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Vaping, hookah use by US teens declines for first time

ANN ARBOR—Teens are lighting up less often when it comes to e-cigarettes and hookahs.

A new study finds that the percentage of U.S. teens who vape declined in 2016—the first significant reversal of a rapid rise in adolescent vaping. The rate grew from near-zero levels of use in 2011 to one of the most common forms of adolescent substance use by 2015, researchers said.

From 2015 to 2016, the percentage of adolescents who vaped in the last 30 days declined from 16 percent to 13 percent among 12th-grade students, from 14 percent to 11 percent among 10th-grade students, and from 8 percent to 6 percent among 8th-grade students. Each of these declines was statistically significant.

These findings come from the University of Michigan's Monitoring the Future study, which tracks trends in substance use among students in 12th, 10th and 8th grades. Each year the national study, now in its 42nd year, surveys 40,000 to 50,000 students in about 400 public and private secondary schools throughout the United States.

The survey includes questions on the use of vaping devices, which are battery-powered devices with a heating element that produce an aerosol, or vapor, inhaled by users. The vapors come in thousands of flavors, including options such as bubble gum and milk chocolate cream, which are likely attractive to younger teens.

"Whether adolescent vaping has peaked or only paused is something we will be able to determine in the coming years," said Richard Miech, a senior investigator in the Monitoring the Future project. "In the past, we have seen new drugs follow a pattern in which use increases at a fast pace during a honeymoon period and then reverses course and declines as knowledge of the substance's drawbacks became known."

Adolescents associated slightly greater potential harm with vaping in 2016 than they did the previous year, although overall they don't see them as particularly dangerous to use.

E-cigarettes are the most common vaping device, and from 2015 to 2016, the percentage of adolescents who believe that regular e-cigarette use poses a risk of harm increased from 16 percent to 18 percent in 12th grade, from 17 percent to 19 percent in 10th grade, and from 19 percent to 21 percent in 8th grade.

One potential harm of vaping is that it may lead to use of regular cigarettes. Miech, who has written on the subject, notes that an increasing number of studies show that vaping predicts future cigarette smoking, even among adolescents who had little predisposition to smoke when they started vaping.

"Vaping may lead to friendship networks that encourage vapers to smoke," he said. "Also, vapers may come to believe the dangers of smoking are exaggerated if they do not experience any immediate health consequences from vaping."

Hookah use

Hookah use among U.S. 12th-grade students also declined in 2016, the first significant drop since the survey began tracking hookah use in 2010. From 2015 to 2016, use of a hookah in the past 12 months fell by more than one-third, from 20 percent to 13 percent among 12th-grade students (the survey tracks use only among 12th-grade students).

A hookah user breathes in through a mouthpiece attached to a rubber hose in order to inhale tobacco smoke that passes through water. The tobacco smoke inhaled by a hookah user is just as dangerous as cigarette smoke.

"Hookah use and vaping are two alternative cigarette products that rank among the most commonly used among U.S. youth," Miech said. "The decline in their use is important so that any reduction in cigarette smoking among U.S. teens is a real reduction in nicotine consumption, and not just a change from one form of nicotine use to another."

Cigarettes

Cigarette smoking among teens in grades 12, 10 and 8 continued a decades long decline in 2016 and reached the lowest levels recorded since annual tracking began 42 years ago. From 2015 to 2016, the percentage of youth who smoked in the past 30 days fell from 11.4 percent to 10.5 percent among 12th-grade students, from 6.3 percent to 4.9 percent among 10th-grade students, and from 3.6 percent to 2.6 percent among 8th-grade students. The one-year declines in 10th and 8th grade were statistically significant.

"Since the peak year in 1997, the proportion of students currently smoking has dropped by more than three quarters—an extremely important development for the health and longevity of this generation of Americans," said Lloyd Johnston, the principal investigator of the study.

Such a reduction can translate eventually into preventing hundreds of thousands of premature deaths as well as many serious diseases, he said. More than 400,000 Americans per year are estimated to die prematurely as a result of smoking cigarettes.

Concerted efforts to reduce youth smoking appear to be paying off. These have included increased taxes on tobacco products, restrictions on advertising and promotion, limiting where smoking is permitted, broad based anti-smoking ad campaigns, educational programs in schools, removal of added flavoring to cigarettes (except menthol), and quit smoking programs and products becoming more available. Increases in the price of cigarettes charged by manufacturers have also played an important role.

"While the improvements in the smoking numbers for just this one year are important, of course, the longer term declines are much more so," Johnston said. "Since teen smoking reached a peak around 1996-1997, the levels of past 30-day smoking have fallen by nearly 80 percent among 8th- and 10th-graders, and by more than 70 percent among 12th-graders. Further, the proportional declines in daily smoking are even larger."

One important cause of these declines in current smoking is that many fewer young people today have ever started to smoke. In 1996, 49 percent of 8th-graders said they had tried cigarettes, but by 2016 only 10 percent said they had done so—a drop of almost 80 percent in smoking initiation over the past two decades.

Illicit Drugs and Alcohol

Declines in almost all illicit drugs took place in 2016, including marijuana use among 8th- and 10th-grade students, synthetic marijuana and ecstasy. Alcohol use, including binge drinking, also declined. These findings, along with more results on these and other substances, are presented in a companion news release: myumi.ch/JYX4A

The findings summarized here will be published in January in a forthcoming volume. The statistical breakdown by states are not available.

[Tables and figures](#)
[Monitoring the Future](#)

TABLE 1
Trends in Annual and 30-Day Prevalence of Use of
Other Tobacco Products for Grades 8, 10, and 12

(Entries are percentages.)

	2009	2010	2011	2012	2013	2014	2015	2016	2015– 2016 change
ANNUAL PREVALENCE OF USE									
Tobacco using a Hookah^a									
8th Grade	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—
12th Grade	—	17.1	18.5	18.3	21.4	22.9	19.8	13.0	-6.9 sss
Small cigars^b									
8th Grade	—	—	—	—	—	—	—	—	—
10th Grade	—	—	—	—	—	—	—	—	—
12th Grade	—	23.1	19.5	19.9	20.4	18.9	15.9	15.6	-0.3
Dissolvable Tobacco Products^{b,c}									
8th Grade	—	—	—	1.0	1.1	1.1	0.9	0.7	-0.2
10th Grade	—	—	—	1.6	1.2	1.3	1.1	0.9	-0.2
12th Grade	—	—	1.5	1.6	1.9	1.1	1.4	1.1	-0.3
Snus^{b,c}									
8th Grade	—	—	—	2.4	2.0	2.2	1.9	2.2	+0.3
10th Grade	—	—	—	6.9	5.2	4.5	4.0	3.0	-1.0
12th Grade	—	—	7.9	7.9	7.7	5.8	5.8	5.8	+0.1
30-DAY PREVALENCE OF USE									
Electronic Vaporizers^{c,d}									
8th Grade	—	—	—	—	—	—	8.0	6.2	-1.8 s
10th Grade	—	—	—	—	—	—	14.2	11.0	-3.3 ss
12th Grade	—	—	—	—	—	—	16.3	12.5	-3.8 ss
Large Cigars^{d,e}									
8th Grade	—	—	—	—	—	1.9	2.4	1.5	-0.9 s
10th Grade	—	—	—	—	—	3.9	3.4	2.3	-1.1 s
12th Grade	—	—	—	—	—	6.4	7.0	6.5	-0.6
Flavored Little Cigars or Cigarillos^{d,e}									
8th Grade	—	—	—	—	—	4.1	4.1	2.8	-1.3 ss
10th Grade	—	—	—	—	—	6.9	6.1	4.9	-1.2
12th Grade	—	—	—	—	—	11.9	11.4	9.5	-1.9 s
Regular Little Cigars or Cigarillos^{d,e}									
8th Grade	—	—	—	—	—	2.5	3.3	1.9	-1.5 ss
10th Grade	—	—	—	—	—	4.4	3.8	3.0	-0.8
12th Grade	—	—	—	—	—	7.0	7.8	6.1	-1.7 s
Approximate Ns									
8th Grade	15,000	15,300	16,000	15,100	14,600	14,600	14,400	16,900	
10th Grade	15,900	15,200	14,900	15,000	12,900	13,000	15,600	14,700	
12th Grade	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	

Source. The Monitoring the Future study, the University of Michigan.

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 estimates for the two most recent years is due to rounding.

^aFor 12th grade only: Data based on one of six forms; N is one sixth of N indicated. Beginning in 2016 data based on three of six forms; N is three sixths of N indicated.

^bFor 12th grade only: Data based on one of six forms; N is one sixth of N indicated.

^cFor 8th and 10th graders only: Data based on one of four forms; N is one third of N indicated.

^dFor 12th grade only: Data based on two of six forms; N is two sixths of N indicated.

^eFor 8th and 10th graders only: Data based on two of four forms; N is one third of N indicated.

TABLE 2
Trends in Prevalence of Use of CIGARETTES in Grades 8, 10, and 12
 (Entries are percentages.)

	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	→ (Years cont.)
Lifetime																						
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	44.0	45.2	45.3	46.1	46.4	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	55.1	53.5	56.3	56.9	57.6	
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	
30-Day																						
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	14.3	15.5	16.7	18.6	19.1	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	20.8	21.5	24.7	25.4	27.9	
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	
Daily																						
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	7.2	7.0	8.3	8.8	9.3	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	12.6	12.3	14.2	14.6	16.3	
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	
1/2 Pack+ per Day																						
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.1	2.9	3.5	3.6	3.4	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.5	6.0	7.0	7.6	8.3	
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	
Approximate Ns																						
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	17,500	18,600	18,300	17,300	17,500	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	14,800	14,800	15,300	15,800	17,000	
12th Grade	9,400	15,400	17,100	17,800	15,500	15,900	17,500	17,700	16,300	15,900	16,000	15,200	16,300	16,300	16,700	15,200	15,000	15,800	16,300	15,400	15,400	

(Table continued on next page.)

TABLE 2 (cont.)
Trends in Prevalence of Use of CIGARETTES in Grades 8, 10, and 12
(Entries are percentages.)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2015– 2016 change	
Lifetime																							
8th Grade	49.2	47.3	45.7	44.1	40.5	36.6	31.4	28.4	27.9	25.9	24.6	22.1	20.5	20.1	20.0	18.4	15.5	14.8	13.5	13.3	9.8	-3.5	sss
10th Grade	61.2	60.2	57.7	57.6	55.1	52.8	47.4	43.0	40.7	38.9	36.1	34.6	31.7	32.7	33.0	30.4	27.7	25.7	22.6	19.9	17.5	-2.4	s
12th Grade	63.5	65.4	65.3	64.6	62.5	61.0	57.2	53.7	52.8	50.0	47.1	46.2	44.7	43.6	42.2	40.0	39.5	38.1	34.4	31.1	28.3	-2.8	s
30-Day																							
8th Grade	21.0	19.4	19.1	17.5	14.6	12.2	10.7	10.2	9.2	9.3	8.7	7.1	6.8	6.5	7.1	6.1	4.9	4.5	4.0	3.6	2.6	-1.0	ss
10th Grade	30.4	29.8	27.6	25.7	23.9	21.3	17.7	16.7	16.0	14.9	14.5	14.0	12.3	13.1	13.6	11.8	10.8	9.1	7.2	6.3	4.9	-1.5	ss
12th Grade	34.0	36.5	35.1	34.6	31.4	29.5	26.7	24.4	25.0	23.2	21.6	21.6	20.4	20.1	19.2	18.7	17.1	16.3	13.6	11.4	10.5	-0.9	
Daily																							
8th Grade	10.4	9.0	8.8	8.1	7.4	5.5	5.1	4.5	4.4	4.0	4.0	3.0	3.1	2.7	2.9	2.4	1.9	1.8	1.4	1.3	0.9	-0.4	s
10th Grade	18.3	18.0	15.8	15.9	14.0	12.2	10.1	8.9	8.3	7.5	7.6	7.2	5.9	6.3	6.6	5.5	5.0	4.4	3.2	3.0	1.9	-1.1	sss
12th Grade	22.2	24.6	22.4	23.1	20.6	19.0	16.9	15.8	15.6	13.6	12.2	12.3	11.4	11.2	10.7	10.3	9.3	8.5	6.7	5.5	4.8	-0.7	
1/2 Pack+ per Day																							
8th Grade	4.3	3.5	3.6	3.3	2.8	2.3	2.1	1.8	1.7	1.7	1.5	1.1	1.2	1.0	0.9	0.7	0.6	0.7	0.5	0.4	0.3	-0.1	
10th Grade	9.4	8.6	7.9	7.6	6.2	5.5	4.4	4.1	3.3	3.1	3.3	2.7	2.0	2.4	2.4	1.9	1.5	1.5	1.2	1.0	0.6	-0.4	s
12th Grade	13.0	14.3	12.6	13.2	11.3	10.3	9.1	8.4	8.0	6.9	5.9	5.7	5.4	5.0	4.7	4.3	4.0	3.4	2.6	2.1	1.8	-0.3	
Approximate Ns																							
8th Grade	17,800	18,600	18,100	16,700	16,700	16,200	15,100	16,500	17,000	16,800	16,500	16,100	15,700	15,000	15,300	16,000	15,100	14,600	14,600	14,400	16,900		
10th Grade	15,600	15,500	15,000	13,600	14,300	14,000	14,300	15,800	16,400	16,200	16,200	16,100	15,100	15,900	15,200	14,900	15,000	12,900	13,000	15,600	14,700		
12th Grade	14,300	15,400	15,200	13,600	12,800	12,800	12,900	14,600	14,600	14,700	14,200	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800		

Source. The Monitoring the Future study, the University of Michigan.

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 estimates for the two most recent years is due to rounding.

TABLE 3
Trends in Availability and Attitudes about Smoking 1 or More Packs
of Cigarettes per Day for Grades 8, 10, and 12

(Entries are percentages.)

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	→ (Years cont.)	
Perceived Risk ^a																							
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	51.6	50.8	52.7	50.8	49.8		
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	60.3	59.3	60.7	59.0	57.0		
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		
Disapproval ^b																							
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	82.8	82.3	80.6	78.4	78.6		
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	79.4	77.8	76.5	73.9	73.2		
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		
Availability ^c																							
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	77.8	75.5	76.1	76.4		
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	89.1	89.4	90.3	90.7		
Approximate Ns																							
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	17,500	18,600	18,300	17,300	17,500		
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	14,800	14,800	15,300	15,800	17,000		
12th Grade	2,800	2,900	3,100	3,800	3,300	3,200	3,600	3,600	3,300	3,300	3,300	3,000	3,300	3,300	2,800	2,600	2,600	2,700	2,800	2,600	2,600		

(Table continued on next page.)

TABLE 3 (cont.)
Trends in Availability and Attitudes about Smoking 1 or More Packs
of Cigarettes per Day for Grades 8, 10, and 12

(Entries are percentages.)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2015– 2016 change
Perceived Risk^a																						
8th Grade	50.4	52.6	54.3	54.8	58.8	57.1	57.5	57.7	62.4	61.5	59.4	61.1	59.8	59.1	60.9	62.5	62.6	62.4	62.1	63.0	61.2	-1.7
10th Grade	57.9	59.9	61.9	62.7	65.9	64.7	64.3	65.7	68.4	68.1	67.7	68.2	69.1	67.3	67.2	69.8	71.6	70.8	72.0	72.9	71.5	-1.4
12th Grade	68.2	68.7	70.8	70.8	73.1	73.3	74.2	72.1	74.0	76.5	77.6	77.3	74.0	74.9	75.0	77.7	78.2	78.2	78.0	75.9	76.5	+0.6
Disapproval^b																						
8th Grade	77.3	80.3	80.0	81.4	81.9	83.5	84.6	84.6	85.7	85.3	85.6	87.0	86.7	87.1	87.0	88.0	88.8	88.0	87.5	88.8	88.1	-0.7
10th Grade	71.6	73.8	75.3	76.1	76.7	78.2	80.6	81.4	82.7	84.3	83.2	84.7	85.2	84.5	83.9	85.8	86.0	86.1	88.0	88.3	88.5	+0.3
12th Grade	67.2	67.1	68.8	69.5	70.1	71.6	73.6	74.8	76.2	79.8	81.5	80.7	80.5	81.8	81.0	83.0	83.7	82.6	85.0	84.1	85.3	+1.3
Availability^c																						
8th Grade	76.9	76.0	73.6	71.5	68.7	67.7	64.3	63.1	60.3	59.1	58.0	55.6	57.4	55.3	55.5	51.9	50.7	49.9	47.2	47.0	45.6	-1.4
10th Grade	91.3	89.6	88.1	88.3	86.8	86.3	83.3	80.7	81.4	81.5	79.5	78.2	76.5	76.1	75.6	73.6	72.9	71.4	69.0	66.6	62.9	-3.6 ss
Approximate Ns																						
8th Grade	17,800	18,600	18,100	16,700	16,700	16,200	15,100	16,500	17,000	16,800	16,500	16,100	15,700	15,000	15,300	16,000	15,100	14,600	14,600	14,400	16,900	
10th Grade	15,600	15,500	15,000	13,600	14,300	14,000	14,300	15,800	16,400	16,200	16,200	16,100	15,100	15,900	15,200	14,900	15,000	12,900	13,000	15,600	14,700	
12th Grade	2,400	2,600	2,500	2,300	2,100	2,100	2,200	2,400	2,400	2,500	2,400	2,400	2,300	2,300	2,400	2,400	2,300	2,100	2,100	2,200	2,000	

Source. The Monitoring the Future study, the University of Michigan.

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 estimates for the two most recent years is due to rounding.

^aThe 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.

^bThe question text was: Do you disapprove of people smoking one or more packs of cigarettes per day? 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.

^cThe 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 12th graders.

TABLE 4
Trends in Various Attitudes toward Cigarette Use for Grades 8, 10, and 12

	Percentage who report mostly agree or agree																				2015– 2016 change						
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	
I would prefer to date people who don't smoke																											
8th Grade	77.8	76.0	75.2	74.1	73.6	70.9	72.3	74.5	76.9	77.2	79.4	80.6	79.6	81.0	81.2	81.2	82.8	82.6	81.3	81.5	81.7	83.7	80.9	80.2	81.7	80.6	-1.1
10th Grade	75.9	76.4	74.3	71.6	71.6	69.1	68.2	71.8	73.0	75.2	75.4	76.3	76.7	79.5	79.6	80.4	80.9	80.0	79.9	78.9	80.1	80.2	77.3	78.4	79.2	77.5	-1.6
12th Grade	74.0	72.3	70.4	69.0	66.0	66.0	63.9	66.0	64.4	70.0	68.5	72.3	71.8	72.0	74.8	76.7	76.6	75.2	74.9	73.3	74.7	77.5	75.4	73.7	73.1	74.2	+1.0
Smoking is a dirty habit																											
8th Grade	71.4	70.8	70.3	68.4	68.4	67.9	67.7	68.2	70.0	70.8	72.3	74.1	71.6	74.3	73.7	74.8	75.8	75.0	73.6	72.4	72.9	75.1	72.0	70.7	70.9	71.2	+0.3
10th Grade	70.7	71.0	69.2	67.5	68.0	66.6	65.8	68.3	68.7	70.8	70.3	71.2	70.5	71.7	72.0	73.7	72.7	72.0	72.1	71.7	71.4	71.3	69.5	69.1	70.8	67.8	-3.1
12th Grade	71.6	73.1	71.8	68.0	68.2	67.5	70.0	70.5	69.7	73.5	71.6	74.5	73.3	72.6	74.9	77.1	76.7	73.5	73.4	73.1	72.4	73.0	70.7	70.9	67.1	69.5	+2.4
I think that becoming a smoker reflects poor judgment																											
8th Grade	62.2	60.9	59.7	58.7	59.3	57.0	57.6	58.8	60.0	60.9	63.1	64.3	63.7	64.1	64.6	65.5	66.1	64.5	63.9	62.5	61.6	63.3	59.3	57.0	58.2	57.8	-0.4
10th Grade	57.5	59.0	57.3	54.2	53.7	52.9	50.1	53.9	54.7	56.5	55.4	59.3	56.8	58.8	59.4	61.5	60.3	60.6	59.6	59.1	57.4	57.2	54.8	52.3	54.1	51.3	-2.9
12th Grade	61.0	60.7	59.4	58.1	55.1	54.9	56.2	54.7	55.5	58.9	57.2	59.8	56.6	56.0	60.3	61.9	61.7	58.1	57.7	54.4	55.5	54.1	52.3	47.5	45.5	47.1	+1.6
I strongly dislike being near people who are smoking																											
8th Grade	53.8	52.1	52.9	51.1	49.7	45.7	46.6	48.5	48.7	50.1	52.2	54.0	54.4	57.0	55.7	55.4	56.8	57.9	55.9	55.2	56.9	59.0	58.6	57.4	58.3	58.2	-0.2
10th Grade	50.7	50.9	50.0	47.7	46.0	42.6	41.6	44.4	44.0	46.5	46.7	49.1	51.2	52.6	52.3	55.2	53.7	53.5	52.9	52.2	53.9	55.8	54.6	55.7	58.7	56.8	-1.9
12th Grade	48.9	49.4	48.6	47.4	44.2	42.3	38.3	41.0	39.3	41.3	43.3	47.4	47.6	46.5	47.8	49.7	50.2	47.9	48.7	49.1	49.5	52.4	50.7	53.2	51.1	53.4	+2.3
I personally don't mind being around people who are smoking																											
8th Grade	29.5	31.1	31.1	32.8	34.2	37.8	34.8	34.7	32.9	31.6	30.7	29.1	27.8	27.6	26.8	27.7	27.3	25.6	25.8	27.1	25.1	25.0	24.7	23.2	22.9	22.8	-0.1
10th Grade	33.1	35.0	35.1	36.8	38.5	42.8	41.1	39.7	38.8	38.1	35.5	34.7	32.2	30.0	30.4	30.8	30.4	29.2	30.4	30.3	28.6	28.9	28.9	26.9	24.3	23.8	-0.6
12th Grade	33.1	34.5	33.0	35.5	37.0	39.1	41.8	38.6	41.3	39.6	39.7	35.0	33.5	32.7	35.1	32.0	31.3	31.5	31.6	32.4	31.4	30.0	30.8	27.6	28.2	25.6	-2.6
The harmful effects of cigarettes have been exaggerated																											
8th Grade	19.9	21.8	22.4	24.4	23.1	25.3	22.4	23.8	22.7	21.6	21.4	22.0	20.5	22.1	20.4	21.1	20.8	20.9	21.2	22.3	20.5	21.4	21.2	20.8	19.6	19.2	-0.4
10th Grade	16.4	17.9	18.8	18.9	19.3	20.0	19.5	20.1	19.3	18.8	17.3	18.0	19.5	17.8	17.5	17.4	18.3	18.5	18.6	17.8	18.1	18.3	19.2	18.1	16.5	15.9	-0.5
12th Grade	13.8	13.0	13.6	14.9	14.4	12.8	14.0	13.4	14.5	16.8	15.8	12.7	13.1	13.1	13.1	14.1	14.2	14.5	15.0	12.8	13.8	14.4	14.0	12.8	11.9	13.0	+1.1
Smokers know how to enjoy life more than nonsmokers																											
8th Grade	4.9	5.0	5.4	6.3	5.9	6.7	5.4	5.8	6.1	5.4	5.5	5.2	5.3	5.9	5.4	5.7	5.1	5.2	5.6	6.7	5.6	5.8	6.0	6.5	5.6	6.1	+0.5
10th Grade	3.5	3.9	4.2	4.1	4.2	4.6	3.7	4.7	4.2	4.7	4.5	4.1	4.8	4.4	4.0	4.4	4.2	5.0	5.2	5.7	5.3	5.5	5.8	5.8	5.3	4.7	-0.6
12th Grade	3.6	3.3	3.5	3.8	4.0	3.5	3.2	3.8	4.3	3.7	5.5	4.1	3.5	3.5	3.4	3.8	3.2	4.2	3.9	8.1	7.7	3.9	5.7	5.1	5.8	5.5	-0.3

Source. The Monitoring the Future study, the University of Michigan.

Notes. For 8th graders: *N*s range from 6,249 to 8,005. For 10th graders: *N*s range from 6,135 to 7,807. For 12th graders: *N*s range from 1,795 to 3,112.

TABLE 5
CIGARETTES: Trends in 30-Day Prevalence of Use by Subgroups in Grade 8

	Percentage who used in last 30 days															
	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	
<i>Approximate weighted N =</i>	<i>17,500</i>	<i>18,600</i>	<i>18,300</i>	<i>17,300</i>	<i>17,500</i>	<i>17,800</i>	<i>18,600</i>	<i>18,100</i>	<i>16,700</i>	<i>16,700</i>	<i>16,200</i>	<i>15,100</i>	<i>16,500</i>	<i>17,000</i>	<i>16,800</i>	
Total	14.3	15.5	16.7	18.6	19.1	21.0	19.4	19.1	17.5	14.6	12.2	10.7	10.2	9.2	9.3	
Gender:																
Male	15.5	14.9	17.2	19.3	18.8	20.6	19.1	18.0	16.7	14.3	12.2	11.0	9.6	8.3	8.7	
Female	13.1	15.9	16.3	17.9	19.0	21.1	19.5	19.8	17.7	14.7	12.0	10.4	10.6	9.9	9.7	
College Plans:																
None or under 4 years	29.2	31.9	34.1	36.6	36.5	39.2	40.0	40.1	40.3	34.7	30.0	29.3	27.8	25.6	26.7	
Complete 4 years	11.8	13.1	14.3	16.1	16.8	18.2	16.9	16.5	14.5	12.2	10.0	8.9	8.3	7.4	7.4	
Region:																
Northeast	13.7	14.4	15.0	17.8	18.6	22.1	18.0	15.6	15.7	13.7	11.4	9.1	7.7	7.2	7.8	
Midwest	15.5	16.5	16.3	18.5	20.9	23.2	20.0	22.3	21.3	17.1	12.0	11.0	12.2	10.8	9.5	
South	15.7	17.0	18.2	19.5	19.4	21.1	21.0	21.1	18.7	14.7	14.3	13.0	11.7	10.3	11.6	
West	10.0	12.2	16.4	18.0	16.5	17.1	17.1	15.1	12.1	12.2	9.3	7.5	7.0	7.4	6.3	
Population Density:																
Large MSA	12.8	15.0	14.1	15.5	16.5	19.4	15.8	16.4	12.7	12.1	9.3	7.5	7.7	7.7	6.7	
Other MSA	14.9	15.3	17.8	20.7	19.4	21.4	19.7	17.7	16.0	13.1	11.6	10.6	9.8	8.9	9.8	
Non-MSA	14.8	16.4	17.9	17.8	21.5	22.1	22.8	24.8	26.1	21.1	16.9	14.9	14.4	11.6	11.8	
Parental Education: ^a																
1.0–2.0 (Low)	26.2	24.1	23.3	26.1	25.3	26.5	26.9	26.7	26.6	22.0	20.3	20.3	17.5	15.8	16.6	
2.5–3.0	16.4	16.9	19.8	20.6	22.7	24.4	22.4	23.9	23.5	19.6	16.4	14.5	14.8	12.2	13.4	
3.5–4.0	13.9	14.9	17.4	20.1	20.8	21.4	20.9	21.4	17.0	14.7	12.6	10.5	9.6	9.6	10.5	
4.5–5.0	10.1	13.3	12.5	14.9	14.9	18.4	16.2	14.2	12.3	10.2	8.3	7.8	6.7	6.7	5.9	
5.5–6.0 (High)	11.3	11.5	13.3	15.1	14.5	17.3	15.3	13.8	12.2	9.8	6.9	5.8	6.0	5.2	4.3	
Race/Ethnicity (2-year average): ^b																
White	—	16.2	17.8	18.9	20.7	22.7	22.8	21.5	20.1	17.7	14.7	12.0	10.9	10.0	9.4	
African American	—	5.3	6.6	8.7	8.9	9.6	10.9	10.6	10.7	9.6	8.2	7.7	6.9	6.9	7.1	
Hispanic	—	16.7	18.3	21.3	21.6	19.6	19.1	20.1	20.5	16.6	13.0	12.8	11.9	10.1	9.0	

Table continued on next page.

TABLE 5 (cont.)
CIGARETTES: Trends in 30-Day Prevalence of Use by Subgroups in Grade 8

	Percentage who used in last 30 days											2015-2016 change
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	
<i>Approximate weighted N =</i>	16,500	16,100	15,700	15,000	15,300	16,000	15,100	14,600	14,600	14,400	16,900	
Total	8.7	7.1	6.8	6.5	7.1	6.1	4.9	4.5	4.0	3.6	2.6	-1.0 ss
Gender:												
Male	8.1	7.5	6.7	6.7	7.4	6.2	4.6	4.0	3.5	3.3	2.5	-0.8
Female	8.9	6.4	6.7	6.0	6.8	5.7	4.9	4.7	4.2	3.7	2.6	-1.0 s
College Plans:												
None or under 4 years	23.2	23.9	21.1	19.5	22.8	18.2	17.3	15.0	13.1	11.7	9.9	-1.7
Complete 4 years	7.1	5.4	5.5	5.3	5.7	5.1	3.9	3.8	3.1	2.8	2.0	-0.9 ss
Region:												
Northeast	6.7	3.7	5.9	5.6	6.0	4.4	4.2	3.5	3.4	2.2	2.0	-0.1
Midwest	9.3	7.8	8.1	7.0	8.6	6.4	3.9	4.4	3.5	4.5	3.2	-1.3
South	10.9	8.6	7.7	7.7	8.5	6.8	6.9	5.8	4.6	4.0	3.0	-1.1 s
West	5.7	5.8	5.2	4.6	4.0	6.1	3.0	3.0	3.9	2.9	2.0	-0.9
Population Density:												
Large MSA	6.4	4.7	5.2	4.2	4.8	4.0	3.6	2.5	2.8	2.2	1.4	-0.8
Other MSA	8.8	7.6	7.5	6.9	7.6	7.0	5.1	4.3	3.7	3.5	2.3	-1.2 s
Non-MSA	11.6	9.5	7.9	8.5	9.2	7.7	6.9	8.0	6.6	5.9	5.6	-0.3
Parental Education: ^a												
1.0–2.0 (Low)	14.7	13.8	12.1	10.5	11.4	9.2	7.6	6.3	5.8	5.9	4.7	-1.3
2.5–3.0	12.5	10.2	8.7	8.8	10.2	9.8	7.4	6.5	6.2	4.6	3.6	-1.0
3.5–4.0	8.8	7.8	7.3	7.1	8.0	6.3	5.7	5.6	4.8	3.5	2.6	-0.9
4.5–5.0	5.5	3.9	4.7	4.4	4.9	3.9	3.0	2.4	2.6	2.5	2.0	-0.4
5.5–6.0 (High)	4.8	2.4	4.1	3.5	2.9	3.1	2.6	2.9	1.7	2.1	1.4	-0.7
Race/Ethnicity (2-year average): ^b												
White	9.3	8.1	7.2	7.3	7.6	7.2	5.8	4.7	4.4	4.2	3.4	-0.8 s
African American	6.0	5.1	4.6	4.4	4.3	4.1	4.0	3.5	2.6	2.2	2.1	-0.1
Hispanic	8.8	8.0	7.0	6.5	6.7	6.9	5.5	4.0	3.5	3.0	2.5	-0.5

Source. The Monitoring the Future study, the University of Michigan.

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 estimates for the two most recent years is due to rounding. See Table S1 for the number of subgroup cases. See appendix B for definition of variables in table.

^aParental education is an average score of mother's education and father's education. See appendix B for details.

^bTo 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. See appendix B for details on how race/ethnicity is defined.

TABLE 6
CIGARETTES: Trends in 30-Day Prevalence of Use by Subgroups in Grade 10

	Percentage who used in last 30 days														
	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>
<i>Approximate weighted N =</i>	14,800	14,800	15,300	15,800	17,000	15,600	15,500	15,000	13,600	14,300	14,000	14,300	15,800	16,400	16,200
Total	20.8	21.5	24.7	25.4	27.9	30.4	29.8	27.6	25.7	23.9	21.3	17.7	16.7	16.0	14.9
Gender:															
Male	20.8	20.6	24.6	26.6	27.7	30.1	28.2	26.2	25.2	23.8	20.9	16.7	16.2	16.2	14.5
Female	20.7	22.2	24.5	23.9	27.9	30.8	31.1	29.1	25.8	23.6	21.5	18.6	17.0	15.7	15.1
College Plans:															
None or under 4 years	36.5	35.0	41.9	42.2	46.3	46.2	47.2	45.2	44.0	38.6	38.1	33.3	33.0	33.1	29.4
Complete 4 years	17.3	18.6	21.0	21.7	24.7	27.8	26.8	24.5	22.7	21.5	18.5	15.1	14.0	13.6	12.9
Region:															
Northeast	22.4	21.9	27.1	24.5	27.8	31.7	29.3	30.1	28.0	23.9	18.1	15.9	16.6	16.6	14.9
Midwest	22.9	24.3	26.0	28.8	30.1	32.5	31.7	29.5	30.2	27.1	24.2	19.2	18.4	14.6	16.2
South	21.2	19.8	24.0	25.7	30.8	33.4	32.2	29.8	26.3	25.5	23.5	19.6	18.2	20.4	16.4
West	16.7	20.2	21.2	20.1	19.6	20.8	23.2	19.6	17.5	16.8	15.0	14.1	12.5	10.9	10.9
Population Density:															
Large MSA	19.7	21.6	22.5	22.3	23.3	26.2	26.6	22.5	22.9	23.1	17.3	14.2	13.1	12.0	11.7
Other MSA	20.3	20.3	23.8	26.3	28.9	31.1	28.9	26.6	25.0	21.3	20.5	17.6	16.6	16.6	14.7
Non-MSA	22.7	23.7	28.2	26.7	31.3	33.9	34.9	35.7	30.4	29.4	27.6	22.6	22.4	20.4	19.8
Parental Education: ^a															
1.0–2.0 (Low)	23.5	28.4	29.5	26.4	30.9	28.7	28.2	28.0	30.5	29.3	22.5	21.4	23.4	19.3	16.4
2.5–3.0	24.1	23.3	28.0	29.1	33.2	33.8	33.2	33.0	29.6	26.8	25.7	22.4	21.2	19.9	19.7
3.5–4.0	20.4	20.6	24.8	26.0	27.8	31.6	30.9	27.3	26.0	25.3	21.1	17.4	16.2	17.8	15.7
4.5–5.0	18.5	19.5	20.1	22.6	25.9	28.7	28.5	25.7	22.4	21.2	18.9	15.1	13.4	12.6	12.5
5.5–6.0 (High)	18.5	18.9	21.4	20.7	21.8	27.8	24.6	22.5	21.4	19.1	17.1	12.7	11.6	10.8	10.8
Race/Ethnicity (2-year average): ^b															
White	—	24.1	26.0	27.8	29.7	32.9	34.4	33.2	30.8	28.2	25.7	22.4	20.0	18.7	17.6
African American	—	6.6	7.5	9.8	11.5	12.2	12.8	13.7	12.5	11.1	11.1	9.8	8.9	9.2	8.7
Hispanic	—	18.3	20.5	19.4	21.4	23.7	23.0	21.3	21.1	19.6	16.8	14.3	13.2	13.9	13.5

Table continued on next page.

TABLE 6
CIGARETTES: Trends in 30-Day Prevalence of Use by Subgroups in Grade 10

	Percentage who used in last 30 days											2015-2016 <u>change</u>
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	
<i>Approximate weighted N =</i>	16,200	16,100	15,100	15,900	15,200	14,900	15,000	12,900	13,000	15,600	14,700	
Total	14.5	14.0	12.3	13.1	13.6	11.8	10.8	9.1	7.2	6.3	4.9	-1.5 ss
Gender:												
Male	13.4	14.6	12.7	13.7	15.0	13.4	12.0	10.5	7.7	6.1	5.0	-1.1
Female	15.5	13.3	11.9	12.5	12.1	10.0	9.6	7.5	6.6	6.3	4.4	-1.8 ss
College Plans:												
None or under 4 years	32.7	30.1	30.1	29.0	32.5	28.5	27.6	23.3	19.4	17.6	14.5	-3.1
Complete 4 years	12.1	11.8	10.0	11.3	11.3	9.9	9.0	7.4	5.8	5.1	3.8	-1.3 ss
Region:												
Northeast	11.8	13.1	10.1	11.1	12.1	12.2	10.9	7.2	6.7	6.1	4.4	-1.7
Midwest	18.1	17.1	14.5	12.9	14.5	11.8	9.7	9.3	8.0	7.0	4.7	-2.3 s
South	15.6	14.4	14.0	16.7	15.4	13.8	13.6	11.8	7.7	7.0	5.5	-1.6
West	10.9	11.1	9.6	10.1	11.1	8.5	7.6	6.9	5.8	4.7	4.5	-0.2
Population Density:												
Large MSA	11.5	12.1	10.3	11.4	11.1	9.5	8.4	5.8	5.9	4.9	4.4	-0.5
Other MSA	13.3	13.9	12.3	13.0	13.5	11.5	10.2	9.5	6.0	5.7	4.3	-1.4
Non-MSA	22.4	17.2	15.4	16.1	17.5	15.7	15.4	13.0	12.3	10.4	7.2	-3.2 s
Parental Education: ^a												
1.0–2.0 (Low)	20.4	17.5	15.7	18.2	18.8	14.6	15.4	12.8	9.7	9.3	5.5	-3.7 s
2.5–3.0	19.7	18.4	15.8	16.5	18.6	16.2	14.4	13.6	9.1	8.7	7.1	-1.6
3.5–4.0	15.5	14.7	13.9	13.8	15.1	12.7	11.2	10.2	8.4	7.8	5.3	-2.4 ss
4.5–5.0	10.8	11.3	9.6	10.9	10.0	8.6	9.6	6.0	5.2	5.0	3.5	-1.5 s
5.5–6.0 (High)	10.0	9.7	7.8	8.9	7.7	8.0	7.1	4.9	4.9	3.3	3.4	+0.1
Race/Ethnicity (2-year average): ^b												
White	16.6	16.2	15.1	14.4	14.7	14.3	12.9	11.4	9.5	7.8	6.8	-1.0 ss
African American	8.0	7.1	6.5	6.8	6.7	7.1	6.7	5.3	4.2	3.8	2.6	-1.2 s
Hispanic	12.1	10.5	11.1	12.1	12.2	10.5	8.3	8.3	6.8	5.3	4.0	-1.2 ss

Source. The Monitoring the Future study, the University of Michigan.

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 estimates for the two most recent years is due to rounding. See Table S2 for the number of subgroup cases. See appendix B for definition of variables in table.

^aParental education is an average score of mother's education and father's education. See appendix B for details.

^bTo 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. See appendix B for details on how race/ethnicity is defined.

TABLE 7
CIGARETTES: Trends in 30-Day Prevalence of Use by Subgroups in Grade 12

	Percentage who used in last 30 days															
	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>
<i>Approximate weighted N =</i>	9,400	15,400	17,100	17,800	15,500	15,900	17,500	17,700	16,300	15,900	16,000	15,200	16,300	16,300	16,700	15,200
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
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
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
College Plans:																
None or under 4 years	—	46.3	46.2	44.6	43.0	39.6	38.1	38.7	38.0	37.9	40.5	38.5	39.7	37.5	38.0	37.5
Complete 4 years	—	29.8	29.4	27.4	26.0	22.3	22.3	22.1	23.3	22.7	22.8	24.0	24.3	24.4	24.1	25.4
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
Midwest	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
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
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
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
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
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
Parental Education: ^a																
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
2.5–3.0	37.0	41.2	40.8	39.3	35.9	34.2	31.7	32.0	32.2	31.8	32.3	32.3	31.4	29.9	30.8	30.8
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
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
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
Race/Ethnicity (2-year average): ^b																
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
African American	—	—	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
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

Table continued on next page.

TABLE 7 (cont.)
CIGARETTES: Trends in 30-Day Prevalence of Use by Subgroups in Grade 12

	Percentage who used in last 30 days														
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
<i>Approximate weighted N =</i>	15,000	15,800	16,300	15,400	15,400	14,300	15,400	15,200	13,600	12,800	12,800	12,900	14,600	14,600	14,700
Total	28.3	27.8	29.9	31.2	33.5	34.0	36.5	35.1	34.6	31.4	29.5	26.7	24.4	25.0	23.2
Gender:															
Male	29.0	29.2	30.7	32.9	34.5	34.9	37.3	36.3	35.4	32.8	29.7	27.4	26.2	25.3	24.8
Female	27.5	26.1	28.7	29.2	32.0	32.4	35.2	33.3	33.5	29.7	28.7	25.5	22.1	24.1	20.7
College Plans:															
None or under 4 years	38.1	38.6	37.3	40.9	43.5	45.0	45.7	46.7	44.9	43.6	40.8	37.5	36.2	36.8	34.8
Complete 4 years	24.2	23.8	27.3	28.0	29.9	30.8	33.1	31.3	31.4	27.3	25.9	23.6	20.8	21.6	20.0
Region:															
Northeast	30.5	29.6	34.2	33.2	34.4	38.5	40.6	35.9	34.2	33.1	30.3	27.3	25.0	25.9	22.0
Midwest	34.6	31.7	33.2	36.2	37.8	37.7	39.3	40.0	37.8	35.6	35.9	31.7	27.3	28.3	26.8
South	25.4	26.4	29.0	30.7	33.5	33.2	35.0	34.3	36.2	29.6	25.9	27.2	24.3	24.6	24.6
West	23.2	22.8	22.9	24.0	26.5	24.4	30.5	29.1	27.6	28.1	25.2	19.4	20.7	20.1	17.5
Population Density:															
Large MSA	26.2	25.6	29.5	29.0	33.9	32.1	34.9	32.9	30.0	27.4	27.3	24.8	18.9	20.8	20.8
Other MSA	29.3	26.9	29.8	31.1	31.7	32.6	35.7	34.2	35.0	31.5	28.2	26.2	25.1	26.3	22.6
Non-MSA	28.6	31.5	30.3	33.8	36.2	38.2	40.0	39.7	38.7	36.3	34.3	30.1	30.4	27.6	27.4
Parental Education: ^a															
1.0–2.0 (Low)	31.3	27.1	26.5	26.2	31.2	31.5	31.2	32.3	33.0	31.3	24.8	20.9	23.5	21.0	19.1
2.5–3.0	28.7	30.3	30.4	32.8	35.0	35.5	36.5	36.0	37.3	32.2	31.5	28.9	27.0	28.7	27.3
3.5–4.0	28.4	27.8	29.9	31.4	33.2	33.2	35.6	36.7	35.0	32.8	30.3	28.6	24.3	26.3	24.8
4.5–5.0	26.9	25.8	30.1	32.0	32.6	34.5	37.5	34.2	32.4	30.2	29.3	25.0	22.6	23.8	21.8
5.5–6.0 (High)	27.1	25.5	30.5	30.4	34.0	32.9	38.5	33.1	34.4	27.4	25.0	25.3	21.0	19.9	18.0
Race/Ethnicity (2-year average): ^b															
White	32.2	31.8	33.2	35.2	36.6	38.1	40.7	41.7	40.1	37.9	35.3	32.5	29.4	28.2	27.6
African American	10.6	8.7	9.5	10.9	12.9	14.2	14.3	14.9	14.9	14.3	13.3	12.1	10.0	10.1	10.7
Hispanic	24.0	25.0	24.2	23.6	25.1	25.4	25.9	26.6	27.3	27.7	23.8	21.3	19.0	18.5	17.1

Table continued on next page.

TABLE 7 (cont.)
CIGARETTES: Trends in 30-Day Prevalence of Use by Subgroups in Grade 12

	Percentage who used in last 30 days											2015-2016 change
	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	
Approximate weighted N =	14,200	14,500	14,000	13,700	14,400	14,100	13,700	12,600	12,400	12,900	11,800	
Total	21.6	21.6	20.4	20.1	19.2	18.7	17.1	16.3	13.6	11.4	10.5	-0.9
Gender:												
Male	22.4	23.1	21.5	22.1	21.9	21.5	19.3	18.4	15.2	13.0	12.7	-0.3
Female	20.1	19.6	19.1	17.6	15.7	15.1	14.5	13.2	11.6	9.1	8.1	-1.1
College Plans:												
None or under 4 years	32.9	32.4	32.4	31.2	31.2	32.2	27.9	28.9	25.3	21.9	19.2	-2.6
Complete 4 years	18.6	19.0	17.6	17.3	16.3	15.6	14.7	13.0	10.8	8.9	8.4	-0.5
Region:												
Northeast	23.1	23.8	19.7	18.9	18.2	17.8	18.8	17.0	11.7	10.8	10.9	+0.1
Midwest	23.6	24.7	22.1	25.7	21.5	21.8	21.0	16.5	13.8	12.7	12.0	-0.7
South	23.2	21.9	22.4	20.0	20.5	18.4	15.6	18.6	15.4	12.5	10.8	-1.7
West	15.0	15.8	15.8	14.7	15.3	16.4	13.9	12.1	11.9	8.6	8.3	-0.3
Population Density:												
Large MSA	20.7	19.9	18.8	17.7	18.7	17.2	15.8	14.5	11.7	9.3	8.4	-0.9
Other MSA	20.3	20.8	19.5	19.1	17.9	18.1	15.6	15.5	12.9	10.5	9.9	-0.6
Non-MSA	25.3	25.9	24.3	25.5	23.1	22.3	23.1	20.9	17.8	17.0	15.1	-1.9
Parental Education: ^a												
1.0–2.0 (Low)	21.1	20.5	18.5	19.9	17.0	18.2	17.0	18.2	14.8	12.9	9.9	-3.0
2.5–3.0	24.7	24.7	22.4	23.2	21.6	22.4	19.0	18.2	16.1	13.9	12.0	-1.9
3.5–4.0	22.9	21.6	21.3	21.0	20.9	19.6	20.1	18.5	14.2	12.2	11.9	-0.3
4.5–5.0	19.2	20.5	18.6	18.0	17.5	15.9	15.7	14.1	12.0	9.7	9.1	-0.7
5.5–6.0 (High)	17.4	18.4	19.2	15.3	12.8	14.3	11.2	9.5	9.4	7.5	7.6	+0.1
Race/Ethnicity (2-year average): ^b												
White	25.9	24.9	24.7	23.9	22.9	22.2	21.2	19.4	17.5	15.0	13.2	-1.7 ss
African American	10.5	10.8	10.3	9.8	10.1	9.7	8.6	9.6	9.0	6.9	6.0	-0.9
Hispanic	16.0	15.3	15.0	15.7	15.0	14.3	13.2	12.4	11.4	9.6	8.2	-1.5 s

Source. The Monitoring the Future study, the University of Michigan.

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 estimates for the two most recent years is due to rounding. See Table S3 for the number of subgroup cases. See appendix B for definition of variables in table.

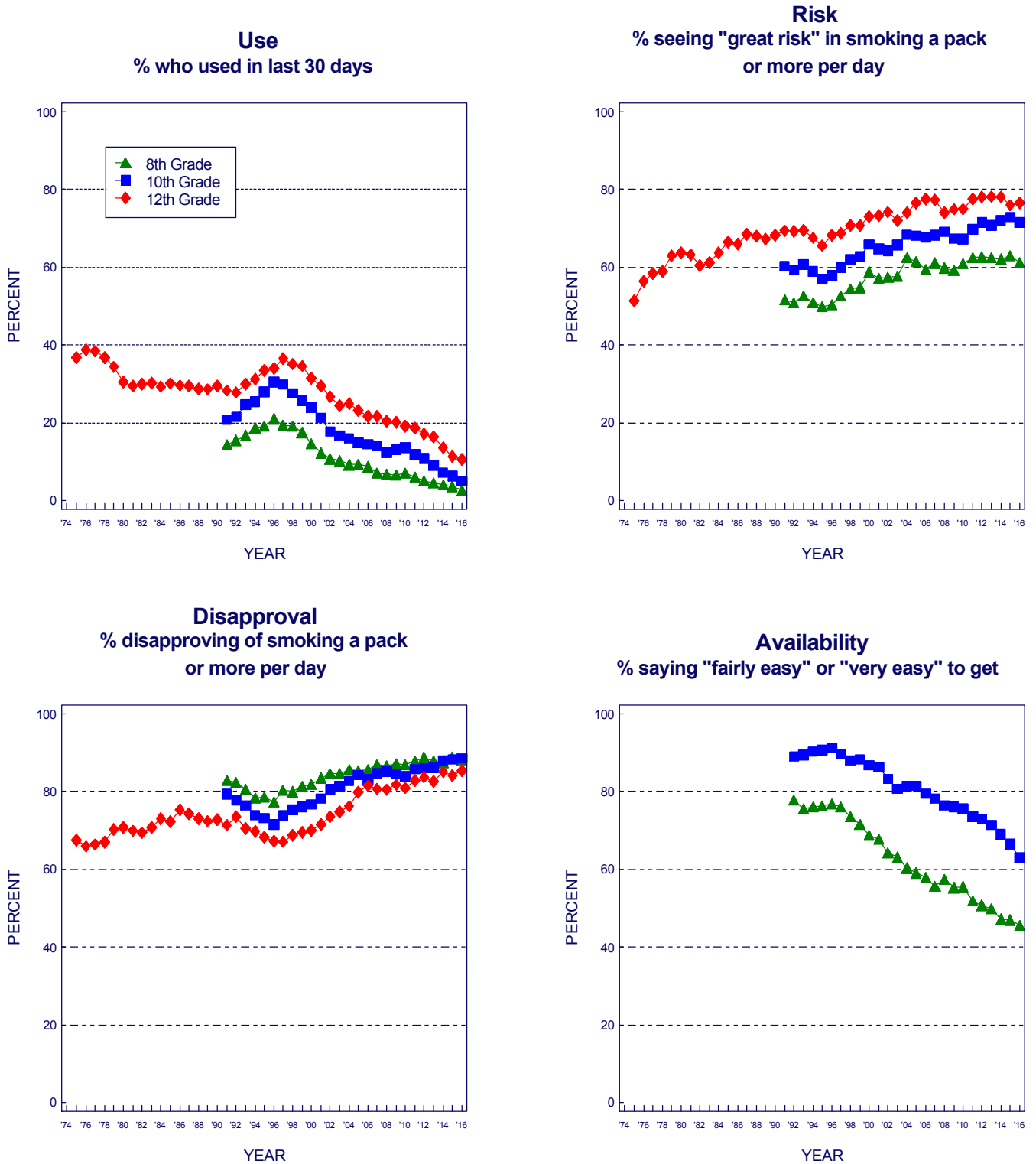
^aParental education is an average score of mother's education and father's education. See appendix B for details.

^bTo 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. See appendix B for details on how race/ethnicity is defined.

FIGURE 1

Cigarettes: Trends in 30-Day Use, Risk, Disapproval, and Availability

Grades 8, 10, and 12



Source. The Monitoring the Future study, the University of Michigan.