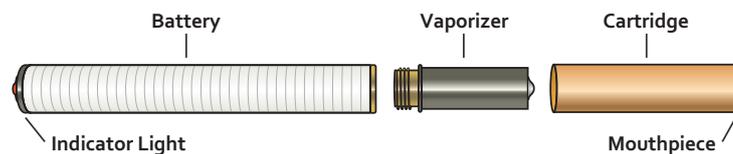


# Vaping/Electronic Nicotine Delivery Systems

Vaping is a word used to describe the use of an electronic nicotine delivery system. It's called vaping because of the aerosol cloud given off during use.



## What is an Electronic Nicotine Delivery System (ENDS)?

ENDS is a catch-all phrase for the different electronic devices used to vape. These devices may or may not look like a traditional cigarette. E-cigs usually contain varying amounts of nicotine. They are battery-operated devices creating heat that aerosolizes a liquid (changes something into a fine spray) which can be inhaled by the user.

ENDS products come in many different shapes and sizes and have many different names, often making it difficult for someone to understand what they are. Here is a list of the most common ones you will hear about:

### Electronic Cigarette, E-Cig.

These devices look like cigarettes. They usually have a glowing light on the end and are painted to look like traditional cigarettes. Some are disposable. Some have rechargeable batteries and replaceable e-liquid cartridges. They are heat-activated by a person drawing or sucking air through them.

### Other devices

There are many other types of electronic nicotine delivery systems in a wide variety of shapes and sizes. Most of these products do not look like cigarettes. Some of the names for the different products include: Vape Pens, Vape Boxes, E-Hookah, Hookah Pen, Hookah Stick, Shisha Stick, Mechanical Mods, E-Cigar, and E-Pipe.

### Concentrated Nicotine Solution

The concentrated nicotine solution used in some of these devices is called e-liquid or e-juice. Usually the solutions contain either the chemical

compound propylene glycol or vegetable glycerin as preservatives, along with various flavorings. The ingredients often vary by brand and for each type of electronic product. At this time, there are very few rules or regulations that control how these products are made or advertised. This means that the quality and purity can vary.

### Are they addictive?

Most of the ENDS products contain nicotine. Nicotine is one of the most addictive substances known. This is the same nicotine that is in tobacco products. Addiction to the nicotine means that you feel the need to keep putting nicotine into your body. Your body depends on it and you will have symptoms that make you uncomfortable if you don't get enough of it or if you don't get it often enough.

Actual nicotine content in these products may vary from product to product and from the labeled content.

### What about the flavors?

There are thousands of different flavors available. Fruit and candy flavors are especially popular with younger users. Although these flavors have been labeled as safe to eat there remains major concern about what happens when you inhale them into your lungs. Some of the flavorings used are known to cause respiratory irritation or can be toxic to lung tissue.

### SPECIAL CONCERN—

E-liquids should be kept well out of reach of children. Nicotine poisoning can be fatal to children as well as adults. As little as 1 teaspoon of liquid nicotine can kill a 40 pound child.

**Are they safe?**

The simple answer is—No. Tobacco related toxins (poisonous substances that can cause disease) and carcinogens (cancer causing chemicals) have also been found in the aerosol vapor of ENDS products. Tiny heavy metal particles that are most likely from the casings and heating elements have been found in the vapor. Heating of the nicotine solution can create other toxins and carcinogens. Their longterm safety is unknown – and there is plenty of reason for concern.

**Are they useful in helping someone to quit smoking cigarettes?**

Some people claim they have quit smoking cigarettes by using an e-cig. However, results from recent research studies have not been able to show that they are effective in helping people quit smoking. Keep in mind that these products have few regulations or standards governing their manufacturing or contents. Products not regulated by the FDA (US Food and Drug Administration) do not hold to the same standards of quality, safety, and effectiveness as products that are regulated and approved for smoking cessation such as the nicotine patch, nicotine gum, and nicotine lozenge.

(For more information on products used to help quit smoking, see ATS document on Cessation OTC and Prescription medications)

**Can you use ENDS anywhere?**

Electronic nicotine delivery systems create aerosols. These aerosols (vapors) can and do expose others nearby. Protect your family and friends. If you do use these devices, only use them outside and well away from other people. Many states have put laws in place that prohibit the use of these devices in places where you cannot smoke. These devices cannot be used on commercial airplanes.

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**R<sub>x</sub> Action Steps**

- ✓ Avoid using ENDS. Limit exposure to vapors from ENDS devices.
- ✓ Keep all nicotine liquids out of reach of children.
- ✓ If you are trying to stop smoking, talk with your health care provider about medications to help with nicotine addiction.
- ✓ For help with quitting go to [www.thoracic.org/patients](http://www.thoracic.org/patients).
- ✓ For additional help in quitting, join a local quit smoking support group or call 1-800-QUIT-NOW

**Resources**

**ATS Patient Information Series on Tobacco at**  
[www.thoracic.org/patients](http://www.thoracic.org/patients)

**FDA (Food and Drug Administration):**  
<http://www.fda.gov/newsevents/publichealthfocus/ucm172906.htm>

**American Legacy Foundation [www.legacyforhealth.org](http://www.legacyforhealth.org)**  
<http://truthinitiative.org/topics/tobacco-products/e-cigarettes>

**American Academy of Pediatrics – Healthy Children**  
<https://www.healthychildren.org/English/safety-prevention/at-home/Pages/Liquid-Nicotine-Used-in-E-Cigarettes-Can-Kill-Children.aspx>

**Smokefree.gov**

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