

# the 101 on ^ e-Cigarettes



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Vaping is becoming an increasing epidemic among teens. In 2018, e-cigarette use nearly doubled in high school students.

## What is vaping?

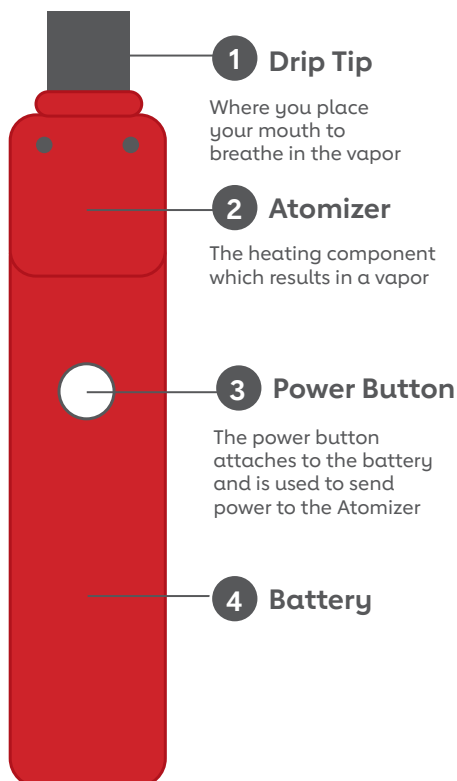
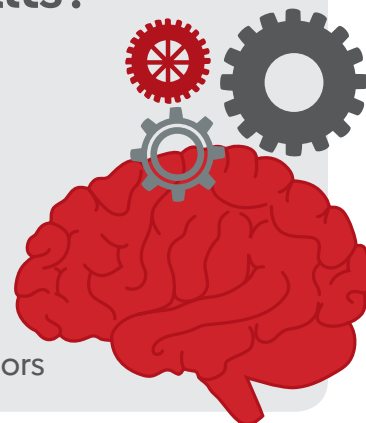
Vaping is the **act of inhaling and exhaling the aerosol, often referred to as vapor**, which is produced by an e-cigarette or similar device. The term is used because e-cigarettes do not produce tobacco smoke, but rather an aerosol, **often mistaken for water vapor, that actually consists of fine particles. Many of these particles contain varying amounts of toxic chemicals, which have been linked to heart and respiratory diseases and cancer.**

## What is an e-cigarette?

Electronic cigarettes (e-cigarettes) are **battery-powered devices that can deliver nicotine and flavorings to the user in the form of an aerosol.** Most have a battery, a heating element, and a place to hold a liquid or nicotine salts. Flavors that make e-cigarettes so appealing can have toxic effects themselves, although they are GRAS (generally regarded as safe) when ingested in food or drinks.

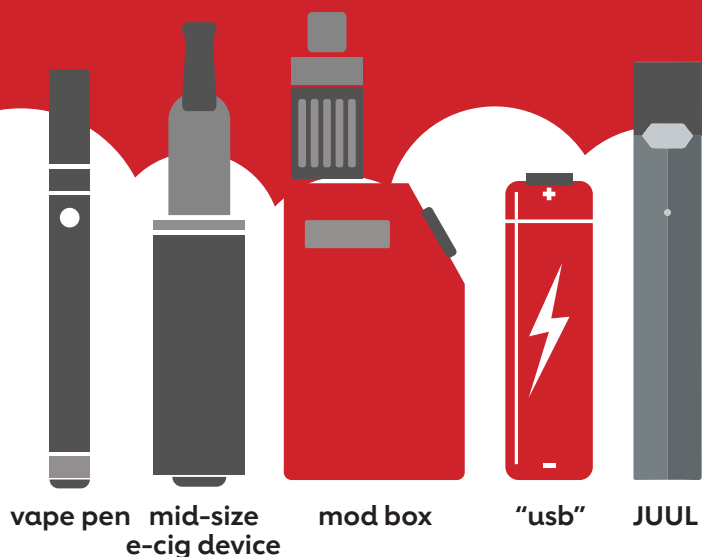
## Why are e-cigarettes unsafe for kids, teens and young adults?

- Nicotine can harm the developing adolescent brain
- e-cigarettes contain nicotine
- Nicotine addiction that occurs with e-cigarette use may lead to transition to use of combustible tobacco products
- Addiction itself, whether to nicotine or other drugs, can drive undesirable behaviors





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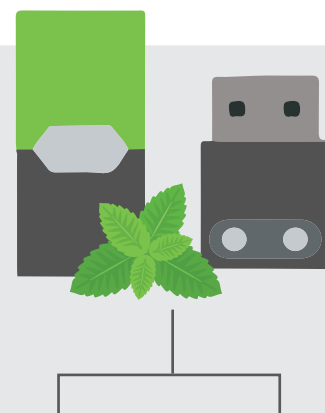
## What do e-cigarettes look like?

E-cigarettes come in a wide variety of shapes and sizes; **mini** (often called cig-a-like), **mid-size, vape pens, vape pod systems like JUUL, e-hookahs, e-cigars, advanced personal vaporizers or mods**; even ones shaped to look like pens and usb drives.

## What Is JUUL?

JUUL is a rapidly growing type of e-cigarette that became available in the US in 2015. It now accounts for about 72 percent of the market share of vaping products in the United States.

- JUUL is particularly appealing to adolescents and young adults because it has a slim design **shaped like a USB flash drive** (which makes it easier to hide).
- It comes in different colors, and a wide variety of flavors, including many that appeal to kids.
- **JUUL does not emit large smoke clouds**, making it optimal for discreet use.
- Not only is nicotine high in JUUL pods, it is present in a **benzoic acid salt** rather than a free base which **increases the rate of nicotine delivery** and decreases the harsh sensation in the mouth and throat.



The JUUL nicotine refill ("pods") **contain as much nicotine as a pack of 20 regular cigarettes**. Average pod length varies but can last up to 200 puffs.

Noting this unprecedented spike in e-cigarette use in youth, in December 2018, the US Surgeon General issued an advisory for parents, teachers and health professionals about the negative health consequences of e-cigarettes in kids.

## What can parents do?

- Do not use any tobacco products
- **Talk with your kids about the dangers of smoking and the importance of avoiding any tobacco use** (conventional cigarettes or e-cigarettes)
- Educate your kids that **e-cigarettes contain nicotine, a HIGHLY addictive substance**
- **Advocate for comprehensive tobacco prevention policies** (that include e-cigarettes)

# More than **5 million** U.S. youth are using e-cigarettes<sup>1</sup>

## How much do you know about the epidemic?

E-cigarettes, also known as “vapes,” are becoming increasingly popular among teens.

In fact, they are the most commonly used tobacco product among both middle and high school students.<sup>9</sup> You may have already seen or heard about students vaping in your school, but it is important to know that certain types of vapes can be used very discreetly.

**SOME TEENS REPORT USING E-CIGARETTES IN SCHOOL BATHROOMS AND EVEN IN THE CLASSROOM.<sup>2</sup>**

Learning more about the different types of e-cigarette products is an important first step in addressing youth vaping.

### DID YOU KNOW:

E-cigarettes come in a variety of shapes and sizes and may not look like a tobacco product, which can make them hard to spot.<sup>2</sup>

Some devices popular among teens — like JUUL and myblu — are as small as a USB flash drive and even look like one.<sup>2,16</sup>

Certain products emit very low amounts of aerosol or “vapor,” which makes them easier to use discreetly than combustible cigarettes.<sup>9,11</sup>

Most e-cigarettes contain nicotine, the same highly addictive drug in cigarettes. Some e-cigarettes<sup>5</sup> may contain as much nicotine as a pack of 20 regular cigarettes.<sup>3</sup>

### A Big Problem... A SMALL DEVICE

In 2019, over

**27%** of high school students

and over

**10%** of middle school students

were using e-cigarettes.<sup>1</sup>



#### CENTER FOR TOBACCO PRODUCTS

Source: Cullen, et al. JAMA 2019

Note: All numbers presented here are estimates.

[www.fda.gov/tobacco](http://www.fda.gov/tobacco)



@FDATobacco



[facebook.com/fda](https://facebook.com/fda)



Many teens have  
**dangerous misperceptions**  
that lead them to believe that vaping is harmless.<sup>9</sup>

## Important facts to share with youth

### Vape aerosol can contain harmful chemicals

Vaping can expose the user's lungs to harmful chemicals like formaldehyde, acrolein, and acetaldehyde, which are known to cause irreversible lung damage.<sup>4,5</sup>

### There can be danger behind the flavor

Vapes get their flavors from chemicals. While these flavorings are safe to eat in food, they're not safe to inhale. Inhaling flavor chemicals can harm your lungs.<sup>6</sup>

Want an example? Some buttery-flavored vapes like caramel contain diacetyl and acetoin. Inhaling diacetyl has been linked to popcorn lung, a lung disease that doesn't have a cure.<sup>6</sup>

### Most vapes contain nicotine, which is highly addictive

Vaping delivers nicotine to the brain in as little as 10 seconds.<sup>7</sup> A teen's brain is still developing, making it more vulnerable to nicotine addiction.<sup>8,14</sup>

Nicotine exposure during the teen years can disrupt normal brain development.<sup>9,14</sup> It may have long-lasting effects, like increased impulsivity and mood disorders.<sup>9,12,13,15</sup>

### Vapers could be inhaling metal particles into their lungs

Vape aerosol could be delivering metal particles like chromium, nickel, lead, tin and aluminum right into your lungs. Some of these metals are toxic.<sup>10,11</sup>



## FDA's Efforts to Curb Youth E-Cigarette Use

FDA is committed to protecting youth from the dangers of e-cigarettes, including cracking down on illegal sales to anyone under 18 and holding retailers and manufacturers accountable for marketing practices.

Also, in addition to our national peer-to-peer public education campaign called "The Real Cost" FDA has joined forces with Scholastic to provide teachers and school administrators with the resources they need to educate their students about e-cigarettes.

Together, we've created a **free lesson plan and research activity** for teachers to educate their students on the health risks of e-cigarette use. Please visit the [Scholastic youth-vaping-risks site](#) to access these resources.

## Quitting Help Is Available

There is an urgent need to share resources with teens who are addicted to e-cigarettes to help them quit. Together with the National Cancer Institute, the FDA has launched a series of web pages to help.

» [Smokefree Teen](#) — If you identify teens using e-cigarettes at school, it is critical to share the resources at Smokefree Teen to help them quit.

## Other Resources

If you know a student who has experienced unexpected health or safety problems related to e-cigarettes, we encourage you to report this incident to FDA through the online [Safety Reporting Portal](#). These reports are confidential and help the FDA identify trends and causes.

To follow recent information on outbreaks linked to e-cigarette use, visit the [FDA](#) and [CDC](#) websites.

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