

# Electronic Cigarette Usage

## Vaping/JUULing

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### What is vaping?

Electronic Cigarettes have taken on many forms and names. Among the most popular names right now are e-cigarettes, vaping, and juuling. It is referred to as vaping because of tiny puffs or clouds of vapor that are produced when using the devices. E-cigarettes are battery powered and deliver nicotine through a liquid (called e-juice or e-liquid), which turns into vapor when using the devices. The liquid comes in many different flavors that appeal to youth. A lot of youth are unaware that the liquid contains nicotine; therefore, many think that vaping is less dangerous than using other tobacco products. The amount of nicotine in the liquid can be the same or more than the amount found in cigarettes. Even being around others who use e-cigarettes and breathing the cloud they exhale can expose youth to nicotine and chemicals that can be dangerous to their health.

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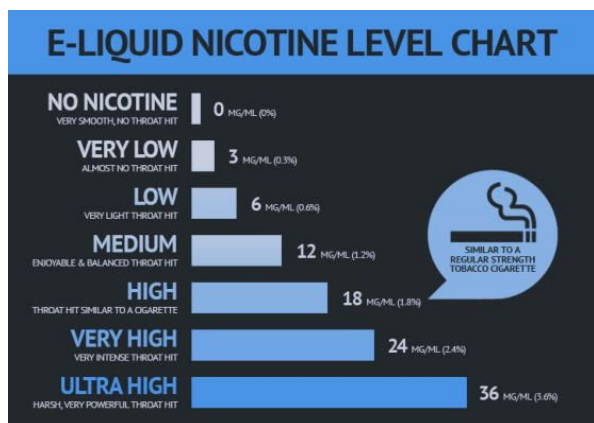
## Juuling

A new type of e-cigarette called "JUUL" is among the most popular. The JUUL is especially popular among youth and young adults due to its sleek and discreet design, its ability to be recharged on a laptop or wall charger within one hour and its cartridge flavors, such as mint, creme brulee, and fruit medley. Students can take a hit of JUUL, blow the small, odorless puff of smoke into their jacket or backpack and continue their school work in a matter of seconds. Compared to other forms of teenage rebellion, juuling is especially dangerous as middle and high school students are unknowingly becoming addicted to nicotine at an alarming rate.

Juuling is now common at teenage hangouts and even at schools. Medical professionals are concerned because JUUL delivers higher concentrations of nicotine than other e-cigarettes. Nicotine is highly addictive, toxic to fetuses and is known to impair brain and lung development if used during adolescence. It is not replacing cigarette smoking but rather encouraging it: A 2017 study found that non-smoking adults were four times more likely to start smoking traditional cigarettes after only 18 months of vaping, which includes "juuling."

According to JUUL Labs, the device uses an internal, regulated heating mechanism that creates an easily inhaled aerosol. This mechanism prevents it from overheating and exploding, which has been a problem for other e-cigarettes. JUUL is easy to use because there are no settings to adjust or control. All that is required is the JUUL and a non-refillable JUUL pod cartridges that click into the top of the JUUL. This liquid is heated and converted into vapors that are inhaled by the user. One of the reason this brand is so popular among youth is that is so easy to use. There is no prior experience or knowledge needed. All they have to do is put the JUUL to their mouth and inhale.

JUUL is different from other e-cigarettes not just because it's easy to use, but also the concentration and contents of its JUUL pods. The e-liquid 5% cartridges contain approximately 40 mg per pod based upon 59 MG/ML at the time of manufacturing. The 3% cartridges contain approximately 23 mg per pod based upon 35 MG/ML. As shown in the chart below, the 3% cartridge is higher than a traditional cigarette. This increases the risk of addiction. A study done by the UK's Royal College of Psychiatrists showed that nicotine is about as addictive as cocaine and even more more addictive than alcohol and barbiturates (anti-anxiety drugs).



<http://www.vaportime.net/about%20e-cigs.htm>

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The impact on the developing brain is also of great concern. Brain imaging studies of adolescents who began smoking at a young age had markedly reduced activity in the prefrontal cortex of the brain, an area critical for a person's cognitive behavior and decision making, leading to increased sensitivity to other drugs and greater impulsivity. The amount of nicotine in one JUUL cartridge is equivalent to a pack of cigarettes. Since teens often use multiple pods in one sitting, they can unknowingly become exposed to unsafe levels of nicotine that can have immediate and long-term health consequences. In 2016, the FDA was given the authority to regulate e-cigarettes such as JUUL, but has allowed e-cigarette manufacturers to postpone their applications for FDA approval until August 2022. Meanwhile, these harmful devices can remain on the market and continue influencing adolescents to become addicted to nicotine.

Another way the JUUL system is different from other e-cigarettes is its patented formula of nicotine. While other brands use a chemically modified form of nicotine called "freebase nicotine", JUULs use "nicotine salts" that more closely resemble the natural structure of nicotine found in tobacco leaves. This makes the nicotine more readily absorbed into the bloodstream and makes the vapor less harsh. Nicotine salts make it easier to inhale more nicotine for longer periods of time.

In addition to this patented formula, JUUL pods contain a greater amount of benzoic acid. They contain 44.8 mg/mL, compared to other e-cigarette brands, which are in the range of 0.2 to 2 mg/mL. According to the Center for Disease Control and Prevention, benzoic acid is known to cause coughs, sore throat, abdominal pain, nausea, and vomiting if exposure is constant, which is the case when using JUUL. This is due to how JUULs utilize the properties of benzoic acid to increase the potency of the nicotine salts in its e-liquid.

The popularity of JUULs among adolescents exposes them to large amounts of nicotine that can have adverse health risks for their physical and emotional development. While JUULs are called e-cigarettes, they look nothing like them. It makes easy for children and teens to secretly use them without a parent, guardian or teacher noticing. This may be just a temporary trend, but if the FDA does not quickly do more to restrict flavors that appeal to adolescents and to educate the public about the risks, it is likely to create an enormous increase in young people addicted to nicotine.

As parents/guardians it is important to talk with kids about the dangers of vaping. Youth see e-cigarettes advertisements, and posts on social media about vaping. Parents should monitor screen time use and talk to their youth about what they may have seen or heard about vaping. Parents can also be role models and set a positive example by being tobacco free. Fillmore Central has policies regarding tobacco use, including e-cigarettes, in both the Student-Parent Activity Handbook and Fillmore Central School Policy.

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## Resources:

<https://truthinitiative.org/news/6-important-facts-about-juul>

[https://e-cigarettes.surgeongeneral.gov/documents/SGR\\_ECig\\_ParentTipSheet\\_508.pdf](https://e-cigarettes.surgeongeneral.gov/documents/SGR_ECig_ParentTipSheet_508.pdf)

<https://catch.org/lessons/catch-my-breath-middle-school-parent-resources>

<https://www.fda.gov/TobaccoProducts/PublicHealthEducation/ProtectingKidsfromTobacco/ucm405173.htm>

<https://www.cdc.gov/vitalsigns/ecigarette-ads/index.html>

<https://truthinitiative.org/news/4-things-parents-need-know-about-juul-and-nicotine-addiction>

<http://www.center4research.org/vaping-safer-smoking-cigarettes-2/>

<https://www.nebraskamed.com/cancer/lung/quit-smoking/dont-be-a-fool-stay-clear-of-the-juul>