What You Need to Know And How to Talk With Your Kids About Vaping

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Where families find answers

Introduction

Although it has been around for over a decade, vaping's popularity exploded in 2017, taking many families, schools and healthcare providers by surprise. Vaping, or Juuling as it is often referred to by teens and young adults (named after a popular vape device called JUUL), is the inhaling and exhaling of an aerosol produced by using a vape device.

According to the University of Michigan's 2017 Monitoring the Future study, nearly 1 in 3 high school seniors tried vaping in the past year. With advertising geared toward teens and young adults, brightly colored vape pens and thousands of flavors to choose from, the expectation is that growth will continue. Some estimate that the market will be worth over $60 billion by 2025.

For every story or article touting the benefits of vaping, there are an equal number raising concerns about the risks of vaping, especially for teens and young adults. **This guide is intended to help you understand what vaping is, its appeal to youth and what research has to say about both the risks and unknowns, due to the lack of long-term vaping studies.** We've identified some signs to look for and what to do if you are concerned that your child may try or actually is vaping. Lastly, we offer some advice on what to say when talking with your child about vaping.

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Teen using a JUUL

Nearly 1 in 3 high school seniors tried vaping in the past year.

Monitoring the Future, 2017

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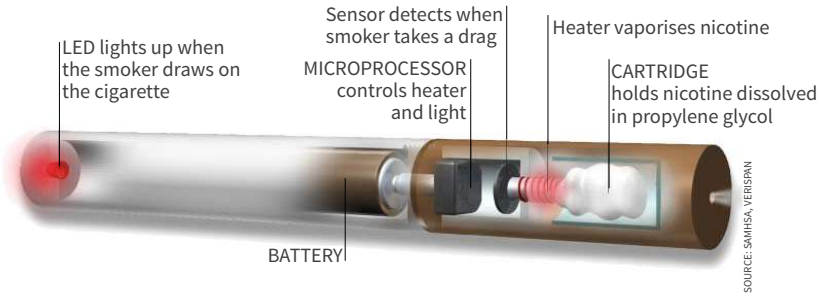
What is Vaping?

Vaping is the act of inhaling and exhaling aerosol or vapor produced by a vape device. Because of the rise in popularity of JUUL, a specific type of vape device, many teens and young adults use the term "JUULING" (pronounced Jeweling), instead of vaping.

How Does Vaping Work?

Vape devices, known as *e-cigs, e-hookahs, mods, vape pens, vapes, tank systems* and *Juuls,* contain 4 basic components: a cartridge or a tank to hold e-liquid (or e-juice/vape sauce), a heating element known as an atomizer, a battery and a mouthpiece to inhale.



A sensor detects when a person is trying to inhale. This triggers the battery to supply electricity to the coil of wire or the atomizer. The heat given off by the coil is transferred to the e-liquid, which can only take so much energy before it's vaporized, and this is what users inhale. While the output of the devices may look like smoke, it is actually vapor.

What Do Vape Devices Look Like?

Some vape devices look like regular cigarettes, cigars or pipes while others resemble USB sticks and other everyday objects like a guitar pick. Larger devices such as tank systems, or "mods," do not look like other tobacco products. Instead, they look more like a small cellphone. Some devices can be thrown away, while others can be reused by charging the device on the USB port of a computer or elsewhere and replacing the e-liquid, either by filling the chamber or using a self-contained pod.

What Is Being Vaped?

Although many substances can be vaped, three are most common: flavored e-liquids, flavored e-liquids with nicotine, and marijuana. The e-liquids come

Vape devices can look like regular cigarettes, cigars or pipes, while others resemble USB sticks, guitar picks and a small cellphone.

Vape pens generally are available for $20 and up. Current pricing for the JUUL starter kit is $49.99, which includes the device, a charger, and 4 flavored pods.

in small bottles or in pre-filled pods or cartridges. Pods are the component that contain the e-liquid.

1. **Flavored e-liquids** come in thousands of flavors, including bubble gum, cotton candy and grape, but also hot dog, banana bread and King Crab legs.

2. **Flavored e-liquids may also contain different levels of nicotine**, ranging from 2mg/ml to 59mg/ml. One of the more popular vape devices, Juul, contains 59mg/ml of nicotine in each pod. Each Juul pod is equal to one pack of cigarettes.

3. **Marijuana** can be vaped in both the leaf form or using THC and/or CBD oil. THC is the psychoactive compound in marijuana that creates a sense of being high.

What Is Vaping's Appeal?

Although vaping was intended to be a less harmful option for adult smokers, teens and young adults have embraced it for several reasons. First and foremost is a sense of curiosity, followed by the many kid-oriented flavors offered.

It's not uncommon for kids to try out each other's vapes at parties to check out flavors like German Chocolate Cake or Banana Split and then post vaping videos on social media.

Teens are increasingly becoming interested in "cloud competitions," in which adults compete to perform the best vaping tricks. In addition to being featured on social media, cloud competitions are becoming a regular feature at local vape shops with some offering thousands of dollars in prize money.

Vaping tricks are another major attraction of vaping.

Boredom is another reason cited by many teens. It can be habit-forming, much in the same way teens check their phones in free moments. It's easy to take a quick puff.

Flavors are one of the biggest attractions for vaping.

Each Juul pod contains 59 mg/ml of nicotine, **equivalent to one pack of cigarettes**.

Cloud competitions are becoming a regular feature at local vape shops with some offering **thousands of dollars in prize money**.

Is Vaping Safe?

The short answer is that vaping isn't considered safe for teens and young adults, especially since their brains are still developing. Vaping is a relatively new phenomenon. As a result, long-term studies that examine its impact on teen and young adult health and behavior have yet to be concluded.

The most comprehensive research to date is a report commissioned by Congress from the National Academies of Sciences, Engineering and Medicine. Released in January 2018, the report looked at exposure to nicotine and other toxic substances, dependence, harm reduction, smoking risks, cancer and more. Below is a summary of their findings, based on "conclusive" or "substantial" evidence.

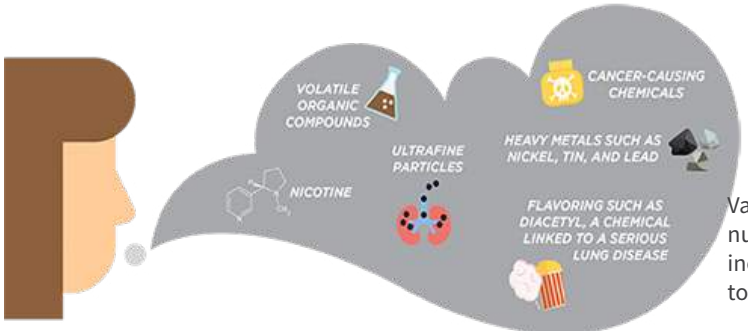
Is vaping safe? Watch this short video from the CDC.

Vaping isn't considered safe for teens and young adults, especially since their brains are still developing.

Exposure to Nicotine

Nicotine is a stimulant that activates the nervous system to prepare the body for physical and mental activity. It causes one's breathing to become more rapid and shallow, as well as increases heart rate and blood pressure. The committee reported that nicotine exposure from e-cigarettes varies considerably depending upon the contents of the e-liquid, the type of device that's used and how it is operated.

Nicotine exposure in teens and young adults is worrisome because nicotine can be highly addictive. Due to the fact that the brain is undergoing massive changes during adolescence through the mid- to late 20's, nicotine use may rewire the brain, making it easier to get hooked on other substances and contribute to problems with concentration, learning and impulse control.



Vapor can contain numerous substances including some known to be harmful to health.

Exposure to Toxic Substances

The report highlights that most e-cigarettes contain and release a number of potentially toxic substances, although exposure to these substances is considerably lower than those found in regular cigarettes.

Dependence

Dependence develops when the body adapts to repeated exposure to vaping. When a person stops vaping, he or she can experience withdrawal symptoms, although likely not as intense as those associated with conventional cigarette smoking. The Congressional study reported that e-cigarettes may result in dependence and showed "moderate evidence" that differences in e-cigarette products – including nicotine concentration, flavorings, device type and brand – play a key role in determining the risk and severity of dependence.

Harm Reduction

Replacing e-cigarettes for conventional cigarettes reduces users' exposure to the many harmful substances in combustible cigarettes. Recently, however, concerns have surfaced that rather than decreasing cigarette use, some smokers are using both. They are vaping when they can't smoke.

Smoking Risks

There is worry that teens and young adults who use e-cigarettes will increase their risk of smoking. Teens and young adults who vape are almost 4 times as likely as their non-vaping peers to begin smoking traditional cigarettes, according to a review published online in JAMA Pediatrics.

Injuries and Poisonings

Vape devices, especially those with poor quality batteries, or that have been stored improperly or modified by the user, can explode resulting in burns and other injuries. Exposure to e-liquids from drinking, either on purpose or by accident, eye or skin contact, or injection can result in seizures, brain injury due to lack of oxygen, vomiting, problems related to lactic acid buildup in the body or death.

Cancer and Respiratory Effects

No data was cited as to whether or not vaping causes cancer or respiratory diseases. Long-term studies are needed as these diseases take years to develop. There is some concern though that vaping can increase coughing and wheezing in teens and may exacerbate asthma.

Concerns have surfaced that rather than decreasing cigarette use, some smokers are using both—**vaping when they can't smoke.**

Marijuana and Vaping

Although the committee's report did not cover marijuana vaping, it is also of concern for adolescents and young adults. Selling equipment to vape marijuana in dab (concentrated wax-like substance) or oil or leaf form is a booming business with many new players.

Dab, a concentrated form of marijuana with dab tool

For example, Pax Labs, formerly Ploom, was founded in 2007 and is a relatively well-known brand for vaping dry leaf marijuana. The company has introduced the Pax 3, which they describe as the "Apple iPhone" of vaporizers as it allows you to vape both dry leaf and wax concentrates. It includes a free Android or iOS app to control temperature, play free games, manage firmware and lock the device.

Vape Pen used with THC oil

In California, a company called EAZE sells disposable all-in-one marijuana vape pens and cartridges. Flavors include Blueberry Kush, Lemon OG and Mango Passion Fruit. They market these as wellness products with advertising that reads, "Hello Marijuana, Goodbye Insomnia" or "Hello Marijuana, Goodbye Hangover."

Juul can also be used to vape marijuana; however, it should be noted that as of now, Juul does not offer marijuana products. The device has to be hacked in order to use it with THC oils. There are also companies making pods that fit a Juul, so a THC oil pod may be in the future.

According to the CDC, marijuana use may have long-lasting or permanent effects on the developing adolescent brain. **Negative effects include:**

- Difficulty with critical thinking skills like attention, problem-solving and memory
- Impaired reaction time and coordination, especially as it relates to driving
- Decline in school performance
- Increased risk of mental health issues including depression or anxiety, and in some cases, psychosis where there is a family history

Research also shows that about 1 in 6 teens who repeatedly use marijuana can become addicted, as compared to 1 in 9 adults. Further, kids who vape are more likely to use combustible cigarettes and try marijuana than their non-vaping peers.

How Is Vaping Regulated?

Vaping is illegal for anyone under the age of 18, although in some states the age restriction is 21. Up until 2016, there was little if any regulation of the vaping industry. At that time, the Food and Drug Administration (FDA) introduced the "Deeming Rule," which placed oversight of vaping products with the organization. In addition to the requirement to check ID, merchants are prohibited from giving away free samples, using vending machines (unless in establishments that don't allow minors) and claiming that products are safer alternatives to other tobacco products. As of 2018, nicotine warning labels must be on vaping products and they must list all ingredients.

Vaping is illegal for anyone under the age of 18, and in some states under 21.

What Should Parents Know

What Are the Signs of Vaping?

Although sometimes more subtle, there are clues to look for to see if your child is vaping:

Equipment	You may find devices that look like flash drives, e-juice bottles, pods (that contain e-juice) or product packaging. Aside from leaf marijuana, gel jars that contain dabs, small tools to scoop dabs and cartridges that contain THC oil are signs of vaping marijuana.
Online purchases / packages in the mail / store purchases	Be on the lookout for purchases made online and charged to your credit card or unusual packages that arrive in the mail. Kids also buy them at big box stores, gas stations or from other friends.
Scent	While the smell from vaping is faint, you may catch a whiff of a flavoring where there appears to be no other source. For example, if you smell bubble gum or chocolate cake, take note.
Increased thirst / nose bleeds	Some of the chemicals used in e-juices have the effect of drying out the mouth and nasal passages. As a result, some kids drink more liquids or seem more prone to nose bleeds.
Decreased caffeine use	Some teens and young adults develop a sensitivity to caffeine. If your child drank caffeinated energy drinks and quits, it may be as a result of vaping.
Vaping lingo	You may see vape lingo in text messages such as "atty" for an atomizer, "VG" for vegetable glycerin found in e-juice or "sauce" referring to e-juice. Kids often brag about their vaping exploits on social media. Look for pictures on Instagram or YouTube or check their Twitter accounts.
Appearance and behavior changes	Just like smoking, vaping marijuana can result in bloodshot eyes, dry mouth and thirst, increased appetite and shifts in behavior and mood. Sometimes, there is a noticeable change in friends and a decrease in activities that were once enjoyed.

What Can Parents Do to Safeguard Against Vaping?

Be equipped with the facts	Reading through this resource, perhaps more than once, will help you understand the vaping landscape. It's important to be familiar with vape devices (especially JUUL due to its popularity), what's being vaped (i.e. flavorings, nicotine and/or marijuana) and the associated risks.
Have conversations	Look for opportunities to discuss vaping with your child. Opportunities may present themselves in numerous ways: letters from the school about vaping policies, advertisements, seeing someone vaping on TV, walking by someone who creates a huge cloud on the street or passing a vape shop. Be ready to listen rather than give a lecture. Try using open-ended questions to get the conversation going such as, "What do you think about vaping?"
Try to understand why	Most kids start vaping due to curiosity, the flavors, cloud tricks, wanting to fit in, etc. Over time, vaping can become habitual as it is used to address other needs such as relief from boredom and anxiety. Some kids also become addicted to nicotine and continue vaping to avoid withdrawal symptoms. It helps to understand why your child is vaping by asking questions like: "What do you enjoy about vaping?" or "How does vaping make you feel?" Answers to these questions highlight your child's needs that can be addressed in a healthier way.
Convey your expectations	Set clear expectations. Express your understanding of the risks, but also why a person might want to vape. Share why you don't want your child vaping (i.e. concern about toxins, nicotine, marijuana, unknown health risks, injuries due to batteries, gateway to cigarette smoking). If you choose to set consequences, be sure to follow through, while reinforcing healthier choices.
Role play refusal skills	If you have a younger teen, it may help to teach your child refusal skills. After all, if your child is in middle school or older, they are likely to be in social situations where they are offered an opportunity to try a flavor. You might ask, "What would you say if someone offered you their vape?" See how your child would handle the situation. Practicing something along the lines of "No thanks, I'm not interested," said with direct eye contact and assertive body language can help your child be prepared.
Be a good role model	Set a positive example by being vape and tobacco-free. If you do vape, keep your equipment and supplies secured.

What to Say When Your Teen Asks:

Q: Isn't vaping safer than smoking cigarettes?

Your child is exposed to less toxic substances when vaping (as compared to smoking), but there are still significant concerns. Their lungs are exposed to fine particles, metals, other toxins and nicotine which can harm them. You may use the example that, "Driving 90 miles an hour with a seat belt on is safer than without one, but neither is safe. The same goes for vaping. It may be a safer alternative than smoking cigarettes, but neither one is without harm."

Q: They are just flavorings, so what's the big deal?

Flavorings are common and considered safe when added to food and eaten, but relatively little is known about the long-term effects on your lungs. For example, there is a chemical called diacetyl that is used as a butter flavoring for candy, yogurt and popcorn, among other foods, and has been found in several e-juices. How these additives interact with the stomach is different than how it may affect your lungs. Diacetyl has been linked to "popcorn lung" which results in scarred lung tissue in workers who have inhaled diacetyl in popcorn factories. While there are there are no known cases of popcorn lung in people who vape, it typically takes years to develop.

Also, e-liquids contain more than just flavorings. Whether it contains nicotine or not, teens also may be taking in fine particles, metals and other toxins. In some cases, teens have vaped e-liquids thinking it didn't contain nicotine, when in fact it did. Deliberate or accidental exposure to e-liquids, whether from drinking, eye or skin contact or injecting it, can be severe, causing seizures or even death.

Q: Everyone is doing it, so why do you care?

You can say, "I know you may say this because of what you see in school or even on social media, but the real fact of the matter is that the majority of seniors (and more in lower grades) aren't vaping. While it may be a popular activity for some kids, it doesn't mean that it's safe."

Q: I don't know what to say when other kids offer their vape to me to try.

You can say, "Let's figure out what you may be comfortable saying. It's best to be direct and use assertive body language (i.e., direct eye contact with strong posture) and to say something like, 'No thanks, I'm not interested,' or 'You guys can, but I don't want to.'"

Another strategy for younger teens is to use an "X" policy. Whenever your child is in an uncomfortable situation and wants an easy out, they can text an "X." You can respond by texting back to say that something has come up and they must head home immediately, or you will pick them up.

Q: *You smoke, so why shouldn't I?*

If you've tried to quit, respond by saying "You're right, smoking is unhealthy and I've tried to quit and I wish I had never started. I don't want you to start an unhealthy habit and struggle the way I have to stop."

Q: *It's legal, so why worry?*

Vaping is not legal for anyone under 18 (and at 21 in some states). Many things are legal, but that doesn't mean they are safe or harmless.

Alcohol is an example of a legal substance, but can result in DUIs, car accidents and major health problems, including liver disease. Similarly, cigarettes are legal, but are highly addictive and proven to cause birth defects and cancer.

Q: *I'm just doing it once in a while and nothing bad has happened.*

Respond by asking what your child's experience has been with vaping and pose a question like, "What keeps you from vaping more often?" This isn't to suggest you condone or approve of vaping, but rather to get a sense of what the barriers are to your child's use that you may be able to reinforce.

These open-ended questions can help you understand what your child sees as the pros, and potentially the cons, of vaping. Again, being clear about your expectations is helpful, in addition to reinforcing healthy behaviors that compete with vaping.

Resources

Where can I find more information on vaping?

- Check out the U.S. Surgeon General's Report on E-Cigarette Use Among Youth and Young Adults.
- Help for your child: If your child vapes or smokes, visit teen.smokefree.gov for resources to help them quit including the quitSTART app and a text messaging program (Text "Quit" to 47848).

- You can also talk to an expert by calling 800-QUIT-NOW (800-784-8669). **Your child may respond to your concerns about vaping if they hear it from another trusted adult or medical professional.**

Connect with a Parent Helpline Specialist

Call 1-855-DRUGFREE

Visit drugfree.org/helpline

Text a question to **55753**

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