

# **Daily Cigarette Use**

# **INDICATORS ON CHILDREN AND YOUTH**

**Updated: December 2015** 



The prevalence of daily cigarette use among youth declined dramatically in the 2000s; among twelfth-graders it decreased to nearly a quarter of what it had been, from 25 percent in 1997 to 7 percent in 2014. However, in recent years, youth's use of electronic cigarettes has risen dramatically, and now surpasses their use of any other form of tobacco.

# **Importance**

Cigarette smoking, which usually starts in adolescence, is the leading preventable cause of premature death in the United States.<sup>1</sup> More than 430,000 Americans die each year from tobacco-related illnesses.<sup>2</sup> A report by the Surgeon General finds that reducing the prevalence of smoking to the levels suggested by the Healthy People 2010 initiative would prevent 7.1 million premature deaths after the year 2010.<sup>3</sup>

Cigarette smoking, according to the U.S. Surgeon General, has immediate negative health effects, including addiction.<sup>4</sup> Youth who smoke are more likely to drink alcohol, and to use marijuana and other illicit drugs.<sup>5</sup> They are also less likely to be physically fit and more likely to suffer from respiratory problems.<sup>6</sup> According to results from the National Youth Tobacco Survey in 2004, more than two-thirds of current smokers in middle school were not asked to show proof of age when purchasing cigarettes, nor were they refused purchase because of their age.<sup>7</sup>

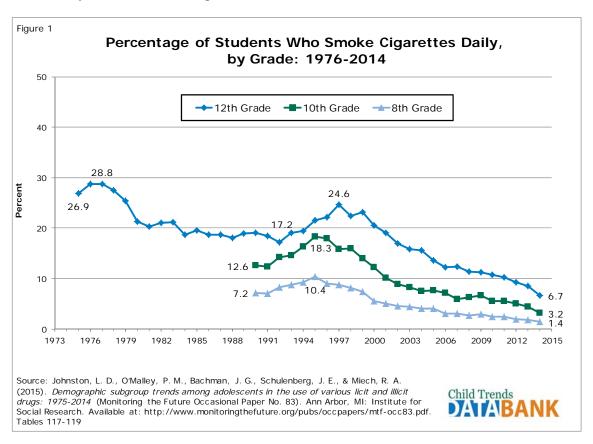
Youths' antisocial behaviors, as well as smoking among their parents and peers, were associated with daily smoking among youth who had initiated smoking by eighth grade. Parents' positive family management was associated with lower likelihood of escalation to daily smoking.<sup>8</sup>

E-cigarettes, or vaporizers, are devices that allow users to inhale a water-based mist of nicotine, rather than tobacco smoke. While the devices do not produce second-hand smoke, as cigarettes do, "vaping" has negative health effects on the user, and adolescent users are more likely to subsequently take up cigarette smoking.



#### **Trends**

In 2014, one percent of eighth-graders, three percent of tenth-graders, and seven percent of twelfth-graders reported smoking daily, compared with 7, 16, and 23 percent, respectively, in 1999. Twelfth-grade daily smoking peaked in 1997 at 25 percent, while daily smoking peaked in 1995 for eighth- and tenth-graders, at 10 and 18 percent respectively. (Figure 1) Some of the factors that may be associated with these long-term declines in smoking rates are increases in the level of students' disapproval of, and their perception of risk connected with smoking; adverse publicity on the tobacco industry's role in promoting addiction; a decline in cigarette advertising reaching youth, together with an increase in antismoking advertising; and substantial price increases for cigarettes.<sup>13</sup>



Although cigarette use is declining, e-cigarette use is on the rise. Between 2011 and 2014, the proportion of high school students who had used e-cigarettes in the past 30 days increased from 2 to 13 percent, while cigarette use in the past 30 days declined from 16 to 9 percent.<sup>14</sup>

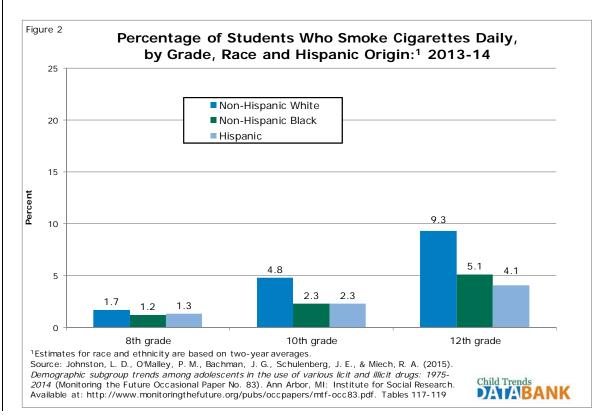


# **Differences by Age**

Daily smoking among students increases with age. While only one percent of eighth-graders reported daily cigarette use in 2014, seven percent of twelfth-graders reported the same. (Figure 1) Although use of e-cigarettes in the past 30 days was lower in 2014 among eighth-graders than their older peers, it was similar among tenth- and twelfth-graders (9 percent among eighth-graders, compared with 16 and 17 percent, respectively among tenth- and twelfth-graders). (Appendix 2)

# Differences by Race and Hispanic Origin<sup>15</sup>

White students in tenth and twelfth grades are much more likely to smoke than their black and Hispanic peers. In 2013-2014, five percent of white tenth-graders smoked daily, compared with two percent of both black and Hispanic tenth-graders. In twelfth grade, there was a similar difference, with nine percent of white students smoking daily, compared with five percent of black, and four percent of Hispanic, students. Differences by race and ethnicity among eighth-graders were not significant in 2013-2014. (Figure 2)





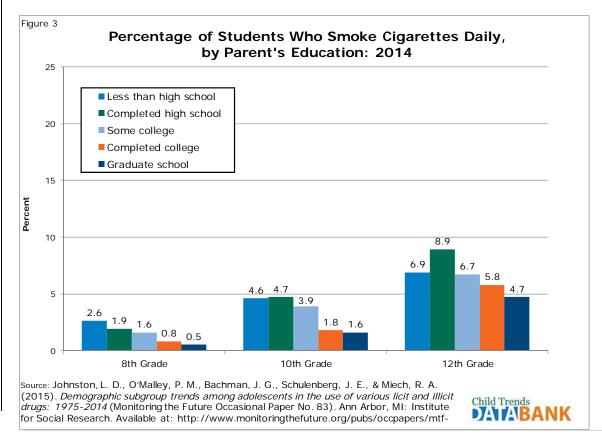
# **Differences by Gender**

In 2014, smoking rates at eighth- and tenth-grade were similar for males and females. However, among twelfth-graders, males were more likely to smoke than females, at eight and five percent, respectively. (Appendix 1)

Teenage boys are more likely to use of e-cigarettes than girls. Among males in 2014, 10 percent of eighth-graders, 19 percent of tenth-graders, and 20 percent of twelfth-graders used e-cigarettes in the past 30 days, compared with 7, 13, and 14 percent of females, respectively. (Appendix 2)

# **Differences by Parental Education Level**

In general, students whose parents have high levels of education are less likely to smoke cigarettes daily than are students whose parents have low levels of education. For example, in 2014, five percent, each, of tenth-grade students with a parent who did not complete high school, and students with a parent with only a high school diploma, smoked cigarettes daily, compared with two percent of those with a parent who had completed college, or a parent who completed graduate school. (Figure 3)





In 2014, eighth- and tenth-grade students whose parents completed college were less likely than their peers whose parents had less education to have used e-cigarettes in the past 30 days. However, among twelfth-graders, there was no clear pattern of use by parental education. (Appendix 2)

# **Differences by College Plans**

Eighth-grade students who do not plan to complete four years of college are roughly five times more likely to smoke daily than students who have such plans (one versus five percent, in 2014). At twelfth-grade this gap narrows, although those with college plans are still nearly three times as likely to smoke as their peers without such plans (5 and 14 percent, respectively). (Appendix 1) Patterns are similar for e-cigarette use. (Appendix 2)

#### State and Local Estimates

- 2013 estimates for cigarette use are available for select states and cities from the Youth Risk Behavior Survey (YRBS) at: <a href="http://www.cdc.gov/mmwr/pdf/ss/ss6304.pdf">http://www.cdc.gov/mmwr/pdf/ss/ss6304.pdf</a> (See Tables 32, 34, 36 and 38)
- Estimates of cigarette use in the past month among 12- to 17-year-olds are available for all 50 states for 2012-2013 from the National Survey on Drug Use and Health at: <a href="http://www.samhsa.gov/data/sites/default/files/report\_1964/ShortReport-1964.html">http://www.samhsa.gov/data/sites/default/files/report\_1964/ShortReport-1964.html</a>

NOTE: Estimates of drug use from the National Household Survey of Drug Abuse (NHSDA), used to generate these state-level estimates, are generally lower than estimates generated by the Monitoring the Future Survey (MTF). Since the MTF was the source of the national estimates presented in this indicator, users should not make direct comparisons of estimates made from the two sources. For information on methodological differences in the surveys that may be causing these differences in estimates, see

Harrison, L. D. (2001). Understanding the differences in youth drug prevalence rates produced by the MTF, NHSDA, and YRBS studies. *Journal of Drug Issues, 31*(3), 665-694.



#### International Estimates

- Estimates for youth in European countries are available through the ESPAD Report
   2011: Substance Use Among Students in 35 European Countries.

   <a href="http://www.espad.org/en/Reports--Documents/ESPAD-Reports/">http://www.espad.org/en/Reports--Documents/ESPAD-Reports/</a> (See Tables 3a, 3b)
- A cross-country comparison of the percentage of youth who report smoking daily is available at: The Global Youth Tobacco Survey Collaborative Group. "Tobacco use among youth: A cross country comparison" *Tobacco Control* 2002 Sep. 11(3): 252-70. <a href="http://tc.bmjjournals.com/cgi/content/abstract/11/3/252">http://tc.bmjjournals.com/cgi/content/abstract/11/3/252</a>
- The percentage of students who report smoking daily is available for 28 countries from the WHO Policy Series: *Health policy for children and adolescents, Issue 1.* (Data from 1997/1998).

http://www.euro.who.int/ data/assets/pdf file/0006/119571/E67880.pdf (page 98)

#### **National Goals**

The federal government has set several national goals, through its *Healthy People 2020* initiative, to reduce tobacco use among adolescents. One goal is to reduce the percentage of high school students smoking one or more cigarettes in the prior month, from the 2009 level of 19.5 percent, to 16 percent by 2020. Another goal is to reduce the initiation of tobacco use among youth 12 to 17 years. Other related goals are to increase tobacco-free schools, reduce adolescents' exposure to advertising for tobacco products, and increase enforcement of laws prohibiting sales of tobacco to minors. To reach this goal, the Center for Disease Control and Prevention (CDC) advocates the use of education programs which work to prevent smoking and encourage cessation of smoking.<sup>16</sup>

More information is available at

http://www.healthypeople.gov/2020/topics-objectives/topic/tobacco-use/objectives



# What Works to Make Progress on This Indicator

The Centers for Disease Control & Prevention provides a list of successful school-based programs, at: <a href="https://www.cdc.gov/HealthyYouth/tobacco/index.htm">www.cdc.gov/HealthyYouth/tobacco/index.htm</a>.

Also, see the Child Trends LINKS database ("Lifecourse Interventions to Nurture Kids Successfully"), for reviews of many rigorously evaluated programs, including the following which have been shown to be effective in preventing adolescent tobacco use:

- The Good Behavior Game: <a href="http://www.childtrends.org/?programs=good-behavior-game-gbg">http://www.childtrends.org/?programs=good-behavior-game-gbg</a>
- Know Your Body: <a href="http://www.childtrends.org/?programs=know-your-body">http://www.childtrends.org/?programs=know-your-body</a>
- Life Skills Training: http://www.childtrends.org/?programs=life-skills-training-lst
- Lion's-Quest Skills for Adolescence:
   http://www.childtrends.org/?programs=lionsquest-skills-for-adolescence
- Nuestras Familias: <a href="http://www.childtrends.org/?programs=nuestras-familias">http://www.childtrends.org/?programs=nuestras-familias</a>
- Project Northland: <a href="http://www.childtrends.org/?programs=project-northland">http://www.childtrends.org/?programs=project-northland</a>
- Project STAR: <a href="http://www.childtrends.org/?programs=midwestern-prevention-project">http://www.childtrends.org/?programs=midwestern-prevention-project</a>
- Project "TNT": <a href="http://www.childtrends.org/?programs=project-toward-no-tobacco-use-project-tnt">http://www.childtrends.org/?programs=project-toward-no-tobacco-use-project-tnt</a>
- School Nurse-Delivered Adolescent Smoking Cessation Counseling Intervention: <a href="http://www.childtrends.org/?programs=school-nurse-delivered-adolescent-smoking-cessation-counseling-intervention">http://www.childtrends.org/?programs=school-nurse-delivered-adolescent-smoking-cessation-counseling-intervention</a>
- Social Influence Curriculum: <a href="http://www.childtrends.org/?programs=social-influence-curriculum">http://www.childtrends.org/?programs=social-influence-curriculum</a>
- Tobacco Policy Options for Prevention:
   http://www.childtrends.org/?programs=tobacco-policy-options-for-prevention-tpop



#### **Related Indicators**

- Parental Smoking: www.childtrends.org/?indicators=parental-smoking
- Substance-Free Youth: <u>www.childtrends.org/?indicators=substance-free-youth</u>
- Asthma: www.childtrends.org/?indicators=asthma
- Mothers who Smoke While Pregnant: <u>www.childtrends.org/?indicators=mothers-who-smoke-while-pregnant</u>

#### **Definition**

Students are considered daily cigarette smokers if they said that they smoked one or more cigarettes per day in the last 30 days.

Students are considered e-cigarette smokers if they used any e-cigarettes in the past 30 days. The question referred to electronic cigarettes or e-cigarettes.

#### **Data Source**

Data for 1976-2014: Johnston, L. D., O'Malley, P. M., Bachman, J. G., Schulenberg, J. E., & Miech, R. A. (2015). *Demographic subgroup trends among adolescents in the use of various licit and illicit drugs: 1975-2014* (Monitoring the Future Occasional Paper No. 83). Ann Arbor, MI: Institute for Social Research. Available at:

http://monitoringthefuture.org/pubs/occpapers/mtf-occ83.pdf. Tables 117 to 119, and 4-7

#### **Raw Data Source**

The Monitoring the Future Survey

http://www.monitoringthefuture.org



# Appendix 1 - Percentage of Students in Grades 8, 10, and 12 who Report Smoking Cigarettes Daily<sup>1</sup>: Selected Years, 1976-2014

	1976	1981	1986	1991	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Eighth grade				7.2	9.3	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
Gender																				
Male	-	-	-	8.1	9.2	7.0	5.9	5.4	4.4	4.4	3.9	4.0	3.4	3.2	2.9	3.5	2.5	2.0	1.7	1.2
Female	-	-	-	6.2	9.2	7.5	4.9	4.9	4.5	4.3	4.0	3.8	2.6	2.9	2.3	2.3	2.2	1.6	1.8	1.3
Race/Hispanic origin <sup>2</sup>																				
Non-Hispanic white	-	-	-	-	10.5	9.0	7.5	6.0	5.3	4.7	4.6	4.6	3.9	3.3	3.2	3.2	3.0	2.4	2.0	1.7
Non-Hispanic black	-	-	-	-	2.8	3.2	2.8	2.8	2.9	2.7	2.1	1.9	2.1	1.9	2.0	1.9	1.5	1.6	1.5	1.2
Hispanic	-	-	-	-	9.2	7.1	5.0	4.4	3.7	3.5	3.1	2.8	2.8	2.5	2.2	2.3	2.4	1.8	1.4	1.3
Parental Education <sup>3</sup>																				
Less than high school	-	-	-	15.9	15.8	13.1	11.1	10.6	9.1	10.1	7.8	7.3	5.5	5.4	6.2	4.2	3.9	2.6	2.7	2.6
Completed high school	-	-	-	8.6	11.3	11.3	7.5	7.1	6.6	5.6	6.3	6.6	4.9	4.4	3.4	4.8	3.9	3.3	3.0	1.9
Some college	-	-	-	6.5	9.4	6.7	5.1	5.4	4.4	4.2	4.3	3.8	3.6	3.0	2.5	2.8	2.9	2.2	2.0	1.6
Completed college	-	-	-	4.0	7.2	3.9	3.0	3.3	2.6	2.8	2.2	2.1	1.5	1.9	1.8	1.9	1.4	0.9	1.0	0.8
Graduate school	-	-	-	4.9	5.7	4.1	3.1	2.1	2.1	1.9	1.4	1.8	0.7	1.9	1.4	1.0	0.9	1.0	1.0	0.5
College plans																				
None or under 4 years	-	-	-	18.5	22.5	21.7	17.7	17.1	16.1	15.4	14.4	13.2	12.3	10.6	10.9	12.8	8.1	8.0	8.3	4.7
Complete 4 years	-	-	-	5.3	7.5	5.6	3.9	3.9	3.2	3.1	2.9	2.9	2.2	2.3	1.9	2.0	1.9	1.4	1.4	1.0



	1976	1981	1986	1991	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Tenth Grade	-	-	-	12.6	16.3	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
Gender																				
Male	-	-	-	12.4	16.3	13.7	12.4	9.4	8.6	8.2	7.2	6.9	7.7	6.2	6.9	7.2	6.4	5.6	5.4	3.5
Female	-	-	-	12.5	16.1	14.1	11.9	10.8	9.0	8.2	7.7	8.1	6.6	5.5	5.6	5.9	4.5	4.4	3.4	2.8
Race/Hispanic origin <sup>2</sup>																				
Non-Hispanic white	-	-	-	-	17.6	17.7	15.5	13.3	11.4	10.0	9.1	8.7	8.8	8.0	7.1	7.4	7.1	6.2	5.7	4.8
Non-Hispanic black	-	-	-	-	4.7	5.2	5.2	5.0	4.3	4.4	3.9	3.3	3.2	3.0	3.2	3.5	3.5	2.9	2.6	2.3
Hispanic	-	-	-	-	9.9	8.8	7.4	6.4	6.0	6.0	5.9	5.3	3.8	3.8	4.5	4.4	4.4	3.0	2.6	2.3
Parental Education <sup>3</sup>																				
Less than high school	-	-	-	16.0	20.0	18.9	12.9	14.1	15.3	11.4	9.9	12.5	9.8	7.6	9.4	10.0	8.2	8.0	6.8	4.6
Completed high school	-	-	-	15.5	21.6	17.6	16.2	14.7	12.7	11.5	11.1	11.9	10.8	8.7	8.7	10.1	8.9	7.5	7.2	4.7
Some college	-	-	-	12.0	17.0	14.2	12.2	10.0	8.8	9.3	7.9	7.8	7.2	6.7	6.7	7.1	5.6	4.5	4.7	3.9
Completed college	-	-	-	10.6	12.6	11.5	9.7	6.8	5.8	5.4	5.2	4.4	5.5	3.8	4.6	3.9	3.3	4.3	2.8	1.8
Graduate school	-	-	-	9.6	10.3	9.8	8.3	6.4	4.5	4.2	4.4	4.3	3.5	3.0	3.5	3.1	2.5	2.8	1.9	1.6
College plans																				
None or under 4 years	-	-	-	25.7	32.7	28.8	27.3	22.9	22.1	21.4	19.2	21.7	18.9	17.9	17.3	19.1	17.1	17.0	13.4	10.5
Complete 4 years	-	-	-	9.6	13.3	11.6	9.6	7.9	6.7	6.4	5.9	5.6	5.6	4.3	5.0	5.0	4.2	3.7	3.4	2.3



	1976	1981	1986	1991	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Twelfth Grade	28.8	20.3	18.7	18.5	21.6	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
Gender																				
Male	28.0	18.1	16.9	18.8	21.7	20.9	18.4	17.2	17.0	15.4	14.6	12.0	13.0	12.0	11.8	12.3	11.6	10.9	9.7	7.9
Female	28.8	21.7	19.8	17.9	20.8	19.7	18.9	16.1	14.0	15.0	11.9	11.8	11.2	10.6	9.9	8.7	8.6	7.3	6.5	5.4
Race/Hispanic origin <sup>2</sup>																				
Non-Hispanic white	-	21.4	20.6	21.5	23.9	25.7	23.8	21.8	19.5	18.3	17.1	15.3	14.5	14.3	13.9	13.5	13.0	12.1	10.9	9.3
Non-Hispanic black	-	14.6	9.4	5.1	6.1	8.0	7.5	6.4	5.4	5.2	5.6	5.7	5.8	5.8	5.4	5.3	4.9	4.7	5.3	5.1
Hispanic	-	13.6	11.3	11.5	11.6	15.7	12.0	9.2	8.0	8.2	7.7	7.0	6.6	6.7	6.4	5.7	5.3	4.9	4.7	4.1
Parental Education <sup>3</sup>																				
Less than high school	32.7	24.1	20.4	21.2	21.3	22.8	16.4	12.4	15.1	14.2	11.7	11.4	14.6	11.9	11.2	8.9	9.9	9.6	10.2	6.9
Completed high school	31.3	22.5	21.4	19.8	24.6	22.9	21.9	19.8	18.3	19.4	18.3	16.1	15.1	13.4	14.7	13.9	13.5	11.6	10.4	8.9
Some college	25.8	19.0	19.4	18.5	21.6	21.2	19.9	19.1	16.5	16.3	14.4	12.3	12.3	12.5	11.5	11.6	10.7	11.2	10.0	6.7
Completed college	24.5	16.1	13.9	16.2	19.7	18.6	17.9	14.1	13.0	13.7	11.7	10.4	11.2	9.0	9.0	8.7	8.2	7.1	6.4	5.8
Graduate school	22.8	13.9	13.6	16.1	18.5	15.2	13.4	14.3	11.3	10.3	8.1	8.3	7.4	9.1	5.8	6.1	6.7	4.7	3.6	4.7
College plans																				
None or under 4 years	36.5	29.3	28.2	28.4	33.7	31.7	30.1	27.6	27.9	26.9	24.9	22.8	22.5	21.1	20.9	21.6	21.0	18.4	18.8	14.0
Complete 4 years	19.8	12.9	12.8	14.1	17.4	16.6	15.5	13.8	12.1	12.2	10.5	9.4	9.9	9.0	8.6	8.2	7.9	7.0	5.8	5.0

<sup>&</sup>quot;-" Indicates data not available.

<sup>&</sup>lt;sup>1</sup> Respondents were asked about smoking habits over the past thirty-day period.

<sup>&</sup>lt;sup>2</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 the most stable estimates.

<sup>&</sup>lt;sup>3</sup> Parental education is calculated by the Institute of Social Research as the average of the mother's and father's education. Averages that fall between two levels were rounded up by Child Trends to reflect the attainment of the most educated parent.



Source: Johnston, L. D., O'Malley, P. M., Bachman, J. G., Schulenberg, J. E., & Miech, R. A. (2015). *Demographic subgroup trends among adolescents in the use of various licit and illicit drugs: 1975-2014* (Monitoring the Future Occasional Paper No. 83). Ann Arbor, MI: Institute for Social Research. Available at: http://www.monitoringthefuture.org/pubs/occpapers/mtf-occ83.pdf. Tables 117-119



Appendix 2 - Percentage of Students in Grades 8, 10, and 12 who Report Smoking E-Cigarettes, or Cigarettes, Any Time in the Past 30 Days: 2014

		E-cigarettes		Cigarettes							
	Eighth Grade	Tenth Grade	Twelfth Grade	Eighth Grade	Tenth Grade	Twelfth Grade					
Total	8.7	16.2	17.1	4.0	7.2	13.6					
Gender											
Male	9.8	19.2	20.1	3.5	7.7	15.2					
Female	7.1	13.1	13.7	4.2	6.6	11.6					
Parental Education <sup>1</sup>											
Less than high school	11.4	20.3	14.6	5.8	9.7	14.8					
Completed high school	12.1	16.3	19.1	6.2	9.1	16.1					
Some college	10.2	20.2	18.3	4.8	8.4	14.2					
Completed college	6.7	14.9	14.7	2.6	5.2	12.0					
Graduate school	5.3	13.1	18.6	1.7	4.9	9.4					
College plans											
None or under 4 years	9.8	26.3	23.0	13.1	19.4	25.3					
Complete 4 years	7.1	15.3	15.4	3.1	5.8	10.8					

<sup>&</sup>lt;sup>1</sup>Parental education is calculated by the Institute of Social Research as the average of the mother's and father's education. Averages that fall between two levels were rounded up by Child Trends to reflect the attainment of the most educated parent.

Source: Johnston, L. D., O'Malley, P. M., Bachman, J. G., Schulenberg, J. E., & Miech, R. A. (2015). *Demographic subgroup trends among adolescents in the use of various licit and illicit drugs: 1975-2014* (Monitoring the Future Occasional Paper No. 83). Ann Arbor, MI: Institute for Social Research. Available at: http://www.monitoringthefuture.org/pubs/occpapers/mtf-occ83.pdf. Table 4-7



#### **Endnotes**

<sup>1</sup> U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health. (2004). *The health consequences of smoking: A report of the Surgeon General.* Washington, D.C.: U.S. GPO. <a href="http://www.cdc.gov/tobacco/sgr/sgr/2004/index.htm">http://www.cdc.gov/tobacco/sgr/sgr/2004/index.htm</a>;

http://pediatrics.aappublications.org/content/pediatrics/136/5/1018.full.pdf

<sup>&</sup>lt;sup>2</sup> Youth Risk Behavior Surveillance -United States, 2007. (2008). *Morbidity & Mortality Weekly Report* 57(SS-4), 1-131. Available at: <a href="http://www.cdc.gov/mmwr/preview/mmwrhtml/ss5704a1.htm">http://www.cdc.gov/mmwr/preview/mmwrhtml/ss5704a1.htm</a>

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<sup>&</sup>lt;sup>5</sup> Ibid.

<sup>&</sup>lt;sup>6</sup> U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health. (2004). Op. cit.

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<sup>&</sup>lt;sup>15</sup> Estimates for race and ethnicity are based on 2-year averages. Hispanics may be any race. Estimates for whites and blacks exclude Hispanics.

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