



# The Vape Debate: What You Need to Know

By Regina Boyle Wheeler

E-cigarettes: Are they a safe way for smokers to stop or a gateway to getting kids hooked on a habit that's known to cause deadly diseases of the heart and lungs as well as cancer?

Public health experts and tobacco researchers are trying to find out. So far, results are mixed.

One thing is certain. They're not hard to find. Stores selling them -- called "vape shops" -- are everywhere across the country.

In the summer of 2016, new rules about their sale went into effect. So you have to be 18 to buy them and show an ID if you're under 27.

## The Basics

E-cigarettes are battery-operated devices that can look like a real cigarette or pen. Some with refillable tanks look a bit different. There are hundreds of brands, and they're sometimes marketed as a way to get your nicotine fix without the danger of cigarettes.

They all work the same basic way:

- They have containers filled with liquid that's usually made of nicotine, flavorings, and other chemicals.
- A heating device turns the liquid into vapor that you inhale when you take a drag.

Using an e-cig is called "vaping."

## Are They Safe?

Most contain the chemical nicotine, which is addictive. When you stop using it, you can go into withdrawal and feel depressed and crabby. Nicotine isn't good

for people with heart problems. And some initial research shows it may hurt your arteries.

It can also:

- Harm the developing brains of kids and could affect memory and attention.
- Damage unborn babies. Pregnant women shouldn't use anything with nicotine.

But the concerns go beyond nicotine alone.

Some brands contain chemicals including formaldehyde -- often used in building materials -- and another ingredient used in antifreeze that can cause cancer.

Flavors in e-cigs also raise red flags. Some use a buttery-tasting chemical called diacetyl, which is often added to foods like popcorn. When it's inhaled, it can be dangerous.

"Diacetyl is a well-known harmful chemical, which, among other things, causes a lung disease called 'popcorn lung'," says Erika Sward, assistant vice president for national advocacy at the American Lung Association.

#### **Are They Safer Than Smoking?**

E-cigarettes aren't thought of as 100% safe, but most experts think they're less dangerous than cigarettes, says Neal Benowitz, MD, a nicotine researcher at the University of California at San Francisco. Cigarette smoking kills almost half a million people a year in the United States. Most of the harm comes from the thousands of chemicals that are burned and inhaled in the smoke, he explains.

E-cigs don't burn, so people aren't as exposed to those toxins. A 2015 expert review from Public Health England estimated e-cigs are 95% less harmful than the real thing.

That figure is controversial and might be a little high, says Kenneth Warner, a tobacco policy researcher at the University of Michigan. But, he adds, "The worst critics of e-cigarettes would probably argue they're a half to two-thirds less dangerous. But from a practical view, they're probably on the order of 80% to 85% less dangerous, at least."

Some states and communities that ban smoking in public places also ban vaping. But, Warner says, while the danger from secondhand vapor isn't zero, "it's probably very low."

#### **Do They Help Smokers Quit?**

"We don't have the definitive study on that," Warner says. "My reading of the evidence is that it is quite convincing that e-cigarettes are helping *some* people quit smoking ."

Caren Kagan Evans, 56, of Washington DC, is one of those people. She started smoking when she was 13-years-old. Over the years, Evans tried to quit by using the nicotine patch, gum, and even hypnosis.

Vaping worked in a month, and she's been off cigarettes for more than two years. "I'm breathing, sleeping, and eating much better since I started vaping. My 'smoker's laugh' went away, and I no longer smell like an ashtray."

But Evans' story is the exception, not the rule.

"If there was good evidence that people were using e-cigarettes just to quit smoking, there would be wide support," Benowitz says. "The problem is most of the e-cigarette use in the U.S. is dual use with cigarettes." People use e-cigs in places or situations where they can't smoke, like in a restaurant, but continue lighting up when they can, he explains.

Sward points out that according to the FDA, there's no evidence any e-cigarette is safe and effective at helping smokers quit. She suggests talking to your doctor about medications and other strategies that are proven stop-smoking tools.

The American Heart Association says e-cigs should only be used as a last resort way to quit.

#### Do They Lead Kids to Smoke?

Critics of e-cigarettes fear that vaping will get kids hooked on nicotine and that they'll "graduate" to cigarettes when they want a bigger kick, Warner says.

Two recent studies suggest a link.

A 2016 study in the journal *Pediatrics* found that teens that never smoked but used e-cigs were six times more likely to try cigarettes compared to kids who don't vape.

A study in the *Journal of the American Medical Association* in 2015 found a connection too. Researchers surveyed 2,500 Los Angeles high school students who had never smoked. They found that kids who used e-cigs were more likely than non-users to smoke cigarettes or other tobacco products over the next year.

But, CDC stats on teen smoking show that while use of e-cigs went up to 24% in 2015, cigarette smoking dropped to an historic low -- to just under 11%.

The trend is reassuring, Benowitz says.

### Regulations

The FDA is regulating e-cigarettes and tobacco products such as hookah tobacco and cigars in the same way as cigarettes and smokeless tobacco. Key rules include:

- No one under age 18 can purchase them -- in stores or online.
- Sellers will need to check ID of anyone under 27 years of age.
- The products can't be sold in vending machines, except for in adult-only facilities.
- Free samples are banned.

E-cigarettes placed on the market after 2007 have to go through an FDA safety and approval review to enter or stay on the market. That could take years, but products can be sold while they wait for approval.

Critics say the rules will crush small makers of e-cigs because they can't afford the time and lawyer fees to get through the process.

The American Academy of Pediatrics and the American Lung Association are glad to have the rules. But, Sward adds, "We certainly thought [the FDA] should have gone farther -- ending the sale of flavored products." Some come in candy and fruity flavors that appeal to kids and teens.

### What Else You Should Know About E-Cigs

**They can blow up.** There were 134 reports of e-cigarette batteries overheating, catching fire, or exploding between 2009 and January 2016, according to Michael Felberbaum, an FDA spokesperson. Some people were seriously hurt. The new rules will allow FDA to review the safety of batteries and eventually take action to protect the public.

**They can poison people.** Liquid nicotine is especially dangerous to young kids. Reports of poisonings are on the rise. Keep all e-cigarettes out of reach of little ones.

The FDA plans on future rules that will require nicotine warnings and child-resistant packaging for products with e-liquids, Felberbaum says.