

E-cigarette use among youth has become an **epidemic** in the United States. They were developed with the attempt to help adults quit smoking since everyone thought they were “safer” than regular cigarettes and could be used as an alternative.

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.

FDA and CDC released findings from the 2019 National Youth Tobacco Survey.

The results show alarming rates of e-cigarette use among both middle and high school students in 2019, 10.5% of middle school students and 27.5% of high school students reporting they have used e-cigarettes in the past 30 days, with an overall 5 million youth reporting having used e-cigarettes in the past 30 days and nearly one million reporting daily use.



## What is an e-cigarette?

- The most common name is “e-cigarette,” but others such as e-cigs, vapes, vape pens, mods and tanks are common terms.
- E-cigarettes are battery-powered devices that can deliver nicotine and flavorings to the user in the form of an aerosol.
- E-cigarettes come in many shapes and sizes. Some e-cigarettes look like regular cigarettes, cigars, or pipes. Some look like USB flash drives, pens, and other everyday items that are easy to conceal. JUUL, an e-cigarette shaped like a USB flash drive, is now the most commonly sold e-cigarette in the United States.
- Types of substances that are being used for vaping include nicotine, flavored liquids, marijuana, and hash oil.



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## What is in e-cigarette?

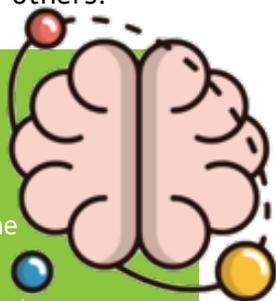
- E-cigarette aerosol is not harmless water vapor. The aerosol that users inhale and exhale from e-cigarettes can expose both themselves and others to harmful substances, including heavy metals, volatile organic compounds, and ultra fine particles that can be inhaled deeply into the lungs.
- Most e-cigarettes contain nicotine, the same addictive drug in regular cigarettes, cigars, and other tobacco products. Nicotine affects the development of brain circuits that control attention and learning. Other risks include mood disorders and problems with impulse control and the failure to fight response, which is an urge to harm oneself or others.

## How does vaping effect the brain?

Nicotine is absorbed from the lungs into the bloodstream when a person vapes an e-cigarette. Upon entering the blood, nicotine stimulates the adrenal glands to release the hormone epinephrine (also known as adrenaline). Epinephrine stimulates the central nervous system, increases blood pressure, breathing, and heart rate.

Nicotine activates the brain's reward circuits and increases levels of a dopamine (reward chemical), which reinforces pleasing behaviors related to using the e-cigarette. This pleasure caused by nicotine's interaction with dopamine, motivates teens to use nicotine more frequently creating nicotine addiction. The user will start to crave the substance and suffer withdrawal symptoms if you ignore the craving, which research suggests may be as addictive as heroin and cocaine.

Because of high nicotine levels, vaping is extremely addictive leaving teens more susceptible to addiction than adults. Because youth brains are still developing this makes them more likely to progress into using drugs and alcohol.



## Health Risks

The health risks of vaping are becoming clearer and are similar to the health risks of smoking. Nicotine use among teenagers has negative short and long-term health implications that remain unknown. Researchers are working hard to understand the effects of vaping, as this usage is new.

## What are the risks for youth?

Most e-cigarettes contain nicotine, which is highly addictive:

- Nicotine exposure during adolescence can:
  - Harm brain development, which continues until about age 25
  - Impact learning, memory, and attention
- Increase risk for future addiction to other drugs including regular use of cigarettes
- Cause cardiovascular, respiratory, and cognitive impairments
- E-cigarette aerosol is not harmless. It can contain harmful substances, including:
  - ▶ Nicotine
  - ▶ Cancer-causing chemicals
  - ▶ Volatile organic compounds
  - ▶ Ultra fine particles
  - ▶ Flavorings that have been linked to lung disease
  - ▶ Heavy metals such as nickel, tin, and lead
- Bronchiolitis Obliterans (Popcorn Lung): a serious and irreversible lung disease that can damage the smallest airways in your lungs, resulting in coughing and shortness of breath.

## Signs of Teen Vaping

- Increased thirst/nose bleeds
- Equipment – finding their e-cigs or other related items
- Online purchases/packages in mail/store purchases
- Chronic Cough
- Vaping lingo in their language and social media posts
- Appearance or behavior changes
- Sudden need for privacy or walks
- Change in friends, possibly older peers
- Secrecy/paranoia
- Irritability – nicotine addiction and possible symptoms of withdrawal may cause irritability

## Why Do Teens Vape?

- To experiment
- Because it tastes good
- To have a good time with friends
- To relax and relieve tension
- To feel good or get high
- Boredom
- It looks cool
- Because they're addicted
- To help quit regular cigarettes
- Regular cigarette use is not permitted

## What Can Parents Do?

1. Know the facts about e-cigarettes and vaping
2. Have conversations with your teens
3. Try to understand why teens might share why they have 'experimented' and provide support on the risks
4. Convey your expectations with your teen about nicotine use
5. Be a good role model



**Let's Make a Difference By Pledging Together**

**Make the pledge!**