



Tobacco, Nicotine, & E-Cigarettes

Street names: Chew, Dip, Snuff

EXPAND ALL

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What are tobacco, nicotine, and e-cigarette products?

**Also known as:**

Cigarettes: Butts, Cigs, and Smokes

Smokeless tobacco: Chew, Dip, Snuff, Snus, and Spit Tobacco

Hookah: Goza, Hubble-bubble, Narghile, Shisha, and Waterpipe

Tobacco is a leafy plant grown around the world, including in parts of the United States. There are many chemicals found in tobacco leaves or created by burning them (as in cigarettes), but nicotine is the ingredient that can lead to addiction. Other chemicals produced by smoking, such as tar, carbon monoxide, acetaldehyde, and nitrosamines, also can cause serious harm to the body. For example, tar causes lung cancer and other serious diseases that affect breathing, and carbon monoxide can cause heart problems.

Teens who are considering smoking for social reasons should keep this in mind: Tobacco use is the leading preventable cause of disease, disability, and death in the United States. According to the Centers for Disease Control and Prevention (CDC), cigarettes cause more than 480,000 premature deaths in the United States each year—from smoking or exposure to secondhand

smoke—about 1 in every 5 U.S. deaths, or 1,300 deaths every day. An additional 16 million people suffer with a serious illness caused by smoking. So, for every 1 person who dies from smoking, 30 more suffer from at least 1 serious tobacco-related illness.¹

How Tobacco and Nicotine Products Are Used

Tobacco and nicotine products come in many forms. People can smoke, chew, sniff them, or inhale their vapors.

- **Smoked tobacco products.**

- *Cigarettes (regular, light, and menthol):* No evidence exists that “lite” or menthol cigarettes are safer than regular cigarettes.
- *Cigars and pipes:* Some small cigars are hollowed out to make room for marijuana, known as “blunts.” Some young people do this to attempt to hid the fact that they are smoking marijuana. either way, they are inhaling toxic chemicals.
- *Bidis and kreteks (clove cigarettes):* Bidis are small, thin, hand-rolled cigarettes primarily imported to the United States from India and other Southeast Asian countries. Kreteks—sometimes referred to as clove cigarettes—contain about 60-80% tobacco and 20-40% ground cloves. Flavored bidis and kreteks are banned in the United States because of the ban on flavored cigarettes.
- *Hookahs or water pipes:* Hookah tobacco comes in many flavors, and the pipe is typically passed around in groups. A [recent study](#) found that a typical hookah session delivers approximately 125 times the smoke, 25 times the tar, 2.5 times the nicotine, and 10 times the carbon monoxide as smoking a cigarette

- **Smokeless tobacco products.** The tobacco is not burned with these products:

- *Chewing tobacco.* It is typically placed between the cheek and gums.
- *Snuff:* Ground tobacco that can be sniffed if dried or placed between the cheek and gums.
- *Dip:* Moist snuff that is used like chewing tobacco.
- *Snus:* A small pouch of moist snuff
- *Dissolvable products (including lozenges, orbs, sticks, and strips)*

- **Electronic cigarettes** (also called e-cigarettes, electronic nicotine delivery systems, or e-cigs). Electronic cigarettes are battery-operated devices that deliver nicotine and flavorings without burning tobacco. In most e-cigarettes, puffing activates the battery-powered heating device, which vaporizes the liquid in the cartridge. The resulting vapor is then inhaled (called “vaping”). See [What About E-Cigarettes?](#) to learn more.

¹ Centers for Disease Control and Prevention. *Smoking and Tobacco Use: Fast Facts*. Atlanta, GA. December 2015. Available at http://www.cdc.gov/tobacco/data_statistics/fact_sheets/fast_facts/index.htm.

What happens in the brain when you use tobacco and nicotine?

Like other drugs, nicotine increases levels of a neurotransmitter called [dopamine](#). Dopamine is released normally when you experience something pleasurable like good food, your favorite activity, or spending time with people you care about. When a person uses tobacco products, the release of dopamine causes similar effects. This effect wears off quickly, causing people who smoke to get the urge to light up again for more of that good feeling, which can lead to addiction.

A typical smoker will take 10 puffs on a cigarette over the period of about 5 minutes that the cigarette is lit. So, a person who smokes about 1 pack (25 cigarettes) daily gets 250 “hits” of nicotine each day.

Studies suggest that other chemicals in tobacco smoke, such as acetaldehyde, may increase the effects of nicotine on the brain.

When smokeless tobacco is used, nicotine is absorbed through the mouth tissues directly into the blood, where it goes to the brain. Even after the tobacco is removed from the mouth, nicotine continues to be absorbed into the bloodstream. Also, the nicotine stays in the blood longer for users of smokeless tobacco than for smokers.

What happens to your body when you use tobacco and nicotine?

When nicotine enters the body, it initially causes the adrenal glands to release a hormone called adrenaline. The rush of adrenaline stimulates the body and causes an increase in blood pressure, heart rate, and breathing.

Most of the harm to the body is not from the nicotine, but from other chemicals in tobacco or those produced when burning it—including carbon monoxide, tar, formaldehyde, cyanide, and ammonia. Tobacco use harms every organ in the body and can cause many problems. The health effects of smokeless tobacco are somewhat different from those of smoked tobacco, but both can cause cancer.

Secondhand Smoke

People who do not smoke but live or hang out with smokers are exposed to secondhand smoke—exhaled smoke as well as smoke given off by the burning end of tobacco products. Just like smoking, this also increases the risk for many diseases. Each year, an estimated 58 million Americans are regularly exposed to secondhand smoke and more than 42,000 nonsmokers die from diseases caused by secondhand smoke exposure.² One in four U.S. middle and high school students say they've been exposed to unhealthy secondhand aerosol from e-cigarettes.³

The chart below lists the health problems people are at risk for when smoking or chewing tobacco or as a result of exposure to secondhand smoke.

Increased Risk of Health Problems

Health Effect	Smoking tobacco	Secondhand Smoke	Smokeless tobacco

Increased Risk of Health Problems

Health Effect	Smoking tobacco	Secondhand Smoke	Smokeless tobacco
Cancer	<p><i>Cancers:</i> Cigarette smoking can be blamed for about one-third of all cancer deaths, including 90% of lung cancer cases. Tobacco use is also linked with cancers of the mouth, pharynx, larynx, esophagus, stomach, pancreas, cervix, kidney, ureter, bladder, and bone marrow (leukemia).</p>	<p><i>Lung cancer:</i> People exposed to secondhand smoke increase their risk for lung cancer by 20% to 30%. About 7,300 lung cancer deaths occur per year among people who do not smoke.⁴</p>	<p><i>Cancers:</i> Close to 30 chemicals in smokeless tobacco have been found to cause cancer. People who use smokeless tobacco are at increased risk for oral cancer (cancers of the mouth, lip, tongue, and pharynx) as well as esophageal and pancreatic cancers.</p>

Increased Risk of Health Problems

Health Effect	Smoking tobacco	Secondhand Smoke	Smokeless tobacco
Lung Problems	<p><i>Breathing problems:</i> Bronchitis (swelling of the air passages to the lungs), emphysema (damage to the lungs), and pneumonia have been linked with smoking.</p> <p><i>Lowered lung capacity:</i> People who smoke can't exercise or play sports for as long as they once did.</p>	<p><i>Breathing problems:</i> Secondhand smoke causes breathing problems in people who do not smoke, like coughing, phlegm, and lungs not working as well as they should.</p>	
Heart Disease / Stroke	<p><i>Heart disease and stroke:</i> Smoking increases the risk for stroke, heart attack, vascular disease (diseases that affect the circulation of blood through the body), and aneurysm (a balloon-like bulge in an artery that can rupture and cause death).</p>	<p><i>Heart disease:</i> Secondhand smoke increases the risk for heart disease by 25% to 30%. It is estimated to contribute to as many as 34,000 deaths related to heart disease.⁵</p>	<p><i>Heart disease and stroke:</i> Recent research shows smokeless tobacco may play a role in causing heart disease and stroke.</p>

Increased Risk of Health Problems

Health Effect	Smoking tobacco	Secondhand Smoke	Smokeless tobacco
Other health Problems	<p><i>Cataracts:</i> People who smoke can get cataracts, which is clouding of the eye that causes blurred vision.</p> <p><i>Loss of sense of smell and taste</i></p>		<p><i>Mouth problems:</i> Smokeless tobacco increases the chance of getting cavities, gum disease, and sores in the mouth that can make eating and drinking painful.</p>
	<p><i>Aging skin and teeth:</i> After smoking for a long time, people find their skin ages faster and their teeth discolor.</p>		

Increased Risk of Health Problems

Health Effect	Smoking tobacco	Secondhand Smoke	Smokeless tobacco
Pregnant Women and Children	<i>Pregnant women:</i> Pregnant women who smoke are at increased risk for delivering their baby early or suffering a miscarriage, still birth, or experiencing other problems with their pregnancy. Smoking by pregnant women also may be associated with learning and behavior problems in children.	<i>Health problems for children:</i> Children exposed to secondhand smoke are at an increased risk for sudden infant death syndrome, lung infections, ear problems, and more severe asthma.	
Accidental Death	<i>Fire-related deaths:</i> Smoking is the leading cause of fire-related deaths—more than 600 deaths each year. ⁶		

²Centers for Disease Control and Prevention. *Smoking and Tobacco Use: Fast Facts*. Atlanta, GA. December 2015. Available at http://www.cdc.gov/tobacco/data_statistics/fact_sheets/fast_facts/index.htm.

³Wang TW, Marynak KL, Aguku IT, et al. Secondhand Exposure to Electronic Cigarette Aerosol Among US Youths. *JAMA Pediatrics*. 2017, e1.

⁴Centers for Disease Control and Prevention. *Smoking and Tobacco Use: Health Effects of Secondhand Smoke*. Atlanta, GA. February 2016. Available at http://www.cdc.gov/tobacco/data_statistics/fact_sheets/secondhand_smoke/health_effects/index.htm.

⁵Centers for Disease Control and Prevention. *Smoking and Tobacco Use: Health Effects of Secondhand Smoke*. Atlanta, GA. February 2016. Available at http://www.cdc.gov/tobacco/data_statistics/fact_sheets/secondhand_smoke/health_effects/index.htm.

⁶ Centers for Disease Control and Prevention. *Smoking and Tobacco Use. Tobacco-Related Mortality*. Atlanta, GA. February 2016. Available at http://www.cdc.gov/tobacco/data_statistics/fact_sheets/health_effects/tobacco_related_mortality/.

Can you die if you use tobacco and nicotine products?

Yes. Tobacco use (both smoked and smokeless) is the leading preventable cause of death in the United States. It is a known cause of cancer. Smoking tobacco also can lead to early death from heart disease, health problems in children, and accidental home and building fires caused by dropped cigarettes. In addition, the nicotine in smokeless tobacco may increase the risk for sudden death from a condition where the heart does not beat properly (ventricular arrhythmias); as a result, the heart pumps little or no blood to the body's organs.

According to the Centers for Disease Control and Prevention (CDC), cigarette smoking results in more than 480,000 premature deaths in the United States each year—about 1 in every 5 U.S. deaths, or 1,300 deaths every day.⁷ On average, smokers die 10 years earlier than nonsmokers.⁸ People who smoke are at increased risk of death from cancer, particularly lung cancer, heart disease, lung diseases, and accidental injury from fires started by dropped cigarettes.

The good news is that people who quit may live longer. A 24-year-old man who quits smoking will, on average, increase his life expectancy (how long he is likely to live) by 5 years.⁹

⁷ Centers for Disease Control and Prevention. *Smoking and Tobacco Use: 2014 Surgeon General's Report: The Health Consequences of Smoking—50 Years of Progress*. Atlanta, GA. 2014. Available at http://www.cdc.gov/tobacco/data_statistics/sgr/50th-anniversary/index.htm.

⁸ Centers for Disease Control and Prevention. *Smoking and Tobacco Use: Fast Facts*. Atlanta, GA. December 2015. Available at http://www.cdc.gov/tobacco/data_statistics/fact_sheets/fast_facts/index.htm.

⁹ Centers for Disease Control and Prevention. *The Health Benefits of Smoking Cessation: A Report of the Surgeon General*. Atlanta, GA. 1990. HHS Publication No. 90-8416.

Are tobacco or nicotine products addictive?

Yes. It is the nicotine in tobacco that is addictive. Each cigarette contains about 10 milligrams of nicotine. A person inhales only some of the smoke from a cigarette, and not all of each puff

is absorbed in the lungs. The average person gets about 1 to 2 milligrams of the drug from each cigarette.

Studies of widely used brands of smokeless tobacco showed that the amount of nicotine per gram of tobacco ranges from 4.4 milligrams to 25.0 milligrams. Holding an average-size dip in your mouth for 30 minutes gives you as much nicotine as smoking 3 cigarettes. A 2-can-a-week snuff dipper gets as much nicotine as a person who smokes 1½ packs a day.

Whether a person smokes tobacco products or uses smokeless tobacco, the amount of nicotine absorbed in the body is enough to make someone addicted. When this happens, the person continues to seek out the tobacco even though he or she understands the harm it causes. Nicotine addiction can cause:

- *tolerance*: Over the course of a day, someone who uses tobacco products develops tolerance—more nicotine is required to produce the same initial effects. In fact, people who smoke often report that the first cigarette of the day is the strongest or the “best.”
- *withdrawal*: When people quit using tobacco products, they usually experience uncomfortable [withdrawal](#) symptoms, which often drive them back to tobacco use. Nicotine withdrawal symptoms include:

- irritability
- problems with thinking and paying attention
- sleep problems
- increased appetite
- craving, which may last 6 months or longer, and can be a major stumbling block to quitting

What about e-cigarettes?

E-cigarettes are fairly new products. They’ve only been around for about ten years, so researchers are in the early stage of studying how they affect your health.

How E-cigarettes Work

E-cigarettes are designed to deliver nicotine without the other chemicals produced by burning tobacco leaves. Puffing on the mouthpiece of the cartridge activates a battery-powered inhalation device (called a vaporizer). The vaporizer heats the liquid inside the cartridge which contains nicotine, flavors, and other chemicals. The heated liquid turns into an aerosol (vapor) which the user inhales—referred to as “vaping.”

How E-cigarettes Affect the Brain

Research so far suggests that e-cigarettes may be less harmful than cigarettes when people who regularly smoke switch to them as a complete replacement. But since they are so new, we do not know for sure. And, nicotine in any form is a highly addictive drug. Health experts have raised many questions about the safety of these products, particularly for teens:

- Testing of some e-cigarette products found the aerosol (vapor) to contain known cancer-causing and toxic chemicals, and particles from the vaporizing mechanism that may be harmful. The health effects of repeated exposure to these chemicals are not yet clear.
- There is animal research which shows that nicotine exposure may cause changes in the brain that make other drugs more rewarding. If this is true in humans, as some experts believe, it would mean that using nicotine in any form would increase the risk of other drug use and for addiction.
- Some research suggests that e-cigarette use may serve as a “gateway” or introductory product for youth to try other tobacco products, including regular cigarettes, which are known to cause disease and lead to early death. A recent study showed that students who have used e-cigarettes by the time they start 9th grade are more likely than others to start smoking traditional cigarettes and other smoked tobacco products within the next year.¹⁰
- The liquid in e-cigarettes can cause nicotine poisoning if someone drinks, sniffs, or touches it. Recently there has been a surge of poisoning cases in children under age 5. There is also concern for users changing cartridges and for pets.
- Some research shows that secondhand e-cig vapor pollutes the air quality with particles that could harm the lungs and heart.¹¹
- Some research suggests that certain brands of e-cigs contain metals like nickel and chromium, possibly coming from the heating of coils.¹²

Regulation of E-cigarettes

Yes. The U.S. Food and Drug Administration (FDA) announced in 2016 that the FDA will now regulate the sales of e-cigarettes, hookah tobacco, and cigars. Therefore:

- It is now illegal to sell e-cigarettes, hookah tobacco, or cigars in person or online to anyone under age 18.
- Buyers have to show their photo ID to purchase e-cigarettes, hookah tobacco, or cigars, verifying that they are 18 years or older.
- These products cannot be sold in vending machines (unless in an adult-only facility).
- It is illegal to hand out free samples.

FDA regulation also means that the Federal government will now have a lot more information about what is in e-cigarettes, the safety or harms of the ingredients, how they are made, and what risks need to be communicated to the public (for example, on health warnings on the product and in advertisements). They will also be able to stop manufacturers from making statements about their products that are not scientifically proven.

Regulation does not mean that e-cigarettes are necessarily safe for all adults to use, or that all of the health claims currently being made in advertisements by manufactures are true. *But it does mean that e-cigarettes, hookah tobacco, and cigars now have to follow the same type of rules as cigarette manufacturers.*

¹⁰ Rigotti NA. e-Cigarette use and subsequent tobacco use by adolescents: new evidence about a potential risk of e-cigarettes. *JAMA*. 2015;314(7):673-674.

¹¹ Schober W, Szendrei K, Matzen W, et al. Use of electronic cigarettes (e-cigarettes) impairs indoor air quality and increases FeNO levels of e-cigarette consumers. *International Journal of Hygiene and Environmental Health*. 2014; 217:628-637.

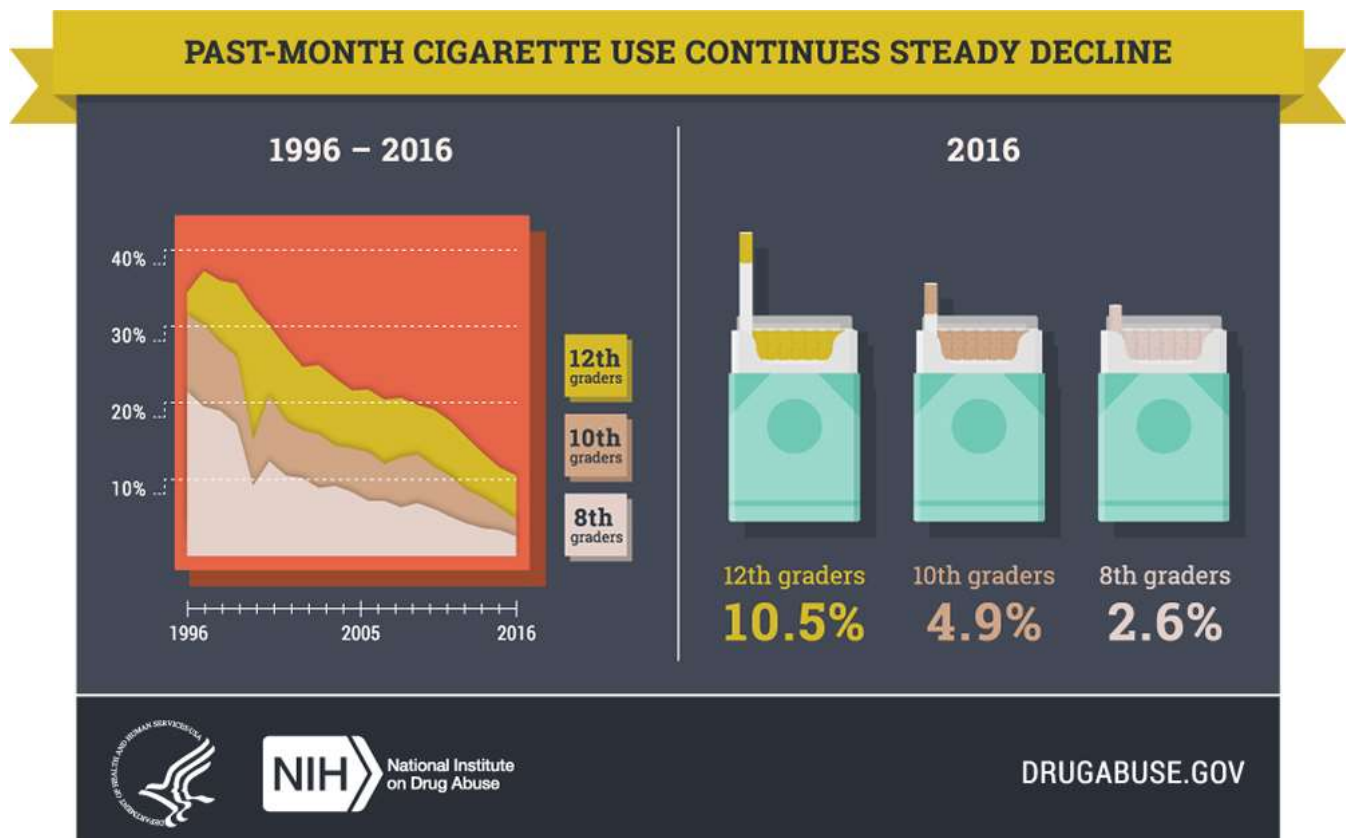
¹² Hess CA, Olmedo P, Goessler W, Cohen E, Rule AM. E-cigarettes as a source of toxic and potentially carcinogenic metals. *Environmental Research*. 2017;152:221-221.

How many teens use tobacco and nicotine products?

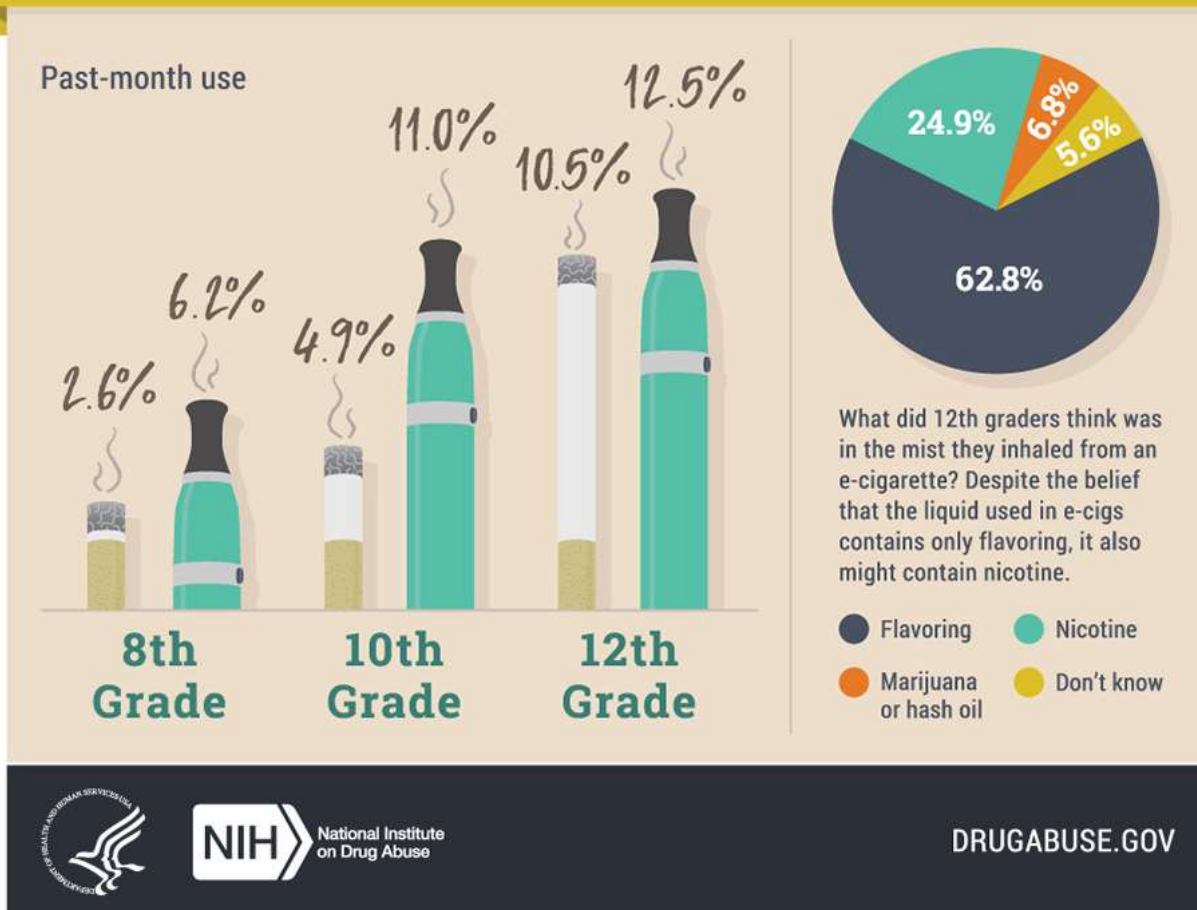
Smoking and smokeless tobacco use generally start during the teen years. Among people who use tobacco:

- Each day, nearly 3,200 people younger than 18 years of age smoke their first cigarette.¹³
- Every day, an estimated 2,100 youth and young adults who have been occasional smokers become daily cigarette smokers.¹⁴
- If smoking continues at the current rate among youth in this country, 5.6 million of today's Americans under the age of 18 - or about 1 in every 13 young people - could die prematurely (too early) from a smoking-related illness.¹⁵
- E-cigarettes are the most commonly used form of tobacco among youth in the United States.
- Young people who use e-cigs or smokeless tobacco may be more likely to also become smokers.^{16,17}
- Using smokeless tobacco remains a mostly male behavior. About 490,000 teens ages 12 to 17 are current smokeless tobacco users. For every 100 teens who use smokeless tobacco, 85 of them are boys.¹⁸

A survey of teens in the United States shows cigarette smoking is on the decline. That could be in part due to the introduction of e-cigarettes. Teens today are more likely to smoke an e-cigarette than a regular cigarette.¹⁹



TEENS MORE LIKELY TO USE E-CIGARETTES THAN CIGARETTES



Below is a chart showing the percentage of teens who use tobacco and nicotine products:

Monitoring the Future Study: Trends in Prevalence of Various Drugs for 8th Graders, 10th Graders, and 12th Graders; 2016 (in percent)*

Drug	Time Period	8th Graders	10th Graders	12th Graders
Cigarettes (any use)	Lifetime	[9.80]	[17.50]	[28.30]
	Past Month	[2.60]	[4.90]	10.50
	Daily	[0.90]	[1.90]	4.80
	1/2-pack+/day	0.30	[0.60]	1.80
E-cigarettes	Past Month	6.20	11.00	12.50

Drug	Time Period	8th Graders	10th Graders	12th Graders
Smokeless Tobacco	Lifetime	6.90	10.20	14.20
	Past Month	2.50	3.50	6.60
	Daily	0.60	1.00	2.70

* Data in brackets indicate statistically significant change from the previous year.

For more statistics on teen drug abuse, see [NIDA's Monitoring the Future study](#).

¹³ Centers for Disease Control and Prevention. *Smoking and Tobacco Use: Fast Facts*. Atlanta, GA. December 2015. Available at http://www.cdc.gov/tobacco/data_statistics/fact_sheets/fast_facts/index.htm.

¹⁴ Centers for Disease Control and Prevention. *Smoking and Tobacco Use: Fast Facts*. Atlanta, GA. December 2015. Available at http://www.cdc.gov/tobacco/data_statistics/fact_sheets/fast_facts/index.htm.

¹⁵ Centers for Disease Control and Prevention. *Smoking and Tobacco Use: Fast Facts*. Atlanta, GA. December 2015. Available at http://www.cdc.gov/tobacco/data_statistics/fact_sheets/fast_facts/index.htm.

¹⁶ Centers for Disease Control and Prevention. *Smoking and Tobacco Use: Smokeless Tobacco Use in the United States*. Atlanta, GA. July 2016. Available at https://www.cdc.gov/tobacco/data_statistics/fact_sheets/smokeless/use_us/.

¹⁷ Leventhal AM, Stone MD, Andrabi N. Association of e-Cigarette Vaping and Progression to Heavier Patterns of Cigarette Smoking. *JAMA*. 2016; 316(18):1918-1920.

¹⁸ Centers for Disease Control and Prevention. *Smoking and Tobacco Use: Smokeless Tobacco Use in the United States*. Atlanta, GA. July 2016. Available at https://www.cdc.gov/tobacco/data_statistics/fact_sheets/smokeless/use_us/.

¹⁹ National Institute on Drug Abuse. *Monitoring the Future Survey: High School and Youth Trends*. Bethesda, MD. December 2016. Available at <https://www.drugabuse.gov/publications/drugfacts/monitoring-future-survey-high-school-youth-trends>.

What do I do if I want to quit using tobacco and nicotine products?

Treatments can help people who use tobacco products manage these symptoms and improve the likelihood of successfully quitting. For now, teen and young adult smokers who want to quit have good options for help. Find out more at [SmokeFree](#) and [Tips From Former Smokers](#).

Nearly 70% of people who smoke want to quit.²⁰ Most who try to quit on their own [relapse](#) (go back to smoking)—often within a week. Most former smokers have had several failed quit attempts before they finally succeed.

Some people believe e-cigarette products may help smokers lower nicotine cravings while they are trying to quit smoking cigarettes. But, researchers do not yet know if e-cigarettes are truly helpful for people trying to quit. There is also the possibility that they could strengthen the nicotine addiction, which would make quitting more difficult, and they can introduce nicotine to young people who have not yet tried smoking.

If you or someone you know needs more information or is ready to quit, check out these resources:

Teens

- Visit [SmokeFree.gov](#).

Adults

- Call 1-800-QUIT-NOW (1-800-784-8669), a national toll-free number that can help people get the information they need to quit smoking.
- Visit [SmokeFree.gov](#).

²⁰ Centers for Disease Control and Prevention. *Smoking and Tobacco Use: Fast Facts*. Atlanta, GA. December 2015. Available at http://www.cdc.gov/tobacco/data_statistics/fact_sheets/fast_facts/index.htm.

Where can I get more information?

Drug Facts

NIDA:

- [DrugFacts: Cigarettes and Other Tobacco Products](#)
- [DrugFacts: Electronic Cigarettes \(e-Cigarettes\)](#)
- [Mind Over Matter Teaching Guide and Series: Tobacco Addiction](#)
- [Research Report Series: Tobacco/Nicotine](#)

- [Commonly Abused Drugs Chart](#)

Centers for Disease Control and Prevention:

- [Secondhand Smoke \(SHS\) Facts](#)
- [Youth and Tobacco Use](#)

Food and Drug Administration

- [Youth Tobacco Use in the U.S. Infographic \(PDF, 1MB\)](#)
- [Real Cost Campaign](#)
- [Fresh Empire Campaign](#)
- [FDA: Tobacco](#)

Statistics and Trends

NIDA:

- [DrugFacts: High School and Youth Trends](#)

Centers for Disease Control and Prevention

- [Youth Risk Behavior Surveillance System](#) (YRBSS)

Substance Abuse and Mental Health Services Administration:

- [National Survey on Drug Use and Health](#)

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