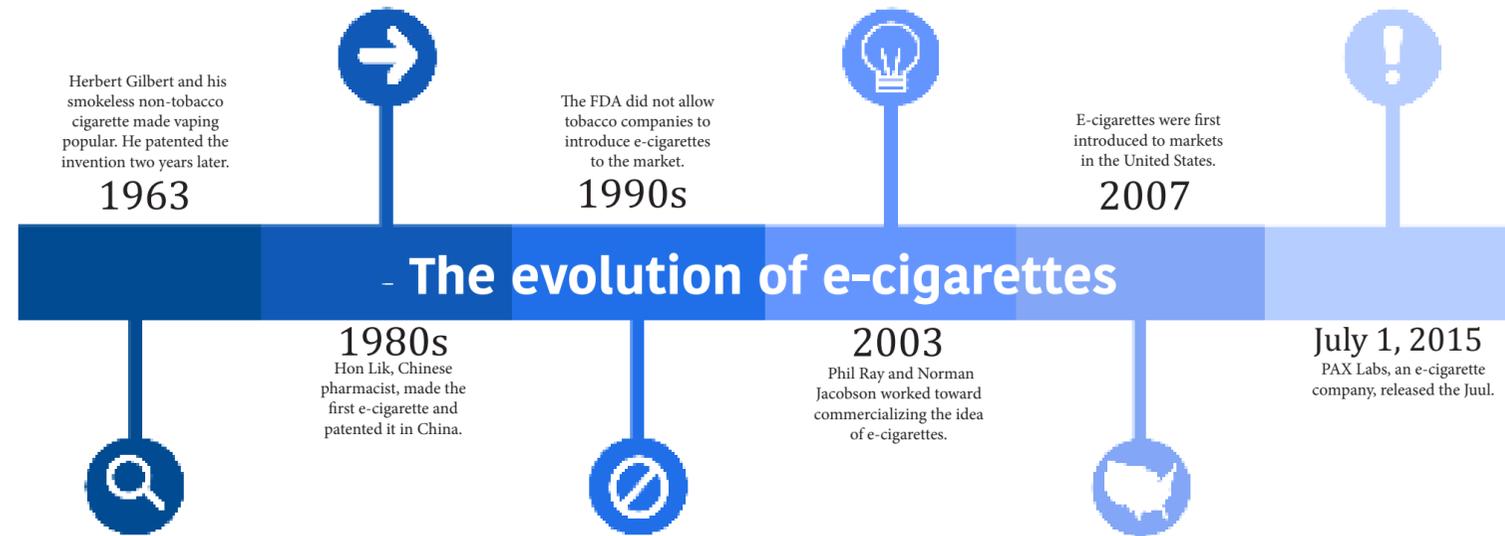
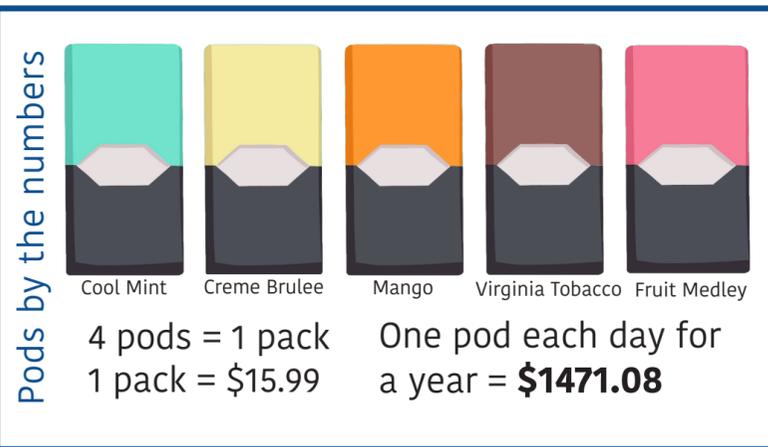


# Addiction in a new form

## Nicotine knowledge:

- \* One Juul pod is equivalent to **200** cigarette puffs.
- \* Over **1 million** JUUL devices have been sold since its release.
- \* Juuls have become the **#2** product in the e-cigarette market.
- \* A Juul startup kit costs **\$49.99**.



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In 1440, Johannes Gutenberg invented the printing press. Three centuries later, the lightbulb followed. The first true automobile hit the roads in 1886. In 2007, Apple released its first iPhone. And, in June 2015, the Juul changed the face of the vaping industry.

Small enough to fit into a wallet and resembling a flash drive, the electronic cigarette produces a vapor that disappears in a matter of seconds. With its increasing popularity, the Juul has invaded malls, sporting events and Ladue classrooms.

"I think there's been very good press about the harmful effects of cigarettes which is why [cigarette use is] decreasing," Missouri Baptist pediatrician Kristen Mennemeier said. "Kids are now using other forms of nicotine which are just as harmful."

Developed by PAX Labs, the Juul differs from other e-cigarettes. It uses nicotine salts, which occur naturally in tobacco, rather than free-base nicotine, which is tobacco in its purest form. PAX Labs is an e-cigarette company with the goal of decreasing the number of cigarette smokers and introducing advanced products that "push the boundaries of vaporization," according to paxvapor.com.

"In a short period of time, we have sold over 1 million Juul devices and become the number two product in the market," PAX Labs CEO Tyler Goldman said according to techcrunch.com.

The nicotine intake comes from small, flavorful pods that users attach to their Juul device. The amount of nicotine in one pod is equivalent to the amount in a full pack of cigarettes.

"Nicotine is a drug," Mennemeier said. "It certainly classifies as a drug based on the fact that it's addictive, and it causes cravings and withdrawal symptoms. If you're addicted to nicotine, you're much more likely to try other forms of drugs and alcohol."

When nicotine enters the human body, it travels to the brain, specifically the

prefrontal cortex. Upon arrival, it releases a molecule called dopamine, which produces a temporary high and a feeling of relaxation. After the feeling wears off, it leaves the user with a chemical need for more, which eventually leads to a strong addiction.

"The brains of teens who smoke or vape may create more receptors to handle the flood of nicotine they have come to expect," Associate Director of Prevention Education for the National Council on Alcohol and Drug Abuse Kelly Wieser said. "As the number of receptors increases, teens will need more nicotine to get the same high. That makes nicotine users seek hit after hit."

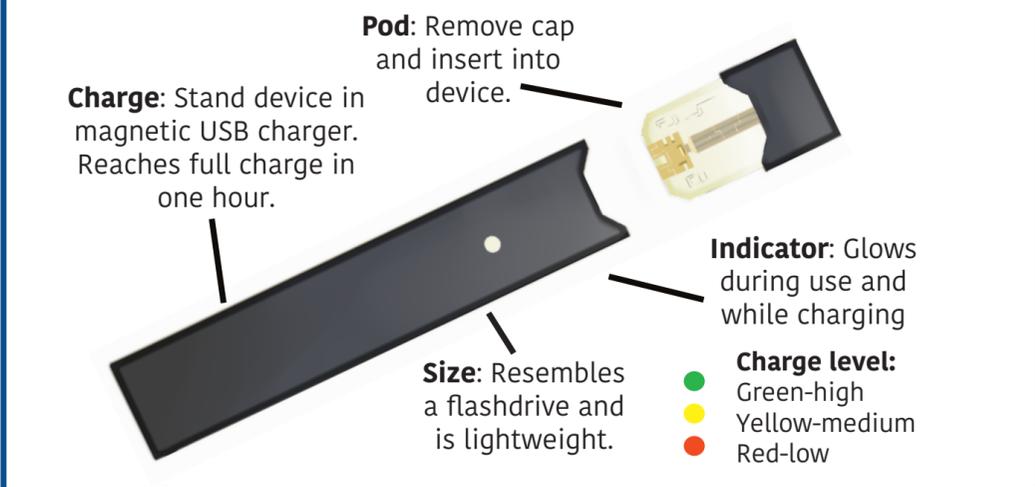
Despite the health risks involved with nicotine, there are major consequences for bringing a Juul or any type of e-cigarette into school. According to the Ladue High School handbook, "smoking and the use of tobacco products, including electronic cigarettes, vaporizers or other nicotine-delivery products by students is prohibited in all school buildings and on all school property at all times." If found in possession of a tobacco related product, a student faces the possibility of suspension for up to five days.

"Clearly, we have a zero tolerance policy on having any of those products in the building," Ladue High School Associate Principal Elizabeth Grana said. "The bigger concern would be addiction counseling and therapy for students who are already finding substances to abuse."

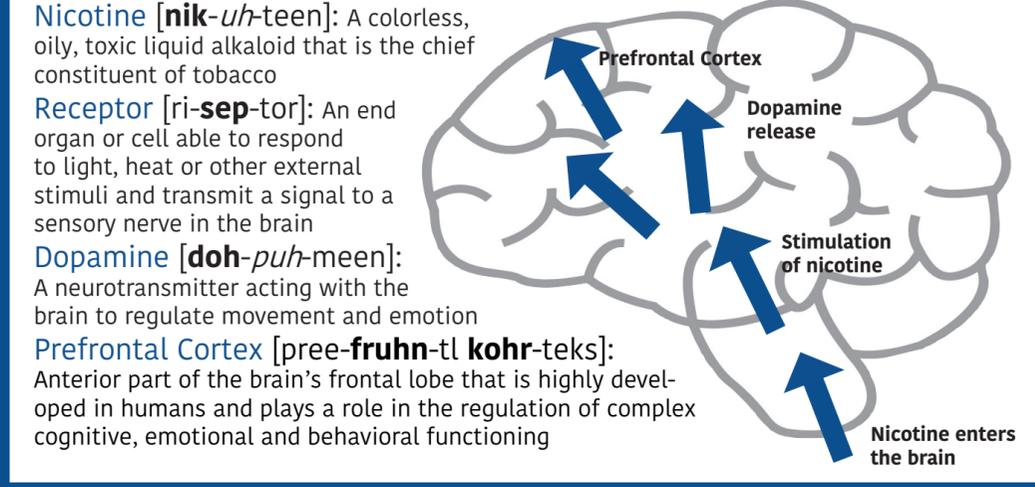
Because e-cigarettes are not regulated by the Food and Drug Administration, there could be thousands of chemicals in the Juul that are unknown to the general public. By Nov. 8, 2018, the FDA will require all e-cigarette manufacturers to register their products that contain tobacco. This new regulation has to do with the fact that now minors have access to dangerous products including the Juul, with no guarantee as to what is inside of them.

"It's the latest and greatest as far as drugs go, but it concerns us if you're willing to try something with little disregard to the side effects," Mennemeier said. "Your brain is programmed to crave that addiction, and if you no longer get the rush from nicotine, what other drug or harmful substance would you use next?"

## Juul 101: The anatomy of the Juul



## Nicotine in the brain



If you are suffering from a nicotine addiction, call 1-800-QUIT-NOW.