime</b>																											
8th Grade																	22.2	20.7	18.7	19.9	20.0	20.4	16.8	15.0	14.4	12.8	-1.6
10th Grade																	28.2	26.6	28.1	29.2	27.6	27.4	26.3	22.7	20.4	19.1	-1.3
12th Grade										31.4	32.2	30.4	29.2	—	—	—	32.4	31.0	30.7	30.9	29.8	25.3	26.2	23.4	23.1	-0.4	
<b>Thirty-Day</b>																											
8th Grade																	6.9	7.0	6.6	7.7	7.1	7.1	5.5	4.8	4.5	4.2	-0.3
10th Grade																	10.0	9.6	10.4	10.5	9.7	8.6	8.9	7.5	6.5	6.1	-0.5
12th Grade										11.5	11.3	10.3	8.4	—	—	—	11.4	10.7	11.1	12.2	9.8	9.7	8.8	8.4	7.6	-0.7	
<b>Daily</b>																											
8th Grade																	1.6	1.8	1.5	1.9	1.2	1.5	1.0	1.0	0.9	0.9	0.0
10th Grade																	3.3	3.0	3.3	3.0	2.7	2.2	2.2	2.2	1.5	1.9	+0.3
12th Grade										4.7	5.1	4.3	3.3	—	—	—	4.3	3.3	3.9	3.6	3.3	4.4	3.2	2.9	3.2	+0.3	
<b>Approx. Ns</b> (in thousands)																											
8th Grade																	17.5	18.6	18.3	17.3	17.5	17.8	18.6	18.1	16.7	16.7	
10th Grade																	14.8	14.8	15.3	15.8	17.0	15.6	15.5	15.0	13.6	14.3	
12th Grade										15.2	16.3	16.3	16.7	15.2	15.0	15.0	15.8	16.3	15.4	15.4	14.3	15.4	15.2	13.6	12.8		

NOTES: Level of significance of difference between the two most recent classes:  $s = .05$ ,  $ss = .01$ ,  $sss = .001$ . Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error. For 8th and 10th graders: data based on one of two forms for 1991-96 and on two of four forms beginning in 1997; N is one-half of N indicated. For 12th graders: data based on one form; N is one-fifth of N indicated in 1986-1988 and one-sixth of N indicated in 1989-2000. The prevalence of use of smokeless tobacco was not asked of twelfth graders in 1990 and 1991. Prior to 1990 the prevalence of use question on smokeless tobacco was located near the end of one twelfth-grade questionnaire form, whereas after 1991 the question was placed earlier and in a different form. This shift could explain the discontinuities between the corresponding data.

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

**TABLE 6**  
**Smokeless Tobacco: Trends in Thirty-Day Prevalence of Use by Subgroups for Eighth and Tenth Graders**

	Percent who used in last thirty days																					
	8th Grade											10th Grade										
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	'99-'00 change	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	'99-'00 change
	Approx. N = 17500 18600 18300 17300 17500 17800 18600 18100 16700 16700											14800 14800 15300 15800 17000 15600 15500 15000 13600 14300										
Total	6.9	7.0	6.6	7.7	7.1	7.1	5.5	4.8	4.5	4.2	-0.3	10.0	9.6	10.4	10.5	9.7	8.6	8.9	7.5	6.5	6.1	-0.5
Gender:																						
Male	12.7	12.5	10.9	12.8	11.8	11.4	9.9	8.1	6.9	6.7	-0.2	18.7	18.1	19.3	19.2	17.2	15.0	14.9	13.8	12.2	11.4	-0.8
Female	1.4	2.0	2.7	2.4	2.9	2.9	1.5	1.5	2.1	1.8	-0.3	1.3	1.8	2.0	2.1	2.1	2.3	2.7	1.7	1.3	1.3	0.0
College Plans:																						
None or under 4 yrs.	12.7	17.1	15.5	16.7	15.4	16.4	12.6	13.9	13.2	11.4	-1.8	16.9	17.5	20.2	19.9	20.3	16.3	18.5	17.8	13.2	13.9	+0.7
Complete 4 yrs.	6.1	5.5	5.3	6.5	6.0	5.6	4.6	3.8	3.5	3.4	-0.1	8.4	8.0	8.4	8.5	7.8	7.2	7.2	5.7	5.4	4.8	-0.7
Region:																						
Northeast	5.0	4.9	3.4	6.1	5.4	4.9	3.2	2.7	2.5	2.7	+0.2	8.6	5.3	8.0	9.0	7.6	6.8	9.3	6.5	5.2	4.6	-0.7
North Central	7.1	7.5	7.2	7.1	7.6	8.3	6.8	4.3	5.3	4.8	-0.5	11.0	9.6	10.0	10.0	11.0	9.5	7.1	7.9	8.1	6.2	-1.9
South	9.5	9.3	8.0	9.9	8.7	8.1	6.7	6.9	5.9	5.8	-0.1	11.6	11.4	11.8	11.7	10.9	10.2	10.2	9.5	7.9	7.7	-0.2
West	3.5	4.4	6.3	6.0	5.0	5.9	4.1	3.9	2.9	1.9	-1.0	7.8	10.9	11.1	10.9	7.7	6.0	8.2	4.6	4.0	4.5	+0.5
Population Density:																						
Large MSA	4.8	4.2	3.3	4.6	4.1	4.2	3.6	2.9	1.8	2.4	+0.6	5.9	6.4	6.5	6.2	5.9	5.5	4.2	3.7	4.6	5.6	+1.0
Other MSA	6.2	6.9	6.8	6.4	6.7	7.1	4.7	4.1	3.9	3.9	0.0	9.2	9.3	10.1	10.9	9.2	8.4	8.3	5.7	5.3	4.3	-1.0
Non-MSA	10.4	10.3	9.9	13.0	11.2	10.6	9.0	8.5	8.9	7.0	-1.9	14.7	13.3	14.1	13.9	15.0	12.2	14.7	15.1	11.3	9.8	-1.5
Parental Education: <sup>a</sup>																						
1.0-2.0 (Low)	11.4	7.8	9.4	8.9	10.6	6.3	8.3	5.4	6.6	7.4	+0.8	6.6	10.1	10.9	9.4	9.6	8.1	9.0	6.8	7.2	7.4	+0.2
2.5-3.0	8.4	8.5	7.5	8.4	9.9	8.8	6.0	5.1	5.7	5.2	-0.5	12.1	11.0	12.2	12.5	10.4	9.7	9.4	8.2	7.0	6.4	-0.6
3.5-4.0	6.7	7.0	7.5	8.7	7.0	7.2	6.5	5.9	4.5	4.5	0.0	10.6	10.5	10.9	10.2	10.9	8.3	10.3	8.6	7.3	6.3	-1.1
4.5-5.0	4.8	7.0	5.2	6.1	5.0	6.8	4.8	4.4	3.3	2.9	-0.5	9.3	7.6	9.9	9.8	9.8	8.5	7.2	6.9	6.1	6.2	+0.1
5.5-6.0 (High)	6.1	4.6	4.9	6.8	5.8	5.9	3.7	3.9	3.1	3.0	-0.1	8.6	8.1	7.0	8.9	6.0	7.7	8.3	5.2	4.8	4.0	-0.8
Race (2-year average): <sup>b</sup>																						
White	—	8.3	8.0	8.1	8.9	8.8	7.6	6.1	5.4	5.2	-0.2	—	11.4	12.0	12.5	12.0	11.0	10.4	10.0	8.7	7.5	-1.2
Black	—	1.8	2.7	3.2	2.6	2.2	2.6	2.3	2.3	2.7	+0.4	—	2.9	2.3	2.3	2.5	2.5	2.8	2.3	1.6	2.0	+0.4
Hispanic	—	4.2	4.0	5.0	5.7	5.2	4.6	4.5	4.6	3.7	-0.9	—	6.2	6.1	4.3	3.6	4.0	4.6	4.8	4.8	4.5	-0.3

NOTES: Level of significance of difference between the two most recent classes:  $s = .05$ ,  $ss = .01$ ,  $sss = .001$ . '—' indicates data not available. Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error. See Table D-58 for the number of subgroup cases. See Appendix B for definition of variables in table.

Data based on one of two forms in 1991–96 and on two of four forms beginning in 1997; N is one-half of N indicated.

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

<sup>a</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

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

**TABLE 7**  
**Smokeless Tobacco: Trends in Thirty-Day Prevalence of Use by Subgroups for Twelfth Graders**

	Percent who used in last thirty days																								'99-'00 change		
	Class of 1975	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	Class of 1989	Class of 1990 <sup>a</sup>	Class of 1991 <sup>a</sup>	Class of 1992	Class of 1993	Class of 1994	Class of 1995	Class of 1996	Class of 1997	Class of 1998		Class of 1999	Class of 2000
	Approx. N = 9400 15400 17100 17800 15500 15900 17500 17700 16300 15900 16000 15200 16300 16300 16700 15200 15000 15800 16300 15400 15400 14300 15400 15200 13600 12800																										
Total	—	—	—	—	—	—	—	—	—	—	—	11.5	11.3	10.3	8.4	—	—	11.4	10.7	11.1	12.2	9.8	9.7	8.8	8.4	7.6	-0.7
Gender:																											
Male	—	—	—	—	—	—	—	—	—	—	—	22.3	22.8	19.9	15.9	—	—	20.8	19.7	20.3	23.6	19.5	18.7	15.6	15.5	14.4	-1.2
Female	—	—	—	—	—	—	—	—	—	—	—	1.6	0.7	1.7	1.2	—	—	2.0	2.3	2.6	1.8	1.1	1.2	1.5	1.3	1.3	0.0
College Plans:																											
None or under 4 yrs.	—	—	—	—	—	—	—	—	—	—	—	14.5	15.5	13.1	9.6	—	—	18.0	14.9	15.8	18.7	17.6	16.9	14.3	10.5	15.8	+5.3
Complete 4 yrs.	—	—	—	—	—	—	—	—	—	—	—	9.8	9.0	8.8	7.7	—	—	9.4	9.4	9.3	9.9	7.6	7.4	7.1	7.6	5.4	-2.2
Region:																											
Northeast	—	—	—	—	—	—	—	—	—	—	—	9.5	7.3	5.9	5.0	—	—	8.2	9.6	12.0	9.6	8.4	6.9	2.6	4.3	5.3	+1.0
North Central	—	—	—	—	—	—	—	—	—	—	—	13.5	11.3	10.8	8.3	—	—	12.3	13.6	14.7	16.7	12.6	13.4	11.8	8.9	11.1	+2.1
South	—	—	—	—	—	—	—	—	—	—	—	12.2	13.7	12.1	9.8	—	—	12.5	11.1	9.7	11.9	9.2	9.0	10.5	10.7	7.3	-3.4
West	—	—	—	—	—	—	—	—	—	—	—	9.3	11.7	10.9	9.1	—	—	11.1	7.0	8.5	8.6	8.5	9.1	7.3	7.0	6.3	-0.7
Population Density:																											
Large MSA	—	—	—	—	—	—	—	—	—	—	—	9.0	6.4	7.7	6.8	—	—	5.9	7.1	7.5	12.5	8.6	6.5	4.7	4.9	4.2	-0.7
Other MSA	—	—	—	—	—	—	—	—	—	—	—	8.9	10.5	8.5	7.6	—	—	11.1	9.9	11.3	9.5	7.4	7.4	7.7	8.5	7.9	-0.6
Non-MSA	—	—	—	—	—	—	—	—	—	—	—	17.1	17.5	16.1	11.7	—	—	16.9	15.0	14.7	16.7	15.3	17.9	16.1	11.7	11.4	-0.3
Parental Education: <sup>b</sup>																											
1.0-2.0 (Low)	—	—	—	—	—	—	—	—	—	—	—	8.6	11.7	10.7	5.3	—	—	14.9	7.0	12.3	9.8	6.3	5.8	6.1	5.4	4.3	-1.1
2.5-3.0	—	—	—	—	—	—	—	—	—	—	—	14.4	11.5	10.7	7.0	—	—	12.4	11.6	12.9	11.5	10.4	10.7	9.0	9.1	9.9	+0.9
3.5-4.0	—	—	—	—	—	—	—	—	—	—	—	11.5	12.1	10.6	9.0	—	—	12.4	10.8	9.8	12.8	9.1	10.4	9.8	8.8	8.9	0.0
4.5-5.0	—	—	—	—	—	—	—	—	—	—	—	10.4	11.7	11.8	10.2	—	—	8.0	13.3	11.1	12.8	11.4	9.1	9.6	8.5	6.2	-2.3
5.5-6.0 (High)	—	—	—	—	—	—	—	—	—	—	—	7.7	8.1	7.2	8.4	—	—	10.6	7.8	10.2	11.6	8.1	9.9	7.4	7.9	5.7	-2.2
Race (2-year average): <sup>c</sup>																											
White	—	—	—	—	—	—	—	—	—	—	—	—	12.9	12.0	10.6	—	—	—	13.8	13.8	13.8	13.0	12.2	11.8	11.0	10.5	-0.5
Black	—	—	—	—	—	—	—	—	—	—	—	—	2.1	4.5	4.5	—	—	—	2.0	1.9	2.1	2.7	2.2	1.4	1.5	1.5	-0.1
Hispanic	—	—	—	—	—	—	—	—	—	—	—	—	4.4	5.2	5.1	—	—	—	6.0	5.4	7.6	8.1	5.3	4.3	3.9	3.8	-0.1

NOTES: Level of significance of difference between the two most recent classes:  $s = .05$ ,  $ss = .01$ ,  $sss = .001$ . '—' indicates data not available.  
Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.  
See Table D-59 for the number of subgroup cases.  
See Appendix B for definition of variables in table.  
Data based on one of six forms; N is one-sixth of N indicated in Table D-59.

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

**CAUTION: Limited sample sizes (see "Notes" above). Use caution in interpreting subgroup trends.**

<sup>a</sup>Prevalence of smokeless tobacco use was not asked of twelfth graders in 1990 and 1991. Prior to 1990 the prevalence of use question on smokeless tobacco was located near the end of one twelfth-grade questionnaire form, whereas after 1991 the question was placed earlier and in a different form. This shift could explain the discontinuities between the corresponding data.

<sup>b</sup>Parental education is an average score of mother's education and father's education. See Appendix B for details.

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

**TABLE 8**  
**Trends in Attitudes about Regular Smokeless Tobacco Use**  
**for Eighth, Tenth, and Twelfth Graders**

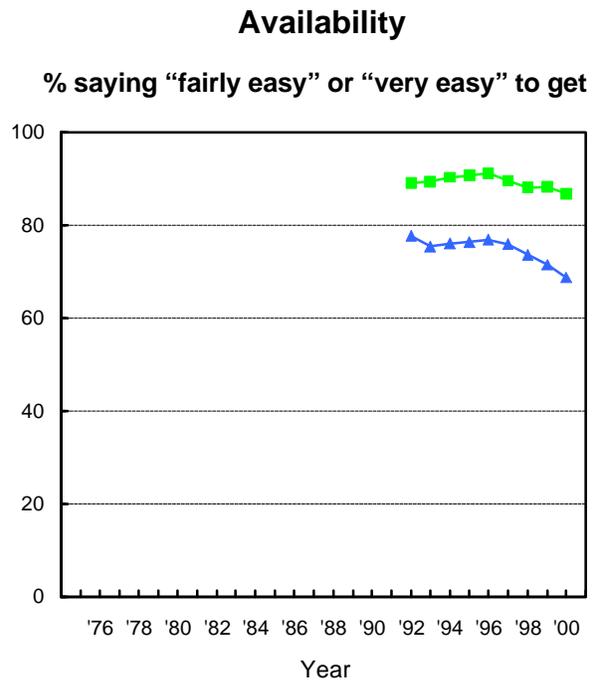
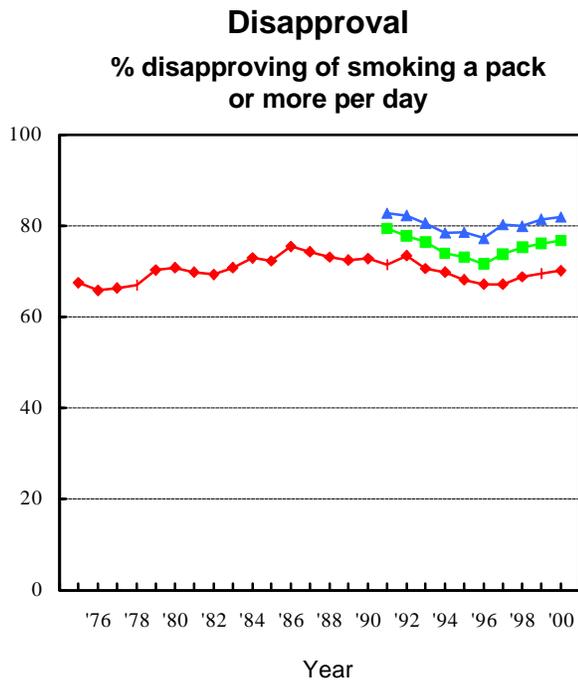
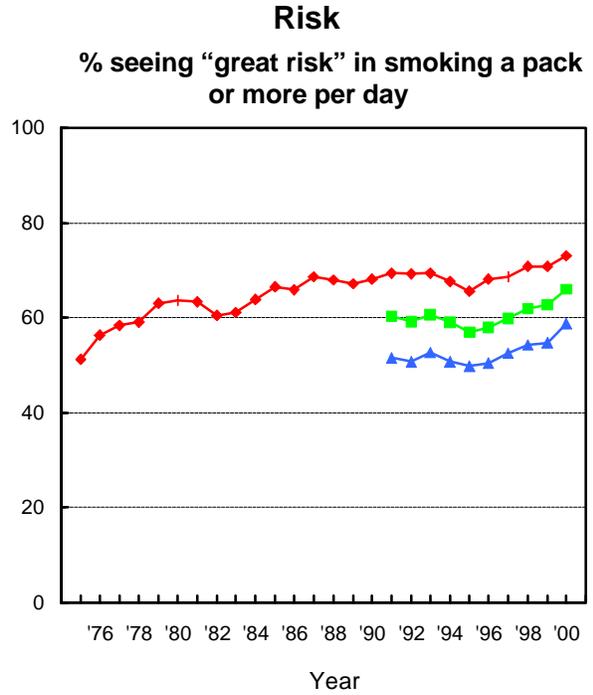
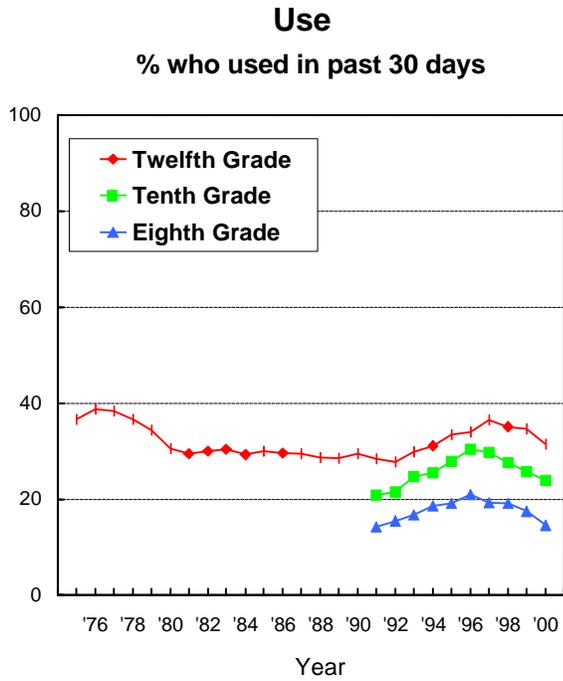
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	'99-'00 change		
<b>Perceived Risk<sup>a</sup></b>																													
8th Grade																		35.1	35.1	36.9	35.5	33.5	34.0	35.2	36.5	37.1	39.0	+1.9	
10th Grade																		40.3	39.6	44.2	42.2	38.2	41.0	42.2	42.8	44.2	46.7	+2.5s	
12th Grade											25.8	30.0	33.2	32.9	34.2			37.4	35.5	38.9	36.6	33.2	37.4	38.6	40.9	41.1	42.2	+1.1	
<b>Disapproval<sup>b</sup></b>																													
8th Grade																		79.1	77.2	77.1	75.1	74.0	74.1	76.5	76.3	78.0	79.2	+1.1	
10th Grade																		75.4	74.6	73.8	71.2	71.0	71.0	72.3	73.2	75.1	75.8	+0.7	
<b>Approx. Ns:</b>																													
8th Grade																			17500	18600	18300	17300	17500	17800	18600	18100	16700	16700	
10th Grade																			14800	14800	15300	15800	17000	15600	15500	15000	13600	14300	
12th Grade	2800	2900	3100	3800	3300	3200	3600	3600	3300	3300	3300	3000	3300	3300	2800	2600		2500	2700	2800	2600	2600	2400	2600	2500	2300	2100		

NOTES: Level of significance of difference between the two most recent classes:  $s = .05$ ,  $ss = .01$ ,  $sss = .001$ .  
Any apparent inconsistency between the change estimate and the prevalence of use estimates for the two most recent classes is due to rounding error.  
SOURCE: The Monitoring the Future Study, The University of Michigan.

<sup>a</sup>The question text was: How much do you think people risk harming themselves (physically or in other ways) if they use smokeless tobacco regularly? Answer alternatives were: (1) No risk, (2) Slight risk, (3) Moderate risk, (4) Great risk, and (5) Can't say, drug unfamiliar. The percentage saying "great risk" is shown. For 8th and 10th graders: Beginning in 1999, perceived risk data based on two of four forms; N is two-thirds of N indicated.

<sup>b</sup>The question text was: Do you disapprove of people using smokeless tobacco regularly? For 12th graders, the question asked about people who are "18 or older." Answer alternatives were: (1) Don't disapprove, (2) Disapprove, and (3) Strongly disapprove. For 8th and 10th graders, there was another category—"Can't say, drug unfamiliar"—which was included in the calculation of these percentages. The percentage saying they "disapprove" or "strongly disapprove" is shown. For 8th and 10th graders: Beginning in 1999, disapproval data based on two of four forms; N is two-thirds of N indicated. This question was not asked of 12th graders.

**FIGURE 1**  
**Cigarettes: Trends in 30-Day Use, Risk, Disapproval, and Availability**  
 Eighth, Tenth, and Twelfth Graders



**FIGURE 2**  
**Smokeless Tobacco: Trends in 30-Day Use, Risk, Disapproval,**  
**and Availability**  
 Eighth, Tenth, and Twelfth Graders

