

E-cigarettes and Vaping: Facts and Information about the Epidemic

What is vaping?

- The act of inhaling the aerosol, often referred to as vapor, produced by an e-cigarette or similar device.
- The term “vape” comes from the common misconception that the aerosol released by electronic cigarettes is actually water vapor.
- Rose to popularity in 2007, when it was initially marketed as a safe alternative to cigarettes and a way to help smokers quit.
- Some have successfully used vaping to wean off cigarettes, but many non-smokers have taken up vaping, leading to the development of unnecessary nicotine addictions and other negative health effects.

What are e-cigarettes?

- “E-cigs,” “vapes,” “e-hookahs,” “vape pens,” “mods,” JUULs, etc.
- Electronic devices that deliver nicotine and other chemicals to the lungs through aerosol rather than smoke.
- These products do not contain tobacco, which is in part why they are marketed as safe. However, the other chemicals and substances in e-cigarette juice can be incredibly harmful.
- JUUL is the most common brand used by teens/adolescents, mainly because of the discrete flash drive-like shape and appealing flavors such as mango and crème brûlée. According to the manufacturer, one JUUL “pod” contains as much nicotine as a pack of 20 cigarettes.

Health Risks and Harm

- Dangers of nicotine include:
 - Negative effects on metabolism
 - Increased cancer risks and respiratory problems, as well as making asthma symptoms worse
 - “Prime” brains for addiction later on (to cigarettes and potentially other drugs)
 - Impairs the part of the brain that controls attention, learning, mood disorders, memory development, and impulse control

- In addition to nicotine, studies have shown that liquid used in e-cigs and the e-cigarettes themselves contain:
 - Propylene Glycol (converted to Propylene Oxide, a known carcinogen, when heated)
 - Formaldehyde (used to embalm bodies of the deceased)
 - Acetaldehyde (can cause lung and heart disease)
 - Acrolein (herbicide primarily used to kill weeds, can cause acute lung injury, COPD, asthma, and lung cancer)
 - Glycerin (toxic to cells when ingested)
- In 2016, the Surgeon General warned that the second-hand emissions of e-cigarettes contain:
 - Nicotine
 - Fine and ultrafine particles (constricts arteries, can trigger heart attacks, and can worsen preexisting respiratory problems and impair lung function)
 - Flavorings such as Diacetyl (linked to serious lung disease)
 - Nanoparticles of heavy metals like chromium, lead, nickel and tin (able to pass through cell walls)
 - Volatile organic compounds like Benzene (found in car exhaust, ingesting can cause cancer)
- “Popcorn lung” (bronchiolitis obliterans) is a serious and irreversible lung disease that can damage the smallest airways in your lungs, resulting in coughing and shortness of breath.
 - The condition got its nickname because of the chemical diacetyl, a buttery flavored chemical that was commonly found in microwave popcorn.
 - Recent studies have found that more than 75 percent of flavored e-cigarettes and refill liquids tested positive for diacetyl.

Vaping-related Health Epidemic

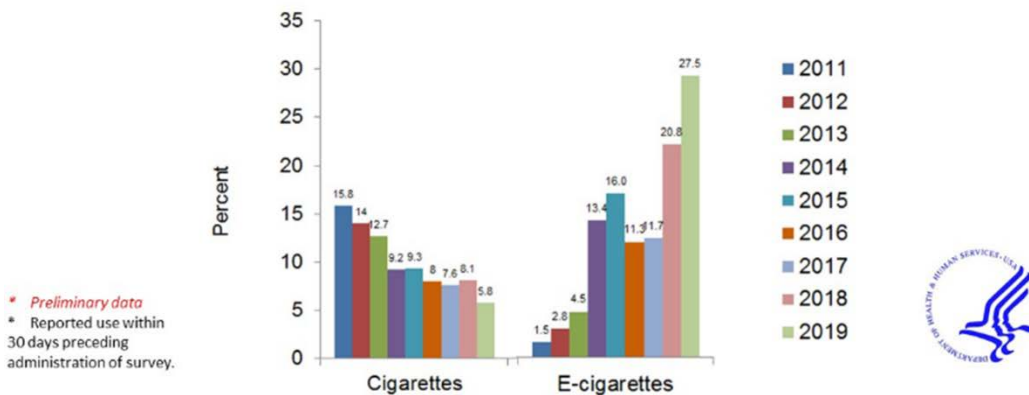
- **As of October 22, 2019:**
 - 1,604 cases of e-cigarette/vaping associated lung injury have been reported to CDC from 49 states (all except Alaska), the District of Columbia, and 1 U.S. territory.
 - Thirty-four deaths have been confirmed in 24 states, with the age of deceased patients ranging from 17 to 75 years.
- **As of October 15, 2019,** of 849 patients that reported information on substances used in e-cigarette, or vaping, products in the 3 months prior to symptom onset:

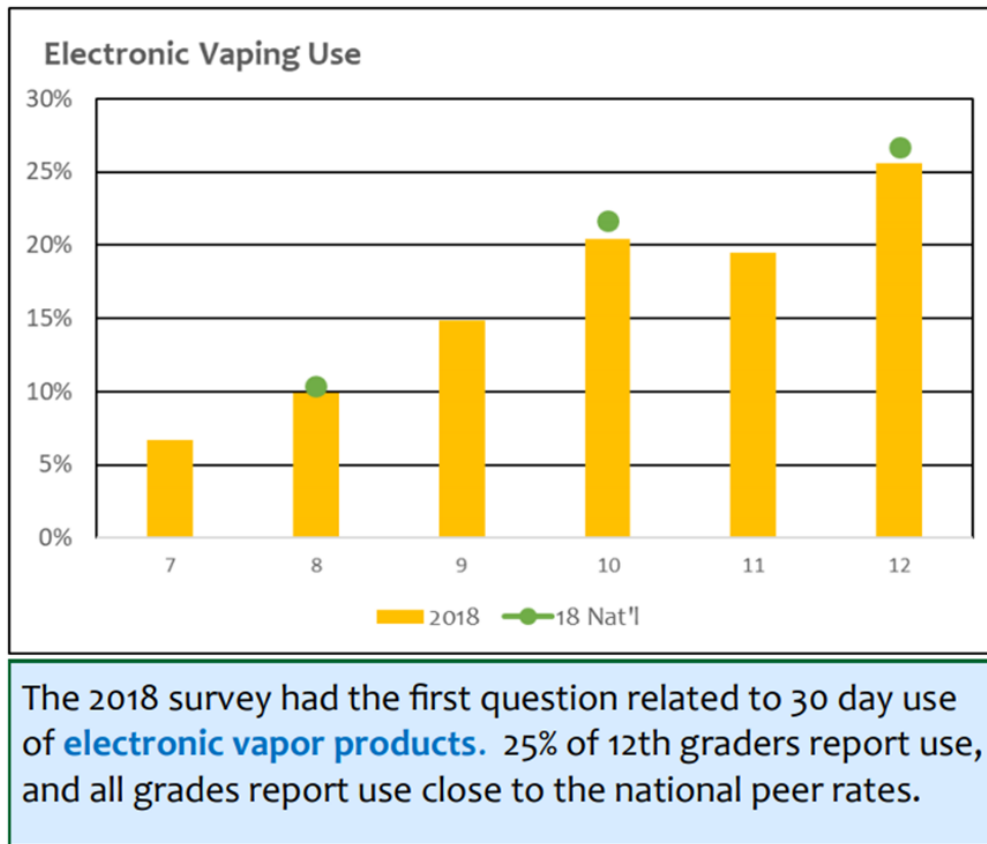
- About 78% reported using THC-containing products; 31% reported exclusive use of THC-containing products.
- About 58% reported using nicotine-containing products; 10% reported exclusive use of nicotine-containing products.
- At this time, FDA and CDC have not identified the primary cause[s] of the lung injuries in these cases. The only commonality among all cases is that patients report the use of e-cigarette/vaping products. No one compound or ingredient has emerged as the cause of all of these illnesses to date and it may be that there is more than one cause of this outbreak.

E-cigarette Use in Teens & Adolescents

- The teenage years are a critical time for brain development. Due to this, young people who use nicotine products are at a unique risk for long-lasting negative effects.
- Studies have suggested that adolescents and teens who use e-cigarettes are more likely to go on to use tobacco products, including cigarettes.
 - In 2015, a study showed that students who used e-cigarettes by the time they started 9th grade were more likely to start smoking cigarettes/other tobacco products within the next year than peers who had never used e-cigarettes.
 - A 2017 study showed that high school students who had used e-cigarettes in the last month were about 7x more likely to report that they smoked cigarettes when asked approximately 6 months later.

NATIONAL YOUTH TOBACCO SURVEY*: HIGH SCHOOL STUDENT USE OF E-CIGARETTES CONTINUES TO CLIMB





How to Prevent your Child from Vaping

According to the Center for Disease Control:

- Set a good example by being tobacco-free. If you use tobacco, it's never too late to quit. For free help, visit [smokefree.gov](https://www.smokefree.gov) external icon or call [1-800-QUIT-NOW](tel:1-800-QUIT-NOW).
- Talk to your child or teen about why e-cigarettes are harmful for them. Let them know that you want them to stay away from all tobacco products, including e-cigarettes, because they are not safe for them.
- Get the [Talk With Your Teen About E-cigarettes](https://www.e-cigarettes.surgeongeneral.gov/resources.html) tip sheet for parents. <https://e-cigarettes.surgeongeneral.gov/resources.html>
- Seek help and get involved.
 - Set up an appointment with your child's health care provider to talk about the health risks of tobacco products, including e-cigarettes.
 - Speak with your child's teacher and school administrator about enforcement of tobacco-free school grounds policies and tobacco prevention curriculum.
 - Encourage your child to learn the facts and get tips for quitting tobacco products at [Teen.smokefree.gov](https://www.teen.smokefree.gov) external icon.

Useful Resources

www.drugabuse.gov

www.oasas.ny.gov

www.cdc.gov

www.health.ny.gov

www.addictioncenter.com

Questions or Comments?

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