

# E-cigarettes: What You Need To Know

## What is an E-cigarette?

- Electronic cigarettes (e-cigarettes or e-cigs), JUUL<sup>®</sup>, hookah pens, vapes, vaporizers, vape pens, e-hookah, e-pens, e-pipes and e-cigars are all known as electronic nicotine delivery system (ENDS).
- These products use an “e-liquid” found in pre-filled or refillable cartridges or pods. The liquid contains:
  - nicotine
  - chemical flavorings
  - additives such as propylene glycol and vegetable glycerin.

The liquid is heated to create an aerosol that the user breathes in. The heat can turn some of the chemicals into known cancer-causing chemicals. For example, heated propylene glycol turns into formaldehyde (used to preserve dead tissue).

- ENDS are a tobacco product because most of them contain nicotine. The nicotine in e-cigarettes, which comes from tobacco, is addictive.
- ENDS are battery-operated.
- E-cigarettes come in many shapes and sizes. They may look like traditional tobacco products but they may also look like flash drives, highlighters and lipstick tubes. This can make them hard to recognize.
- E-cigarettes can also be used with marijuana and other street drugs.
- All major tobacco companies own and make e-cigarettes.



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## How Do You Use An E-cigarette?

- Each time you take a puff, the liquid moves past a small metal coil. The coil heats up and warms the liquid causing it to come out as an aerosol that looks like cigarette smoke.
- You breathe the chemical aerosol in and out, which is usually called “vaping.” When you use a JUUL product, it is called “Juuling.” When using JUUL or similar products, there may not be an aerosol but you are still breathing in all of the chemicals.

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Tobacco products come in different shapes and sizes. This can make them difficult to spot.

E-cigarettes use e-liquid that, when heated, create an aerosol that contains chemicals. This makes these products unsafe.

Using e-cigarettes is not an FDA-approved way to quit smoking cigarettes, cigars or pipes.

Image: FDA ([fda.gov/tobacco-products/products-ingredients-components/vaporizers-e-cigarettes-and-other-electronic-nicotine-delivery-systems-ends](https://www.fda.gov/tobacco-products/products-ingredients-components/vaporizers-e-cigarettes-and-other-electronic-nicotine-delivery-systems-ends)).

## Is the Aerosol Just Water?

- The aerosol you breathe in and out is not just water. It includes chemical changes from being heated and turned into the aerosol. It can also contain pieces of the metal called “whiskers” that may break off the coil during the heating process.

## Are E-cigarettes Safe?

- E-cigarettes are not safe. They are a tobacco product.
- ENDS are not approved by the U.S. Food and Drug Administration (FDA).
- ENDS are not regulated by the FDA but the FDA is working to change this.
- ENDS products have exploded, causing injuries.
- The chemicals used in the liquid do not have to be safe, and they are seldom fully listed.

- E-cigarette use may cause seizures, according to the FDA.
- Private and federally-funded tests found many of the same chemicals in ENDS products that make cigarettes so dangerous, including:
  - benzene (found in car exhaust)
  - heavy metals (nickels, tin, lead)
  - arsenic (found in rat poison)
  - formaldehyde (used to preserve dead tissue)
  - glycol (used in antifreeze).

Testing has also found chemicals known to cause cancer in humans and scarring in the lungs (known as “popcorn lung”).

- It is common for there to be more or less nicotine than what is listed on the label. It is possible for “nicotine-free liquid” to still have nicotine in it. The FDA is working to change this.

- Some ENDS products, like JUUL, can deliver a significant amount of nicotine. One JUUL pod has been reported to deliver the same amount of nicotine as smoking more than 1 pack of cigarettes a day.
- The nicotine in e-cigarettes is not filtered the way it is in FDA-approved nicotine replacement therapies (such as patches and gum). This allows harmful chemicals from tobacco to be in e-cigarettes. Some companies claim to use filtered nicotine. This is not FDA-regulated so it cannot be verified.
- Even chemicals that are considered “safe” need to be retested for safety when they are heated. Heat produces chemical changes which can be harmful. For example, when glycerol is heated, it changes into acrolein, which irritates your airways.



(Top) JUULs or similar products come in different colors and look like a flash drive.  
 (Bottom) The different parts of e-cigarettes include heating coils and flavoring liquids.

- E-cigarettes have become very popular very quickly. This means there has not been time to get results from long-term studies on the safety or health effects of e-cigarettes. Short-term studies are available.
  - A 2018 public health research report supported by the FDA confirms that using ENDS products is harmful. Use causes health and safety problems and greatly increases tobacco addiction among adolescents.
  - The name of the report is “Public Health Consequences of E-cigarettes” by the National Academies of Science, Engineering, Medicine (NASEM).”

### Should E-cigarettes be Used to Quit Smoking?

- No. The FDA has not approved e-cigarettes as a way to quit smoking.
- According to the 2018 NASEM report, there is “limited” evidence that e-cigarettes help some people to quit smoking. Many people return to smoking, continue to use the e-cigarette, or use both. None of these options is healthful.
- If you want to quit smoking, there are FDA-approved medicines that you can use. These medicines have been studied and are proven to help you quit smoking.

For more information, please talk with your health care provider, pharmacist or tobacco counselor. He or she can help you decide which type of medicine is right for you and tell you how to use it the right way.

### Can You Use E-cigarettes in Public?

- E-cigarettes were added to the Minnesota statewide smoke-free air law. This means you are not allowed to use ENDS products anywhere tobacco use is not allowed.
- All Allina Health facilities are tobacco-free. This means smoking or the use of tobacco products, including ENDS, is not allowed. You may ask for medicines to help with nicotine withdrawal.



## How Do E-cigarettes Harm Youth?

- ENDS have been shown to lead to nicotine addiction and increased tobacco use among youth.
- Nicotine exposure in an adolescent can cause damage to parts of the brain that are responsible for memory, the ability to think, and emotion.
- ENDS have been linked to harming youths' lungs. Youth are at risk for chronic (long-term) bronchitis which causes cough, chest congestion, shortness of breath and extra mucus, according to the American Lung Association.
- ENDS and the liquid are sold in kid-friendly flavors.
- There is a risk for severe illness and death if the liquid is swallowed or absorbed into the skin.
- ENDS are popular with young people. The U.S. Surgeon General declared ENDS use as an epidemic. More high school students than adults use ENDS.

## Resources To Learn More

- [teen.smokefree.org](http://teen.smokefree.org)
- [TheVapeTalk.org](http://TheVapeTalk.org)
- [truthinitiative.org](http://truthinitiative.org) (Click on the link that says "quit smoking and vaping tool.")

## Resources To Quit

### Allina Health

- Tobacco Intervention Program at Abbott Northwestern Hospital  
— 612-863-1648
- Tobacco Intervention Program at Mercy Hospital  
— 763-236-8008

- Tobacco Intervention Program at River Falls Area Hospital  
— 715-307-6075
- \*United Hospital Lung and Sleep Clinic Tobacco Cessation Program  
— 651-726-6200
- \*Penny George™ Institute for Health and Healing (LiveWell Center) tobacco intervention coaching  
— 612-863-5178

### Other

- QUITPLAN® (Minnesota)  
— 1-888-354-PLAN (7526) or [quitplan.com](http://quitplan.com)
- Quit Smoking Hotline (all other states)  
— 1-800-QUIT-NOW (7848-669)
- online tobacco cessation support  
— [smokefree.gov](http://smokefree.gov)
- American Lung Association/Tobacco Quit Line  
— 651-227-8014 or 1-800-586-4872
- Chantix® GetQuit Support plan  
— 1-877-CHANTIX (242-6849) or [get-quit.com](http://get-quit.com)
- financial aid for Chantix® or Nicotrol® inhaler  
— 1-866-706-2400 or [pfizerhelpfulanswers.com](http://pfizerhelpfulanswers.com)
- \*Mayo Clinic Nicotine Dependence Center's Residential Treatment Program  
— 1-800-344-5984 or 1-507-266-1930
- To buy aromatherapy  
— Plant Extracts 1-877-999-4236

**\*There may be a cost to you.  
Check with your insurance provider.**