

# E-Cigarette & Vaping Supplement

## Information and Facts for Educators and Youth

*Part of the exemplary Project ALERT curriculum developed by RAND*

Pamela J. Luna, DrPH, MST

The Project ALERT Team:

Eric R. Pedersen, PhD

Michael J. Woodward

Marylou Gilbert, JD, MA, BSW

Diana Naranjo, MPH



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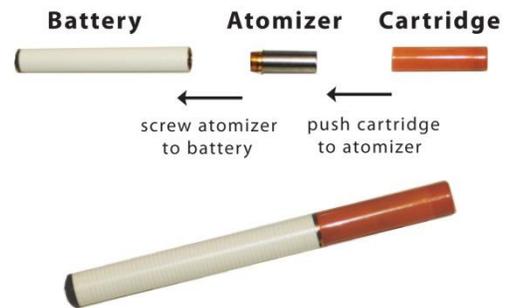
# Electronic Cigarettes & Vaping

## Information and Facts for Educators and Youth

### What Is An Electronic Cigarette?

An electronic cigarette, e-cigarette, or “e-cig,” is what’s known as an *electronic nicotine delivery system* (ENDS). The device uses a coil to heat up an “e-liquid” (also called “e-juice” or “juice”) containing nicotine and other chemicals and turns it into an aerosol or “mist” that you inhale into the lungs. Some of the devices look like a cigarette and others are more customized and are called *e-pens, e-hookahs, mods, or tanks*.

When a person uses these devices, it is referred to as “vaping,” because when the user inhales the heated aerosol and then breathes it out (exhales), it looks like a cloud of vapor. E-cigs are battery-powered, and in some models the user can adjust the temperature of the heating element in the liquid to control things like taste, intensity, and vapor output.



### Why Do Teens “Vape”?

Some teens vape because they think using an e-cig might be safer for their health than regular cigarettes. This has not been proven. Others think that vaping could be a way to reduce or to stop smoking regular cigarettes. In teens, the opposite is true, as vaping may actually lead to smoking regular cigarettes.<sup>1</sup> Some may be influenced by ads, by attractive packaging, and because celebrities might use them. They may like to perform smoke-like tricks with the vapor or they like the various flavors of e-liquid. Other reasons why some teens vape are because they are addicted to nicotine (perhaps from smoking regular cigarettes or chewing tobacco) or because they are using their device to vape marijuana.

### What Is “JUULing”?

The JUUL (pronounced “jewel”) is the most popular brand of e-cigarette. When teens vape with a JUUL, it is called “juuling.” About 3 out of 4 e-cigarette smokers use a JUUL. The devices are unique, because they are much smaller and look very different from typical e-cigarettes. They look like a flash (or USB) drive, which makes them easy to hide from teachers, parents, and law enforcement officers.



JUUL e-cigarette

<sup>1</sup> Dunbar, M., Davis, J., Rodriguez, A., Tucker, J. S., Seelam, R., and D’Amico, E. J. (2018). Disentangling within- and between-person effects of shared risk factors on e-cigarette and cigarette use trajectories from late adolescence to young adulthood. *Nicotine & Tobacco Research*. Epub ahead of print]. doi: 10.1093/ntr/nty179

The liquid used in a JUUL always contains nicotine, and, in fact, can contain twice as much nicotine as other e-cigarettes. A single cartridge or "pod" of JUUL juice has the same amount of nicotine as an entire pack of regular cigarettes, or the same as about 200 puffs of regular cigarettes. The JUUL also delivers nicotine to the bloodstream much faster than other e-cigs. For these reasons, using a JUUL can greatly speed up the process of becoming addicted to nicotine.

## How Do Teens Use E-Cigs?

Inhaling with an e-cigarette is similar to inhaling with a regular cigarette. The difference is that when the user puts the device to their lips and inhales, a heating coil is activated which turns the vaporizing fluids into an aerosol or mist, allowing the lungs to breathe in a variety of chemicals, including highly addictive nicotine, and exhale "vapor." Some models are disposable after normal use over a short period of time. Others are reusable and must be regularly re-filled with liquid nicotine. With the costs to purchase the device itself, replacement parts and batteries, and the vaporizing fluid, vaping can be an expensive habit that can easily add up to about \$850 per year for a regular user.

## Are E-Cigs Legal for Teens?

In most states, it is illegal to purchase or use e-cigs (or regular cigarettes) if you are under 18. However, in many cities and counties, such as Los Angeles County and New York City, state and local officials have raised the legal age to 21, and a few areas have set the legal age at 19. For this reason, many places that carry e-cigarettes, parts, and fluids will not sell to minors.

## Where Do Teens Use E-Cigs?

Many cities do not allow e-cigs to be used in public places and they often fall under the same local laws that restrict the use of tobacco. This is due to concerns about the health effects, not only for the person using these devices, but also for others who are nearby (the issue of second-hand smoke). Schools, movie theaters, sporting events, airplanes, theme parks, and many other public places where teens hang out have banned their use. E-cigarette use usually occurs in private residences and social events.

## Why Is It Dangerous To Use E-Cigs?

E-cigarette fluid contains nicotine, which is a highly-addictive drug, producing cravings similar in intensity to drugs like heroin and cocaine. When they were first introduced, e-cigs were not regulated by the U.S. Food and Drug Administration (FDA). This meant that the amount of nicotine they contained was (and still is) very different, depending on the brand. Users haven't really known the actual doses of nicotine they've been getting, and high doses of drugs like nicotine can speed up the process of addiction. This may start to change, since, in 2016, the FDA started to regulate e-cigarettes in the same way they regulate traditional cigarettes. In 2018, the FDA began investigating the makers of JUUL. With their higher levels of addictive nicotine, using a JUUL can be much more dangerous to your health than other brands of e-cigarettes.

Many teens that use e-cigarettes admit that they had never used traditional cigarettes. One concern is that teens are more likely to smoke regular cigarettes once they become addicted to e-cigs in order to continue receiving their nicotine fix. Although not everyone who uses e-cigarettes will become addicted right away, it is likely to happen, especially with repeated use. This creates risks for healthy teen brain development, which is not complete until around age 25. Nicotine also increases heart rate and blood pressure, causes lung irritation, and can make asthma worse.

E-cigarette liquids contain cancer-causing and other toxic chemicals, including formaldehyde, arsenic, aluminum, and lead. Inhaling these chemicals deep into the lungs is very risky. These chemicals can hurt the stomach lining and cause birth defects and reproductive harm over time.



Manufacturers are specifically targeting teens. They combine liquid nicotine with chemical flavorings such as bubble-gum, cherry, and chocolate, making e-cigs appealing to youth and children. Problems with how the devices work are also a concern. Research shows that the nicotine liquid containers can leak. They are also not required to be child-proof, and if a child is exposed to the liquid through the mouth, skin, or eyes, it can poison them. Even a little exposure to the nicotine

liquid can cause death in young children. Some users have also reported that their devices have exploded without warning.

## Important Questions Answered

### ***I have heard that e-cigarettes will help people to quit smoking regular cigarettes.***

There is not much research on this topic. Some studies have shown that after a short time from switching from traditional cigarettes to e-cigarettes, a person actually begins to use both traditional cigarettes and e-cigarettes, which introduces even more nicotine into their system. Other studies have looked at e-cigarettes as a way for *adults* to quit smoking, but there is no research proving that e-cigs help teens quit smoking. In fact, some studies show the opposite effect in teens, and that when they use e-cigarettes, they are more likely to start smoking regular cigarettes.

### ***Isn't vaping better for you than smoking cigarettes?***

Neither is a good choice. Both contain nicotine, which is addictive, both come with serious health risks, and both cost a lot of money. And some studies show that once you begin to vape you have a much greater chance of using regular cigarettes, and taking on all the risks associated with traditional smoking.

### ***There are lots of ads and information about vaping. Who should I believe?***

The cigarette and vaping industries are big businesses. Most e-cigarette manufacturers are now owned by the big tobacco companies and they will do everything they can to sell their products. Like anything that has to do with your health and well-being, it's important to educate yourself with current and reliable information. Ask yourself, "Does this person or organization have the experience and authority to make these claims? Do they benefit financially from the product that is being sold? Do they have my best interests in mind?" Be wise about your health, and don't automatically accept what you read and hear—check the facts. You can begin with our list of research studies below. Other trustworthy sources for information are the [Centers for Disease Control and Prevention](#) (CDC) and the [National Institute on Drug Abuse \(NIDA\)](#).

### ***How come there are ads on the Internet and in magazines for e-cigarettes?***

When e-cigs first became available, there wasn't much research available about their safety. Up until recently, companies have been allowed to advertise their products without restrictions because the products have not been closely regulated by the U.S. Food and Drug Administration (FDA). Traditional cigarettes are closely regulated by the FDA, and TV advertising for them has been banned for several decades. Magazine ads for both tobacco cigarettes and e-cigarettes are allowed.

The rules are changing. In 2016, the FDA began to more thoroughly regulate all tobacco products, including vaporizers, vape pens, hookah pens, e-cigarettes, e-pipes, and all other ENDS products. They now regulate the manufacturing, importing, packaging, labeling, advertising, promotion, sale, and distribution of ENDS devices.

As time goes on, more reliable information will become available about the harmful effects of these products. In the meantime, we already have enough information to conclude that the choice to vape comes with serious health risks.

### ***I heard that a lot of teens are using e-cigarettes?***

There has been an increase in the number of teens who have tried e-cigarettes in the past few years. This is a concern because of the possibility of becoming addicted to nicotine, and because other harmful chemicals in e-cigs can cause health problems. It is also very common for teens that vape to end up smoking regular cigarettes 1 year later. This exposes teens to all the health risks that come with tobacco and more nicotine.

However, most teens do not use e-cigs or regular cigarettes. In fact, a recent survey of about 15,000 8th graders found that about 82% had never used an e-cig in the past year.

### ***What if my friends are vaping?***

Although most teens and adults do not use e-cigarettes, you may know someone who does. If you hang around people who use drugs, it increases the likelihood that you will use too, maybe due to the pressure to fit in with others who use. Also, others may think you use e-cigarettes if you hang out with people who use them, and your reputation could be affected. It takes courage to resist the pressure to vape or use other drugs when you are around others who are using. You may even find that you prefer to hang out with those who are not using and who have a healthy lifestyle.

Remember that it is *not up to you* to convince others to stop vaping or using other drugs; however, it is *up to you* to decide to stay healthy and drug-free.

## Resources

See more information at:

- [https://www.aafp.org/dam/AAFP/documents/patient\\_care/tobacco/juuling-fact-sheet-patient.pdf](https://www.aafp.org/dam/AAFP/documents/patient_care/tobacco/juuling-fact-sheet-patient.pdf)
- [www.drugabuse.gov/publications/drugfacts/electronic-cigarettes-e-cigarettes](http://www.drugabuse.gov/publications/drugfacts/electronic-cigarettes-e-cigarettes)
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- [The Center for Disease Control's Tobacco Information and Source Page, put out by the Office on Smoking and Health](http://www.cdc.gov/tobacco/tobacco_information_and_source_page)
- <http://www.tobacco.org>
- <https://www.fda.gov/TobaccoProducts/Labeling/RulesRegulationsGuidance/ucm394909.htm>

Sources and further reading:

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