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Note: Video explaining the results is available at <http://youtu.be/9lpJO7j3k8U>

E-cigarettes surpass tobacco cigarettes among teens

ANN ARBOR—In 2014, more teens use e-cigarettes than traditional, tobacco cigarettes or any other tobacco product—the first time a U.S. national study shows that teen use of e-cigarettes surpasses use of tobacco cigarettes.

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

"As one of the newest smoking-type products in recent years, e-cigarettes have made rapid inroads into the lives of American adolescents," said Richard Miech, a senior investigator of the study.

The survey asked students whether they had used an e-cigarette or a tobacco cigarette in the past 30 days. More than twice as many 8th- and 10th-graders reported using e-cigarettes as reported using tobacco cigarettes.

Specifically, 9 percent of 8th-graders reported using an e-cigarette in the past 30 days, while only 4 percent reported using a tobacco cigarette. In 10th grade, 16 percent reported using an e-cigarette and 7 percent reported using a tobacco cigarette. Among 12th-graders, 17 percent reported e-cigarette use and 14 percent reported use of a tobacco cigarette.

The older teens report less difference in use of e-cigarettes versus tobacco cigarettes.

"This could be a result of e-cigarettes being relatively new," said Lloyd Johnston, principal investigator of the project. "So today's 12th-graders may not have had the opportunity to begin using them when they were younger. Future surveys should be able to tell us if that is the case."

E-cigarettes are battery-powered devices with a heating element. They produce an aerosol, or vapor, that users inhale. Typically, this vapor contains nicotine, although the specific contents of the vapor are proprietary and are not regulated. The liquid that is vaporized in e-cigarettes comes in hundreds of flavors. Some of these flavors, such as bubble gum and milk chocolate cream, are likely attractive to younger teens.

E-cigarettes may serve as a point of entry into the use of nicotine, an addictive drug. The percentages of all youth in each grade who used e-cigarettes in the prior 30 days, but had never smoked a cigarette in their lives, ranged from 4 percent to 7 percent in 8th, 10th, and 12th grades.

For these youth, e-cigarettes are a primary source of nicotine and not a supplement to tobacco cigarette use. Whether youth who use e-cigarettes exclusively later go on to become tobacco cigarette smokers is yet to be determined by this study, and is of substantial concern to the public health community.

E-cigarette use among youth offsets a long-term decline in the use of tobacco cigarettes, which is at a historic low in the life of the study—now in its 40th year. In 2014, the prevalence of smoking tobacco cigarettes in the past 30 days was 8 percent for students in 8th, 10th and 12th grades combined. This is a significant decline from 10 percent in 2013, and is less than a third of the most recent high of 28 percent in 1998.

One important cause of the decline in smoking is that many fewer young people today have ever started to smoke tobacco cigarettes. In 2014, only 23 percent of students had ever tried tobacco cigarettes, as compared to 56 percent in 1998. Of particular concern is the possibility that e-cigarettes may lead to tobacco cigarette smoking, and reverse this hard-won, long-term decline.

"Part of the reason for the popularity of e-cigarettes is the perception among teens that they do not harm health," Miech said.

Only 15 percent of 8th-graders think there is a great risk of people harming themselves with regular use of e-cigarettes. This compares to 62 percent of 8th-graders who think there is a great risk of people harming themselves by smoking one or more packs of tobacco cigarettes a day. Because e-cigarettes are relatively new, a comprehensive assessment of their health impact—especially their long-term consequences—has yet to be developed.

Tables and figures associated with this release may be accessed at: <http://monitoringthefuture.org/data/data.html>

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Monitoring the Future has been funded under a series of competing, investigator-initiated research grants from the National Institute on Drug Abuse, one of the National Institutes of Health. The lead investigators, in addition to Lloyd Johnston, are Patrick O'Malley, Jerald Bachman, John Schulenberg, and most recently Richard Miech—all research professors at the University of Michigan's Institute for Social Research.

Surveys of nationally representative samples of American high school seniors were begun in 1975, making the class of 2014 the 40th such class surveyed. Surveys of 8th- and 10th-graders were added to the design in 1991, making the 2014 nationally representative samples the 24th such classes surveyed. The 2014 samples total 41,551 students located in 377 secondary schools. The samples are drawn separately at each grade level to be representative of students in that grade in public and private secondary schools across the coterminous United States.

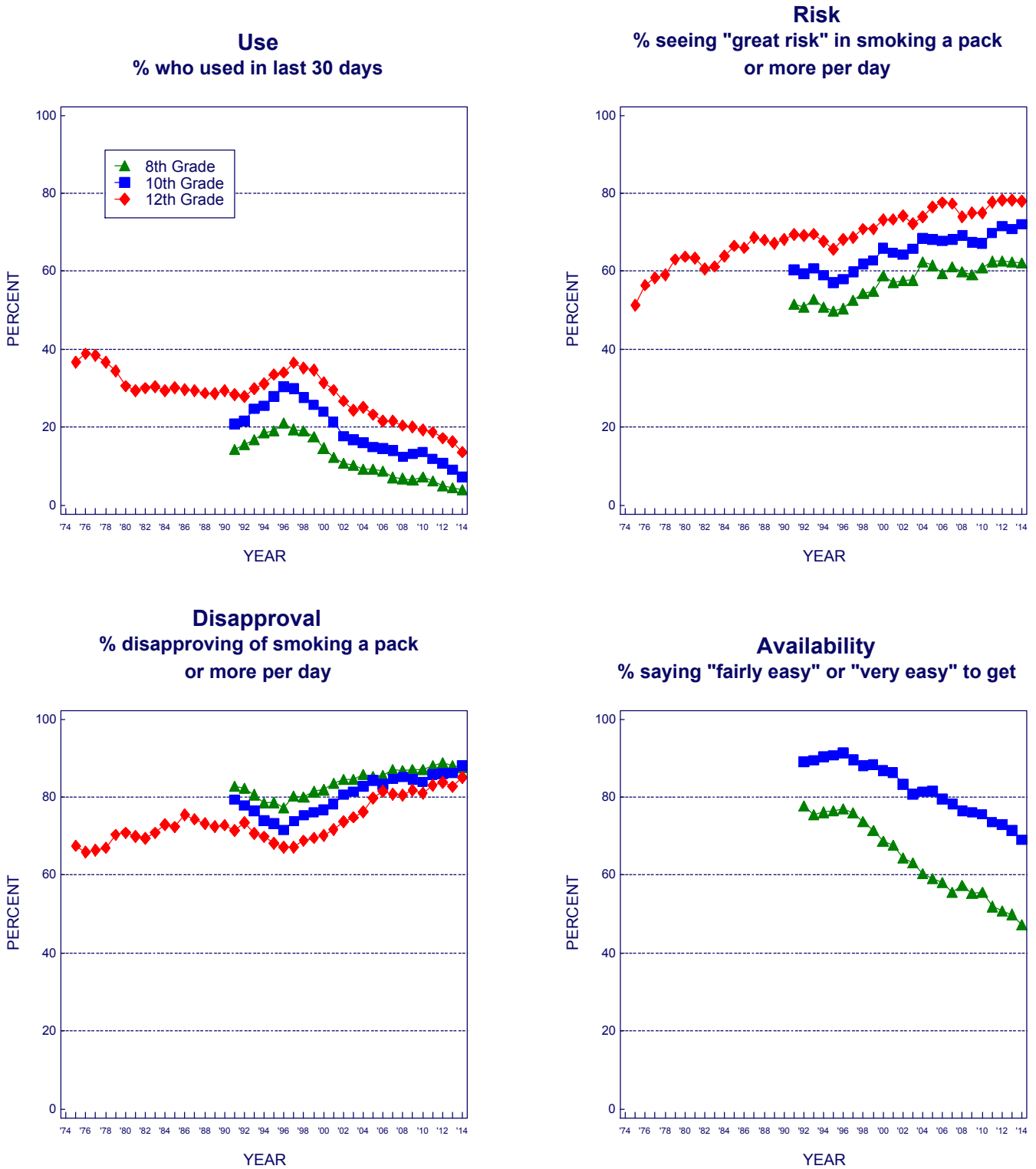
The findings summarized here will be published in January in a forthcoming volume: Johnston, L. D., O'Malley, P. M., Miech, R.A., Bachman, J. G., & Schulenberg, J. E. (2015). *Monitoring the Future national results on adolescent drug use: Overview of key findings, 2014*. Ann Arbor, Mich.: Institute for Social Research, the University of Michigan. The content presented here is solely the responsibility of the authors and does not necessarily represent the official views of the National Institute on Drug Abuse or the National Institutes of Health.

This year's findings on alcohol and illicit drug use are presented in a separate companion news release: <http://monitoringthefuture.org/press.html>

FIGURE 1

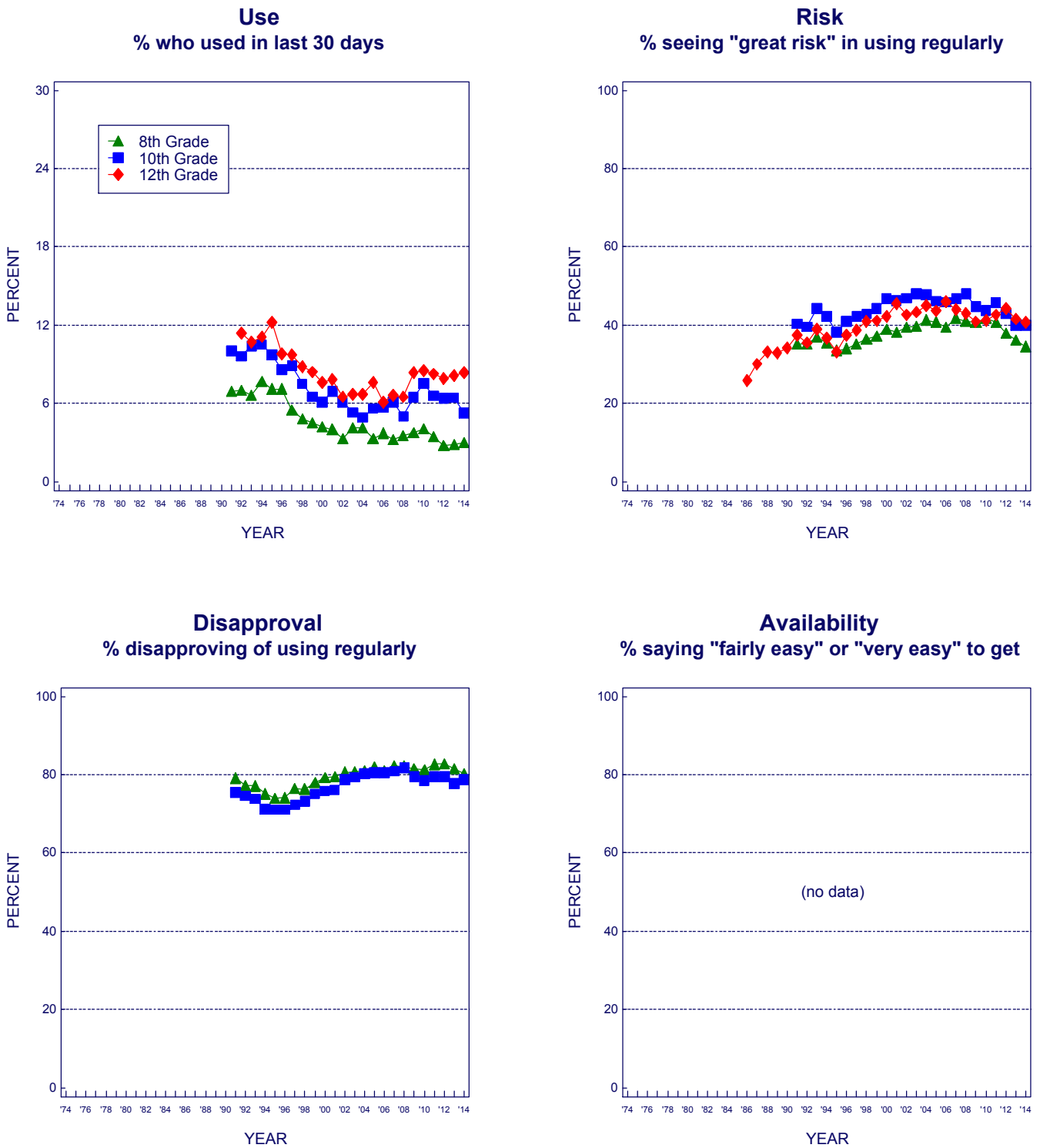
Cigarettes: Trends in 30-Day Use, Risk, Disapproval, and Availability

Grades 8, 10, and 12



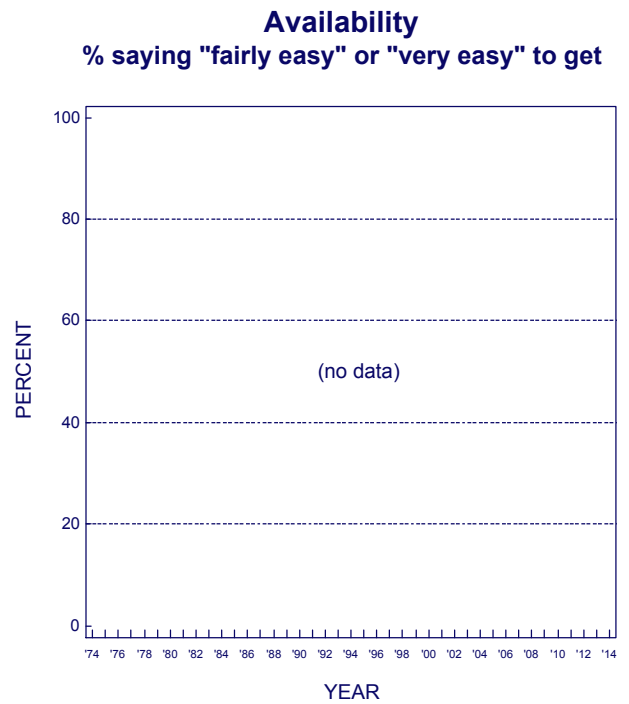
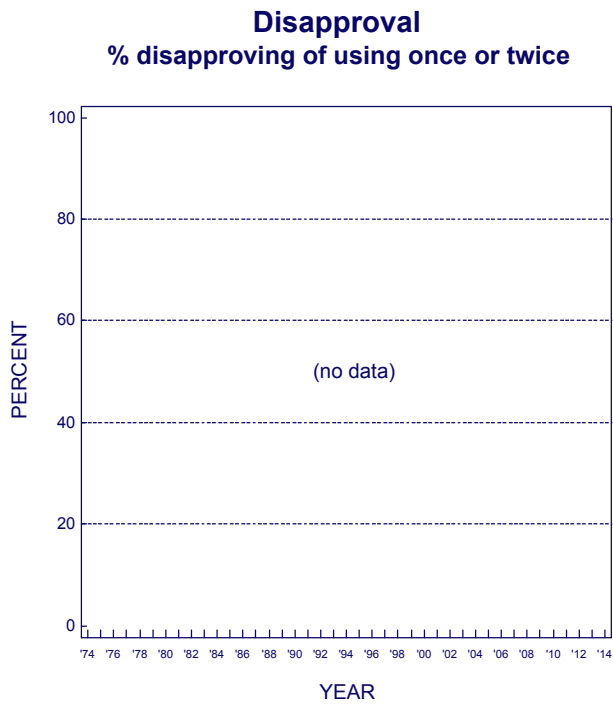
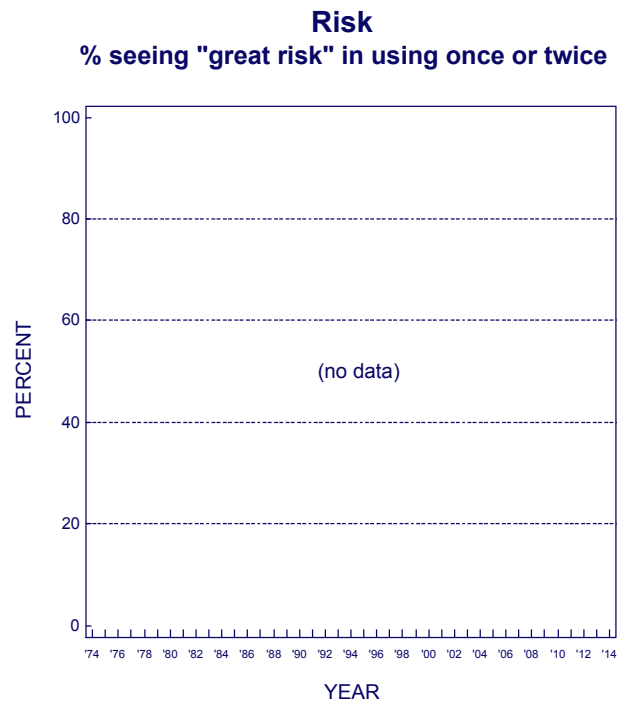
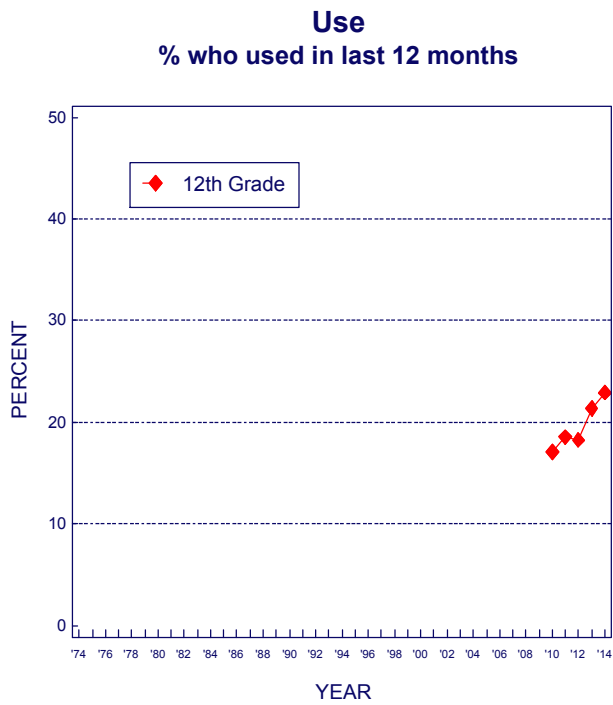
Source. The Monitoring the Future study, the University of Michigan.

FIGURE 2
Smokeless Tobacco: Trends in 30-Day Use, Risk, and Disapproval
 Grades 8, 10, and 12



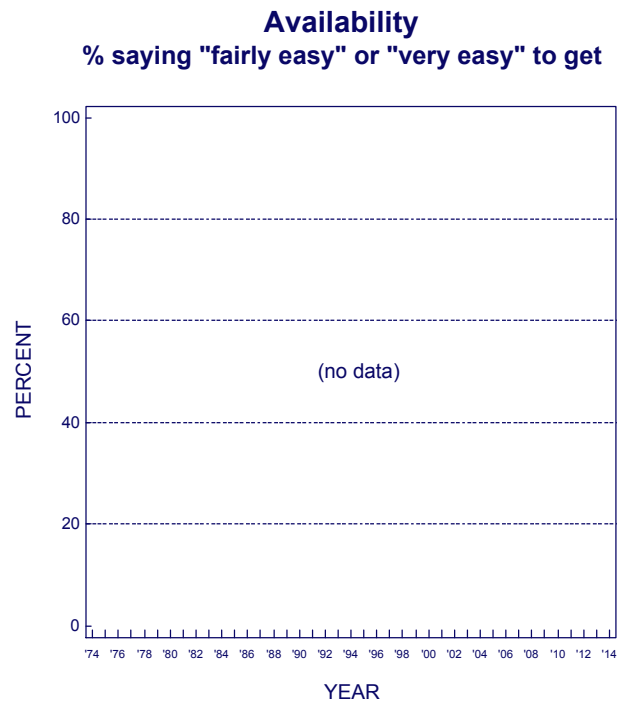
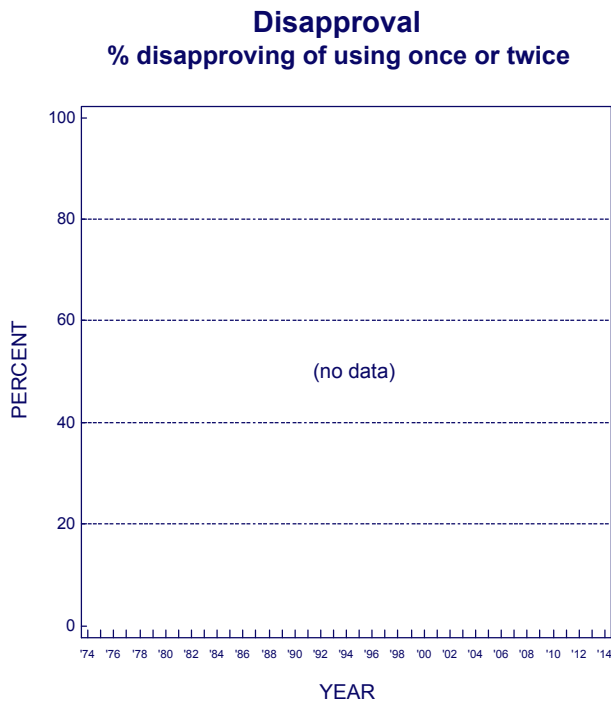
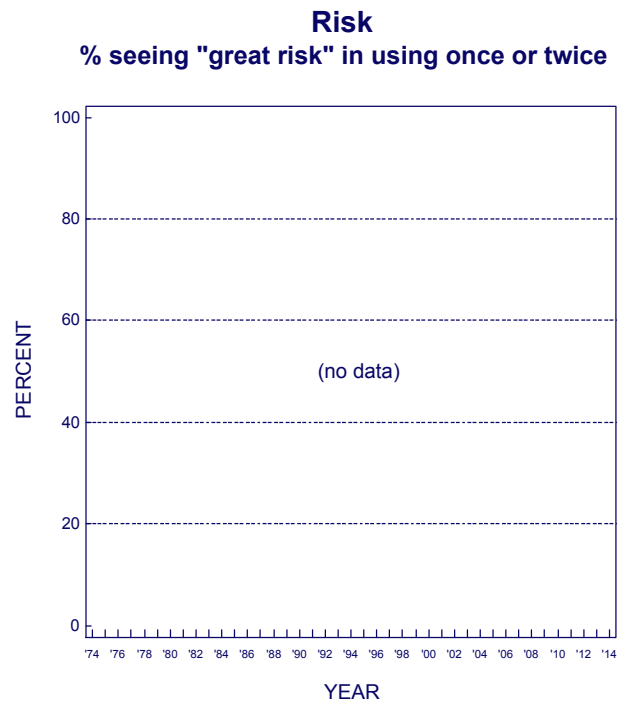
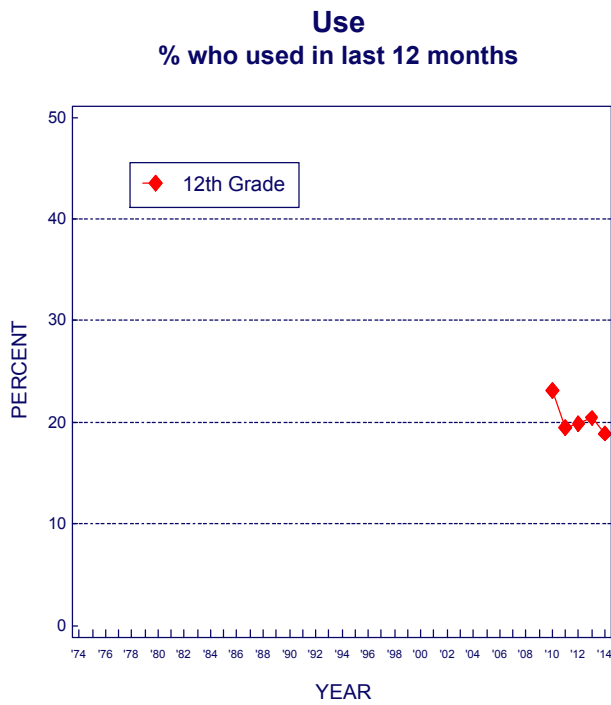
Source. The Monitoring the Future study, the University of Michigan.

FIGURE 3
Tobacco using a Hookah: Trends in Annual Use
 Grade 12



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

FIGURE 4
Small Cigars: Trends in Annual Use
 Grade 12



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

TABLE 1
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>	→ (Years cont.)
Lifetime																					
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	44.0	45.2	45.3	46.1	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	55.1	53.5	56.3	56.9	
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	
30-Day																					
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	14.3	15.5	16.7	18.6	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	20.8	21.5	24.7	25.4	
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	
Daily																					
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	7.2	7.0	8.3	8.8	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	12.6	12.3	14.2	14.6	
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	
1/2 Pack+ per Day																					
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.1	2.9	3.5	3.6	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.5	6.0	7.0	7.6	
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	
Approximate Ns																					
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	17,500	18,600	18,300	17,300	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	14,800	14,800	15,300	15,800	
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	

(Table continued on next page.)

TABLE 1 (cont.)
Trends in Prevalence of Use of CIGARETTES in Grades 8, 10, and 12
(Entries are percentages.)

	<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>	<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>2013– 2014 change</u>	
Lifetime																						
8th Grade	46.4	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	-1.3	
10th Grade	57.6	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	-3.1	ss
12th Grade	64.2	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	-3.7	ss
30-Day																						
8th Grade	19.1	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	-0.5	
10th Grade	27.9	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	-1.9	ss
12th Grade	33.5	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	-2.7	ss
Daily																						
8th Grade	9.3	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	-0.4	
10th Grade	16.3	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	-1.3	ss
12th Grade	21.6	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	-1.7	ss
1/2 Pack+ per Day																						
8th Grade	3.4	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	-0.2	
10th Grade	8.3	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	-0.3	
12th Grade	12.4	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	-0.8	s
Approximate Ns																						
8th Grade	17,500	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		
10th Grade	17,000	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		
12th Grade	15,400	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		

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 2
Trends in Availability and Attitudes about Smoking 1 or More Packs
of Cigarettes per Day for 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>	→ (Years cont.)
Perceived Risk ^a																					
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	51.6	50.8	52.7	50.8	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	60.3	59.3	60.7	59.0	
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	
Disapproval ^b																					
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	82.8	82.3	80.6	78.4	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	79.4	77.8	76.5	73.9	
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	
Availability ^c																					
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	77.8	75.5	76.1	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	89.1	89.4	90.3	
Approximate Ns																					
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	17,500	18,600	18,300	17,300	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	14,800	14,800	15,300	15,800	
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	

(Table continued on next page.)

TABLE 2 (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.)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2013– 2014 change
Perceived Risk^a																					
8th Grade	49.8	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	-0.3
10th Grade	57.0	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	+1.3
12th Grade	65.6	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	-0.2
Disapproval^b																					
8th Grade	78.6	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	-0.5
10th Grade	73.2	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	+1.9 s
12th Grade	68.2	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	+2.4
Availability^c																					
8th Grade	76.4	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	-2.6 ss
10th Grade	90.7	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	-2.4 ss
Approximate Ns																					
8th Grade	17,500	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	
10th Grade	17,000	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	
12th Grade	2,600	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	

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 3
Trends in Various Attitudes toward Cigarette Use for Grades 8, 10, and 12

Percentage who report mostly agree or agree

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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

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

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

TABLE 4
Trends in Prevalence of Use of SMOKELESS TOBACCO in 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	→ (Years cont.)
Lifetime																					
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	22.2	20.7	18.7	19.9	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	28.2	26.6	28.1	29.2	
12th Grade	—	—	—	—	—	—	—	—	—	—	—	31.4	32.2	30.4	29.2	—	—	32.4	31.0	30.7	
30-Day																					
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.9	7.0	6.6	7.7	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	10.0	9.6	10.4	10.5	
12th Grade	—	—	—	—	—	—	—	—	—	—	—	11.5	11.3	10.3	8.4	—	—	11.4	10.7	11.1	
Daily																					
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.6	1.8	1.5	1.9	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.3	3.0	3.3	3.0	
12th Grade	—	—	—	—	—	—	—	—	—	—	—	4.7	5.1	4.3	3.3	—	—	4.3	3.3	3.9	
Approximate Ns																					
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	17,500	18,600	18,300	17,300	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	14,800	14,800	15,300	15,800	
12th Grade	—	—	—	—	—	—	—	—	—	—	—	15,200	16,300	16,300	16,700	—	15,000	15,800	16,300	15,400	

(Table continued on next page.)

TABLE 4 (cont.)
Trends in Prevalence of Use of SMOKELESS TOBACCO in Grades 8, 10, and 12

(Entries are percentages.)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2013– 2014 change
Lifetime																					
8th Grade	20.0	20.4	16.8	15.0	14.4	12.8	11.7	11.2	11.3	11.0	10.1	10.2	9.1	9.8	9.6	9.9	9.7	8.1	7.9	8.0	+0.1
10th Grade	27.6	27.4	26.3	22.7	20.4	19.1	19.5	16.9	14.6	13.8	14.5	15.0	15.1	12.2	15.2	16.8	15.6	15.4	14.0	13.6	-0.4
12th Grade	30.9	29.8	25.3	26.2	23.4	23.1	19.7	18.3	17.0	16.7	17.5	15.2	15.1	15.6	16.3	17.6	16.9	17.4	17.2	15.1	-2.1
30-Day																					
8th Grade	7.1	7.1	5.5	4.8	4.5	4.2	4.0	3.3	4.1	4.1	3.3	3.7	3.2	3.5	3.7	4.1	3.5	2.8	2.8	3.0	+0.1
10th Grade	9.7	8.6	8.9	7.5	6.5	6.1	6.9	6.1	5.3	4.9	5.6	5.7	6.1	5.0	6.5	7.5	6.6	6.4	6.4	5.3	-1.2
12th Grade	12.2	9.8	9.7	8.8	8.4	7.6	7.8	6.5	6.7	6.7	7.6	6.1	6.6	6.5	8.4	8.5	8.3	7.9	8.1	8.4	+0.3
Daily																					
8th Grade	1.2	1.5	1.0	1.0	0.9	0.9	1.2	0.8	0.8	1.0	0.7	0.7	0.8	0.8	0.8	0.9	0.8	0.5	0.5	0.5	0.0
10th Grade	2.7	2.2	2.2	2.2	1.5	1.9	2.2	1.7	1.8	1.6	1.9	1.7	1.6	1.4	1.9	2.5	1.7	2.0	1.9	1.8	0.0
12th Grade	3.6	3.3	4.4	3.2	2.9	3.2	2.8	2.0	2.2	2.8	2.5	2.2	2.8	2.7	2.9	3.1	3.1	3.2	3.0	3.4	+0.4
Approximate Ns																					
8th Grade	17,500	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	
10th Grade	17,000	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	
12th Grade	15,400	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	

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. For 8th and 10th graders: Data based on one of two forms for 1991–1996 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 beginning in 1989. The prevalence of use of smokeless tobacco was not asked of 12th graders in 1990 and 1991. Prior to 1990 the prevalence-of-use question on smokeless tobacco was located near the end of one 12th-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. For all grades: In 2011 snus and dissolvable tobacco were added to the list of examples. An examination of the data did not show any effect from the wording change.

TABLE 5
Trends in Attitudes about Regular Smokeless Tobacco Use 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	→ (Years cont.)
Perceived Risk ^a																					
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	35.1	35.1	36.9	35.5	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	40.3	39.6	44.2	42.2	
12th Grade	—	—	—	—	—	—	—	—	—	—	—	25.8	30.0	33.2	32.9	34.2	37.4	35.5	38.9	36.6	
Disapproval ^b																					
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	79.1	77.2	77.1	75.1	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	75.4	74.6	73.8	71.2	
Approximate Ns																					
8th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	17,500	18,600	18,300	17,300	
10th Grade	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	14,800	14,800	15,300	15,800	
12th Grade	—	—	—	—	—	—	—	—	—	—	—	3,000	3,300	3,300	2,800	2,600	2,600	2,700	2,800	2,600	

(Table continued on next page.)

TABLE 5 (cont.)
Trends in Attitudes about Regular Smokeless Tobacco Use for Grades 8, 10, and 12

(Entries are percentages.)

	<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>	<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>2013– 2014 change</u>
Perceived Risk ^a																					
8th Grade	33.5	34.0	35.2	36.5	37.1	39.0	38.2	39.4	39.7	41.3	40.8	39.5	41.8	41.0	40.8	41.8	40.8	37.8	36.2	34.5	-1.7
10th Grade	38.2	41.0	42.2	42.8	44.2	46.7	46.2	46.9	48.0	47.8	46.1	45.9	46.7	48.0	44.7	43.7	45.7	42.9	40.0	39.9	-0.1
12th Grade	33.2	37.4	38.6	40.9	41.1	42.2	45.4	42.6	43.3	45.0	43.6	45.9	44.0	42.9	40.8	41.2	42.6	44.3	41.6	40.7	-0.9
Disapproval ^b																					
8th Grade	74.0	74.1	76.5	76.3	78.0	79.2	79.4	80.6	80.7	81.0	82.0	81.0	82.3	82.1	81.5	81.2	82.6	82.7	81.5	80.2	-1.3
10th Grade	71.0	71.0	72.3	73.2	75.1	75.8	76.1	78.7	79.4	80.2	80.5	80.5	80.9	81.8	79.5	78.5	79.5	79.5	77.7	78.7	+1.0
Approximate Ns																					
8th Grade	17,500	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	
10th Grade	17,000	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	
12th Grade	2,600	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	

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 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.

^bThe question text was: Do you disapprove of people using smokeless tobacco regularly? 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. For 8th and 10th graders only: Data based on two of four forms beginning in 2012; N is two thirds of N indicated. The percentage saying they disapprove or strongly disapprove is shown. This question was not asked of 12th graders.