

## What Are Electronic Smoking Devices (ESDs)?

Electronic smoking devices, often called **e-cigarettes** or **vape pens**, heat and aerosolize a liquid that contains a cocktail of ingredients, including flavorings and varying levels of nicotine. **Using these devices is called vaping.**

The metal or plastic devices contain a cartridge filled with a liquid that is vaporized by a battery-powered heating element. The aerosol is inhaled by the user when they draw on the device, as they would a regular cigarette. The user then exhales secondhand aerosol, which includes chemicals and other pollutants.

**Most electronic smoking devices contain nicotine**, and some companies claim to sell nicotine-free cartridges. They come in a wide variety of shapes, sizes, flavors, and nicotine levels. These are not one uniform product but hundreds of different products. It should be noted that youth and adults are also using these devices to vape marijuana, hash oil, and other substances.

The design and look of these devices evolves quickly, so policy makers, parents, and communities need to be aware of the products and their impact on smokefree air.

### Disposable & rechargeable "cig-like" device:



### Disposable hookah pen-style device:



### Pen-style rechargeable device:



### Tank-style rechargeable device:



### Pod-style rechargeable device (Juul, Pax, etc.):



### Electronic smoking devices go by many names:

- ◊ Electronic cigarette
- ◊ E-cigarette
- ◊ Vape pen
- ◊ Juul
- ◊ Hookah pen
- ◊ E-hookah
- ◊ Personal vaporizer
- ◊ Tank system
- ◊ Mod
- ◊ Pod vape/system

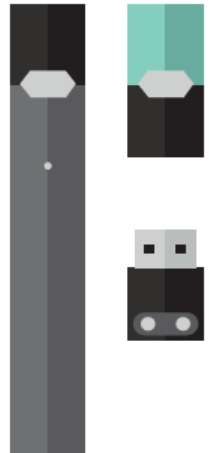
## What Is JUUL?

**Juul is the top-selling e-cigarette** brand in the U.S., and it is very popular among youth and young adults. Juuls are high-tech devices: they look like thumb drives, charge in USB ports, use replaceable "pods" filled with flavored nicotine liquid, and are easy to use discreetly. Using a Juul is often called "juuling."

A Truth Initiative study found that 63% of Juul users don't know that Juul always contains nicotine.

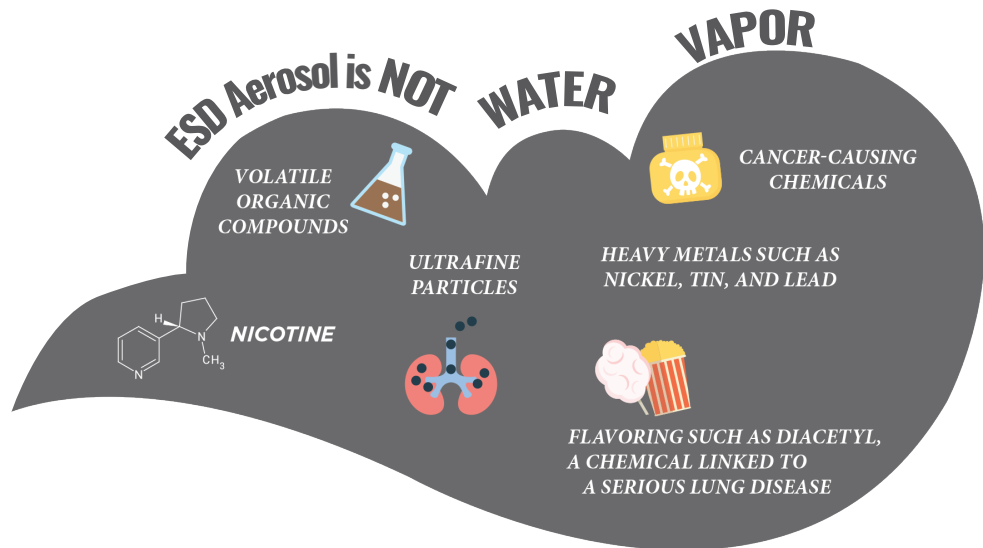
In fact, one Juul pod contains as much nicotine as a pack of cigarettes.

Image: CDC infographic, 2018



## ESD Aerosol Is Not Water Vapor

Supporters claim that electronic smoking devices release "nothing but water vapor." However, the "smoke" you see is NOT a "vapor": it is a chemical aerosol containing substances and toxins like those in the graphic from the U.S. Centers for Disease Control and Prevention (CDC). The aerosol (incorrectly called vapor) contains nicotine, hazardous ultrafine particles that lodge deeply in the lungs, and chemicals and toxins known to cause lung disease and cancer. This is why it is not safe to use these products in smokefree spaces, like workplaces.



# ELECTRONIC SMOKING DEVICES: THE FACTS

## Electronic Smoking Devices Are Not Emission-Free

The scientific evidence on the short-term and long-term health effects of ESD use and exposure to ESD second-hand aerosol is growing. Current research indicates there are risks associated with both use and exposure. ESD aerosol is made up of a high concentration of ultra-fine particles. Exposure to fine and ultrafine particles may exacerbate respiratory ailments like asthma, and constrict arteries which could trigger a heart attack.

An August 2018 study found that the risk of heart attacks is double for daily ESD users, and the dual use of ESDs and conventional cigarettes—the most common use pattern among ESD users—is more dangerous than using either product alone. Additionally, many of the elements identified in ESD aerosol are known to cause respiratory distress and disease. Non-smokers who



## Hooking a New Generation on Nicotine

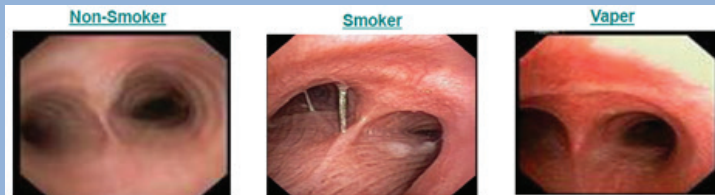
ESDs are not a proven smoking cessation device. They are an alternative nicotine delivery device that will maintain or restore the habit, and can addict a new generation to nicotine. ESD proponents are deceptively marketing the products to the public—especially to young adults via social media—as a “safe” alternative to smoking and an easy way to quit smoking tobacco cigarettes.

ESDs come in an impossibly long list of enticing flavors that historically have appealed to youth, from Gummy Bear to Sour Worms to Cookie Dough to Apple Juice. Refillable ESDs allow users to mix their own “e-juice” to create their own flavor combinations and potentially create higher nicotine levels.

Research shows that some chemicals used as flavorings in ESD liquid—which are approved by the FDA for food use (ingestion) but are not approved for inhalation—are associated with respiratory disease when inhaled.

### THE AIRWAYS OF HEALTHY VAPERS LOOK ABNORMAL:

New research found that vaping alters the physical appearance of airways and lung macrophages.



Source: Ray Coakley (Ghosh et al. American Journal of Respiratory and Critical Care Medicine 2018)

are exposed to conventional cigarette smoke and ESD aerosol absorb similar levels of nicotine. ESD exposure damages lung tissues. Human lung cells exposed to ESD aerosol and flavorings, especially cinnamon, show increased oxidative stress, inflammatory responses, and DNA fragmentation. Short-term ESD use increased respiratory resistance and impaired lung function, which may result in difficulty breathing.

The use of ESDs containing nicotine has a significant impact on vascular functions, and ESDs increase cardiovascular risk as much as cigarettes. ESD aerosol is a new source of pollution and toxins being emitted into the environment.

**“If you are around somebody who is using e-cigarettes, you are breathing an aerosol of exhaled nicotine, ultra-fine particles, volatile organic compounds, and other toxins.”**

—Dr. Stanton Glantz, Director for the Center for Tobacco Control Research and Education, UCSF

## ACCORDING TO THE 2016 U.S. SURGEON GENERAL'S REPORT ON E-CIGARETTE USE AMONG YOUTH & YOUNG ADULTS:

**E-cigarettes are now the most commonly used form of tobacco by youth in the United States.**

**More than 25% of students in grades 6-12 and more than 33% of young adults have tried e-cigarettes.**

**85% of e-cigarette users ages 12-17 use flavored products.**

# WHAT CAN MY COMMUNITY DO?

## It's very simple!

If your community has a 100% smokefree air law, the law can be amended by adding a definition of “electronic smoking device” and amending the definition of “smoking” to include electronic smoking devices (ESDs).

If your community is protected by a strong statewide smokefree law, then you can adopt a law to prohibit the use of ESDs wherever the state law prohibits smoking. This is also an opportunity to close any gaps that may exist in your state smokefree law.

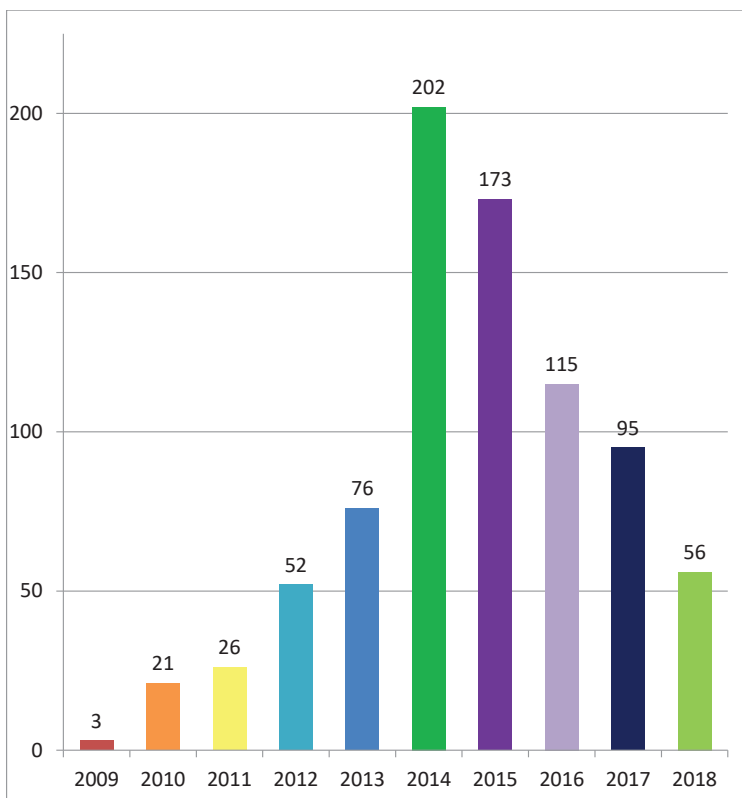
If your community is not yet protected by a 100% smokefree air law for all workplaces and public places, now is a great opportunity to consider adopting a law to address both tobacco smoking and ESD use in those spaces. You can find definitions in ANR’s model law for smokefree workplaces and public places at

<https://nonsmokersrights.org/sites/default/files/2018-06/modelordinance.pdf>

## Including Electronic Smoking Devices in Smokefree Laws

As of October 2018, 789 U.S. municipalities and 12 states include electronic smoking devices (ESDs) as products that are prohibited from use in smokefree environments. Including ESDs is now a standard component of smokefree air laws. Cities and states are choosing to prohibit the use of ESDs in all smokefree venues (indoors and outdoors) so that workers and the public don’t have to breathe the secondhand aerosol these products emit.

### Number of Smokefree ESD Laws by Year



Many communities include ESDs in smokefree workplace laws, such as Nome, AK; Paducah, KY; New Orleans, LA; Tupelo, MS; and Ft. Worth, TX.

The 2016 U.S. Surgeon General’s Report states that including ESDs in smokefree indoor air policies eliminates health risks from exposure to secondhand aerosol from ESDs. It is the right and responsibility of our elected officials to take action to protect public health and safety.

## WHAT IS THE FDA DOING ABOUT ELECTRONIC SMOKING DEVICES?

The FDA now has the authority to regulate electronic smoking devices as tobacco products. This means that the sale of ESDs to minors is prohibited, manufacturers must disclose ingredients, and products must include health warning labels, among other regulations that go into effect over the next few years. However, the FDA does not have the authority to address where the products may be used. Cities and states can and are enacting laws that regulate when and where ESDs can be used, as well as where the products can be sold.



**Sign for New Orleans’ smokefree law, which includes ESD use.**

## MYTHS & FACTS ABOUT ESDs

**Myth:** Electronic smoking devices (ESDs) are harmless! They only emit water vapor.

**Fact:** The aerosol emitted by ESDs is not water vapor. The aerosol is a mixture of many substances, including nicotine, ultrafine particles, volatile organic compounds, and toxins known to cause cancer. There is enough peer-reviewed, published scientific evidence to determine that secondhand aerosol is not harmless. It's a new source of air pollution that should not be permitted in smokefree environments.

**Myth:** I quit smoking by using an ESD! Do you want to prevent people from quitting tobacco?

**Fact:** ESDs are not proven cessation devices. While some individuals have quit smoking tobacco by using ESDs, studies indicate that ESDs may not be helpful at the population level. Many people become *dual-users* who use both cigarettes and ESDs. Including ESDs in smokefree laws does not prohibit people from using these products; rather they simply must step outside to use them, just like people do to smoke cigarettes.

**Myth:** Nicotine is no more harmful than caffeine!

**Fact:** Not true! Nicotine is an addictive and poisonous drug in even small amounts. Nicotine exposure can negatively impact developing fetuses as well as teenage brain development. Nicotine also reacts with other chemicals to create tobacco-specific carcinogens. The potential hazards to non-users in a shared air space are due to more than just nicotine.

**Myth:** I own a vape shop. I'm a small business owner who creates jobs and pays taxes in our community. If you include ESDs, I'll lose money and so will the city.

**Fact:** Thus far this has not been proven to be true. The tobacco industry has historically used “small business” arguments and threats, but smokefree laws have not been found to be damaging to business. If the shop is in a strip mall or other attached building and shares the air with other businesses, people in these workplaces should not be exposed to unwanted secondhand aerosol.

## WHAT TO EXPECT FROM THE OPPOSITION

Electronic smoking device (ESD) industry proponents are actively engaged in efforts to prevent regulation of where the products can be used. Their goal is not public health, but rather to maximize profits by enabling product consumption inside otherwise smokefree environments. This is especially true now that U.S. tobacco companies and their retailer networks are engaged in the ESD industry.

Communities should expect to hear from local ESD users (“vapers”) and vape shop owners, but also from out-of-state opposition groups,

such as Consumer Advocates for Smoke-free Alternatives Association (CASAA) and Smoke Free Alternatives Trade Association (SFATA), and even the tobacco industry. They are very vocal and have generated emails, letters, and social media blasts to City Councils from ESD supporters around the U.S. who are not local constituents.

ESD proponents have taken a page directly from the tobacco industry's playbook. They will claim that ESDs are harmless, that they contain only water vapor, that using them indoors is necessary to help people quit smoking, and other arguments that aim to create doubt and confusion. (*See Myths & Facts at left*)

For instance, Los Angeles radio stations aired ads by Blu and Vuse—ESD brands owned by tobacco companies—asking people to attend a City Council hearing to oppose a proposed ordinance to not allow ESD use in smokefree spaces.

Thankfully, the City Council resisted the industry pressure and voted unanimously to include ESDs in the city's smokefree air law.

### Tobacco Company

Altria  
Reynolds American  
Imperial

### Cigarette Brands

Marlboro, Virginia Slims  
Camel, Newport  
Kool

### ESD Brands

MarkTen  
Vuse  
Blu



Tobacco vs. ESD ads

Source:  
tobacco.stanford.edu