

ADDICTED to E-Cigarettes and Vaping

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A New Epidemic

In December 2018 US surgeon general Jerome Adams issued a warning about a dangerous new trend sweeping the country: e-cigarettes and vaping. Adams warned that vaping, and teen vaping in particular, had become a significant public health threat. “It’s why, today, I’m issuing just the fourth Surgeon General’s advisory in over 10 years,” Adams said. “There is an epidemic of use of e-cigarettes.”¹ He was referring to the concerning results of several surveys that have found teens using e-cigarettes and vaping products in record numbers. The Food and Drug Administration’s 2018 National Youth Tobacco Survey, for example, revealed that the number of high schoolers using e-cigarettes and vaping products increased 78 percent between 2017 and 2018. The increase in use is not limited to high school youth; the survey also reported that the number of middle schoolers using e-cigarettes increased 48 percent from 2017 to 2018.

A New Nicotine Device

E-cigarettes arrived on the US market during the middle of the first decade of the 2000s. Widespread advertising via television commercials, print advertisements, Internet ads, and social media made the devices appear cool and exciting, as did the celebrities who were photographed using them. Initially, e-cigarettes and other vaping devices were presented as healthier alternatives to traditional tobacco smoking. Unlike tobacco cigarettes, e-cigarettes have no tar, a sticky brown substance linked to throat and lung cancer. Neither do e-cigarettes contain many of the other cancer-causing chemicals found in tobacco cigarettes.

But just because e-cigarettes contain fewer or different chemicals than regular cigarettes does not mean they are safe. E-cigarettes still contain nicotine, the addictive drug in tobacco. In some cases, e-cigarettes and vaping products deliver even more nicotine to users than do regular cigarettes. Nicotine is highly addictive and is especially dangerous for developing teen brains. “We must take aggressive steps to protect our children from these highly potent products that risk exposing a new generation of young people to nicotine. Nicotine is uniquely harmful to young and developing brains [and] can cause learning, attention and memory problems, and it can prime the brain for addiction in the future,”² said Adams.

In addition, the aerosol produced by e-cigarettes and its flavorings can contain a variety of chemicals, such as propylene glycol, benzene, formaldehyde, and diethylene glycol. Some of these chemicals are known to be toxic or to cause cancer. However, because these devices are so new, the long-term health effects of using e-cigarettes are still being determined.

A Dangerous Reversal in Public Health Gains

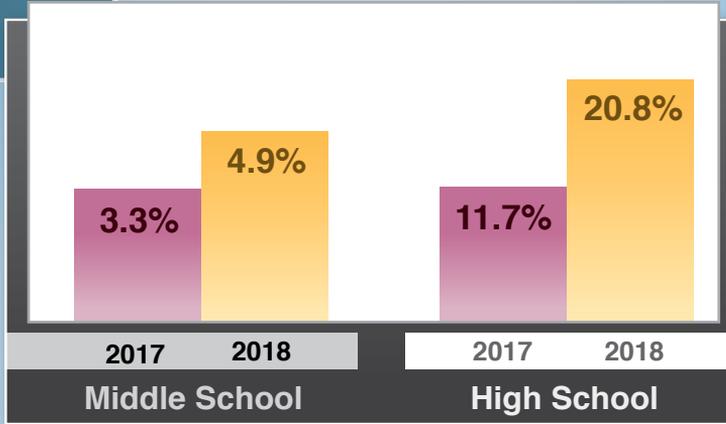
As a result of aggressive antismoking public health campaigns, adult smoking rates in the United States have declined over the years. According to a 2018 report by the Centers for Disease Control and Prevention (CDC), only 14 percent of American adults (34.3 million) smoked cigarettes in 2017; this is a decline of 67 percent since 1965, when 42.4 percent of American adults smoked cigarettes. “The declines we saw in 2017 for adult smoking are certainly unprecedented,”³ says Brian King, a deputy director in the CDC’s office on smoking and health. Youth smoking is also on the decline. According to the 2017 National Youth Tobacco Survey, a record low of 7.6 percent of high school students smoked tobacco cigarettes compared to 36.4 percent in 1997.

The decline in adult and youth smoking rates is an important public health achievement: tobacco use is the number-one cause of preventable disease, death, and disability in the United States.

Teen E-Cigarette Use Is Rapidly Growing

A national survey has revealed that 1.5 million more students in the United States used e-cigarettes in 2018 than in 2017. The increase among high school students during that one-year period was 78 percent, resulting in a total of 20.8 percent of high school students. The increase among middle school students was 48 percent, resulting in a total of 4.9 percent of middle school students. Public health officials and others say they are alarmed by the huge increase in e-cigarette use among US teenagers.

Teen E-Cigarette Use, 2017–2018



Source: US Food and Drug Administration, "Youth Tobacco Use: Results from the National Youth Tobacco Survey," November 2018. www.fda.gov.

According to the CDC, more than 16 million Americans have at least one disease caused by smoking, and millions more are exposed to secondhand smoke. Smoking-related illnesses cost society more than \$300 billion annually, which includes \$170 billion in direct medical costs and more than \$130 billion in lost productivity. Reducing the number of smokers improves health and reduces the economic costs of smoking-related illnesses. However, the arrival of e-cigarettes and vaping has started to reverse the progress made by antismoking campaigns. The 2018 National Youth Tobacco Survey showed that more than 3.6 million middle and high school students had used e-cigarettes in the past thirty days, which is a substantial increase of more than 1.5 million students. In other words, the number of teen e-cigarette users had more

than doubled compared to the prior year. The report revealed that youth who are using e-cigarettes are vaping more frequently and are using flavored products more often than they had in the prior year. The sharp increase in e-cigarette use is driving an overall increase in youth tobacco product use as well. “[This is] a cause for grave concern,” says CDC director Robert R. Redfield. “E-cigarette use is unsafe among youth, and it’s critical that we implement proven strategies to protect our Nation’s youth from this preventable health risk.”⁴

“All the work that happened, all the public health campaigns, the billions of dollars spent to try to eliminate tobacco use for kids has been undone.”⁵

—Jonathan Winickoff, a pediatrician at Massachusetts General Hospital in Boston

Millions Are Becoming Addicted

In a few short years, e-cigarettes have exploded in popularity, especially among teens. While smoking e-cigarettes may be safer than smoking tobacco, there are still serious risks. The ingredients “smoked” in these devices often pack a strong punch of nicotine, which is a highly addictive drug. They also contain dangerous cancer-causing chemicals. Although not everyone who vapes will become addicted, many will. “These products are really creating a resurgence,” says Jonathan Winickoff, a pediatrician at Massachusetts General Hospital in Boston. “All the work that happened, all the public health campaigns, the billions of dollars spent to try to eliminate tobacco use for kids has been undone. Now we have millions of adolescents currently addicted to nicotine.”⁵

Dripping Increases Health Risks

A dangerous new vaping trend called dripping may make e-cigarettes even more harmful to one's health. In the normal vaping process, e-cigarettes slowly release e-liquid from a wick onto a hot coil within the device. Dripping, however, is the practice of dropping e-liquid directly onto the device's hot coils. Dripping produces a thicker, more flavorful vapor and gives a stronger sensation in the throat. It heats the e-liquid to higher temperatures than regular e-cigarette use. Higher temperatures, however, are harmful because they produce greater emissions and expose users to harmful chemicals such as formaldehyde and acetaldehyde, which are known to cause cancer. They also expose users to higher levels of nicotine, making dripping a potentially more addictive delivery system. Despite these risks, one in four teens who vape say they have tried dripping, according to a 2017 study published in the journal *Pediatrics*.

Along with being suspended from classes, some students caught vaping at school can also be suspended from participating in athletics or other extracurricular activities. In North Jersey's Ramsey School District, students caught with vaping devices on school property are suspended for five days for the first offense and not allowed to participate in any extracurricular activities for seven days, including events like graduation and prom. At Hoover High in Canton, Ohio, football player A.J. Vega was caught at school with an e-cigarette in 2017, which violated school policy. "A.J. was playing basketball at the school and a vape pen . . . fell out of his pocket," says family attorney Warner Mendenhall. "One of the coaches came up. They asked him, 'Is this yours?' He admitted it."⁵⁴ The football team suspended Vega for the remainder of the season.

People who cannot control their urge to vape can even find themselves in trouble with the law. For example, the use of e-cigarettes or other vaping devices is banned on airplanes. However, that does not stop addicted users from trying to sneak a puff or two, especially if the flight is long. If caught, vaping passengers

Source Notes

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3. Quoted in Angelica LaVito, “CDC Says Smoking Rates Fall to Record Low in US,” CNBC, November 8, 2018. www.cnbc.com.
4. Quoted in “Results from 2018 National Youth Tobacco Survey Show Dramatic Increase in E-Cigarette Use Among Youth over Past Year,” US Food & Drug Administration, November 15, 2018. www.fda.gov.
5. Quoted in Leah Campbell, “Juuling: The Addictive New Vaping Trend Teens Are Hiding,” Healthline, August 17, 2018. www.healthline.com.

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7. English, “I Started Vaping to Quit Smoking, and It Was a Huge Mistake.”
8. English, “I Started Vaping to Quit Smoking, and It Was a Huge Mistake.”
9. Quoted in Renata Birkenbuel, “The New Nicotine Addiction: US Teen Vaping Stats Spike in 2018,” *Newsweek*, December 18, 2018. www.newsweek.com.
10. Quoted in Maggie Fox, “Is Teen Vaping Really an Epidemic? These Experts Say Yes,” NBC News, September 15, 2018. www.nbcnews.com.

Get Help and Information

Center on Addiction

633 Third Ave., 19th Fl.
New York, NY 10017-6706
website: www.centeronaddiction.org

The Center on Addiction is a nonprofit organization dedicated to helping people address addiction. Its website has information about addiction, prevention, and treatment for a variety of substances, including e-cigarettes.

National Institute on Drug Abuse (NIDA)

6001 Executive Blvd., Room 5213
Bethesda, MD 20892-9561
website: www.drugabuse.gov

Part of the National Institutes of Health, NIDA supports research efforts that improve drug abuse prevention, treatment, and policy. Its website links to the NIDA for Teens site, which is designed especially for young people and provides a wealth of information about various drugs, including nicotine and e-cigarettes.

Nicotine Anonymous

6333 E. Mockingbird Ln., Suite 147-817
Dallas, TX 75214
website: <https://nicotine-anonymous.org>

Nicotine Anonymous is a nonprofit twelve-step program for people seeking to live nicotine-free lives. Its website provides information about meetings and events, a newsletter, and other information.

Office of the Surgeon General

200 Independence Ave. SW, Suite 701H
Washington, DC 20201
website: www.surgeongeneral.gov

For Further Research

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