

The Vape Deception

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✓ Fact Checked

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STORY AT-A-GLANCE

- › More than 2.5 million youth used vaping products in 2022, including 14.1% of high school students and 3.3% of middle school students. Most use flavored e-cigarettes. Fruit flavors are the most popular, followed by candy and dessert flavors
- › Flavored e-cigarettes appear to be the most harmful. Research shows vaping with mango- or mint-flavored pods increases the inflammatory process in multiple organ systems, with the most striking changes happening in the brain, which may contribute to behavior changes and mood disorders
- › E-cigarette vapor disables the ability of macrophages to engulf bacteria and protect pulmonary function. This type of damage increases lung cells vulnerability to dust, bacteria and allergens. It also increases our risk of chronic obstructive pulmonary disease
- › Single-use and refillable vaping cartridges have been found to contain fungal contaminants associated with asthma, COPD, reduced lung function and inflammation of the lungs
- › One of the largest-ever studies conducted on the health effects of vaping found that adult e-cig smokers have a significantly higher chance of heart disease and mental health problems than nonsmokers

While many are under the impression that e-cigarettes or vaping is safer than smoking traditional combustible cigarettes, evidence is heavily stacked against this notion.

Unfortunately, this information isn't reaching the masses, and teens are becoming addicted to vaping in droves. As reported by the Kaiser Family Foundation (KFF):¹

"When the FDA [U.S. Food and Drug Administration] first asserted the authority to regulate e-cigarettes in 2016, many people assumed the agency would quickly get rid of vapes with flavors like cotton candy, gummy bears, and Froot Loops that appeal to kids.

Instead, the FDA allowed all e-cigarettes already on the market to stay while their manufacturers applied for the OK to market them. Seven years later, vaping has ballooned into an \$8.2 billion industry, and manufacturers are flooding the market with thousands of products – most sold illegally and without FDA permission – that can be far more addictive ...

[T]oday's vapes have become 'bigger, badder, and cheaper' than older models, said Robin Koval, CEO of the Truth Initiative, a tobacco control advocacy group. The enormous amount of nicotine in e-cigarettes – up 76% over five years – can addict kids in a matter of days, Koval said.

E-cigarettes in the U.S. now contain nicotine concentrations that are, on average, more than twice the level allowed in Canada and Europe. The U.S. sets no limits on the nicotine content of any tobacco product.

'We've never delivered this level of nicotine before,' said Matthew Myers, president of the Campaign for Tobacco-Free Kids, which opposes youth vaping. 'We really don't know the long-term health implications.'"

Vaping Has Skyrocketed Among Youth

According to U.S. Centers for Disease Control and Prevention data,² more than 2.5 million youth used vaping products in 2022, including 14.1% of high school students and 3.3% of middle school students. Most of these children (84.9%) reported using flavored e-cigarettes, with fruit flavors being the most popular at 69.1%, followed by candy and dessert flavors at 38.3%.

Disturbingly, flavored e-cigarettes appear to be the most harmful, so in addition to appealing to children, they may also cause the most harm to health.

For example, research³ published in April 2022 found that vaping with mango- or mint-flavored pods increases the inflammatory process in multiple organ systems, with the most striking changes happening in the brain, which may contribute to behavior changes and mood disorders. They also found early signs of cardiovascular disease after just three months of inhaling flavored Juul e-cigs three times a day.

Illegal Vaping Products Are Flooding the Market

In January 2020, the FDA finalized its enforcement policy on unauthorized flavored cartridge-based e-cigs that appeal to children. In a press announcement,⁴ the agency warned that companies must immediately cease manufacture, distribution and sale of all flavored cartridge-based e-cigarettes, with the exception of tobacco flavor and menthol.

As of August 8, 2016, all cartridge-based e-cigarette products are required to apply for and receive premarket authorization from the FDA's tobacco authority⁵ Since then, the FDA has received some 26 million applications,⁶ a volume the agency simply hasn't been able to handle.

As a result, illegal products have flooded the market. Many manufacturers never even bother to apply for authorization. They simply cash in for as long as they can.

What's more, since the FDA's policy only applies to cartridge-based vaping products, sale of disposable products, which were foolishly exempted from the flavor ban, have skyrocketed by 1,500% since early 2020 alone.⁷ According to the FDA, it has rejected all but 23 premarket review applications received so far, and all the approved products were for traditional tobacco flavors intended for adult smokers.⁸

To rein in the rise of illegal vaping products, the FDA also recently ramped up its enforcement efforts, issuing warning letters to 1,500 manufacturers and 120,000 retailers for selling illegal products or selling to customers under 21.⁹

It also fined a dozen e-cig manufacturers around \$19,000 each,¹⁰ and ordered an import ban on three disposable brands (Elf Bar, Esco Bar and Breeze).¹¹ In October 2022, the Justice Department also launched lawsuits against half a dozen e-cig manufacturers on the FDA's behalf.¹²

Still, the three import brands banned and the six manufacturers sued are but a drop in the bucket, as there are hundreds of brands selling unauthorized/illegal products.

Vaping Linked to Serious Health Risks

While e-cigarettes do not expose you to the thousands of toxic compounds found in conventional cigarettes, researchers are only beginning to understand the toxicities involved in smoking e-cigarettes, and based on what they've found so far, vaping is likely just as dangerous as conventional cigarettes.

For example, a 2018 study in *BMJ Thorax*^{13,14} found vapor from e-cigs radically boosts production of inflammatory chemicals and impairs the activity of macrophages, leading researchers to conclude it may damage vital immune system cells.

E-cigarette vapor disabled the ability of macrophages to engulf bacteria and protect pulmonary function. This type of damage increases lung cells vulnerability to dust, bacteria and allergens. It also increases your risk of chronic obstructive pulmonary disease (COPD).

Many of these observed effects are like those seen in people who smoke traditional cigarettes and those with chronic lung disease. Impurities and contaminants can also damage your lungs.

A 2019 study^{15,16} found 27% of the 75 single-use and refillable vaping cartridges tested contained microbial agents and 81% contained glucan, a substance found in the cell walls of most fungi. Exposure to these impurities has been associated with asthma, chronic obstructive lung disease, reduced lung function and inflammation of the lungs.

The products tested were segmented into four flavor categories: tobacco, menthol, fruit and unspecified others. They were then screened for the presence of endotoxin and glucan. Endotoxin concentrations were higher in the fruit-flavored products, suggesting raw materials used in production may be the source of contamination.

One of the largest-ever studies conducted on the health effects of vaping, presented at the 2019 American College of Cardiology's Annual Scientific Session,¹⁷ revealed that adult e-cig smokers have a significantly higher chance of heart disease and mental health problems than nonsmokers, even after controlling for known risk factors such as body mass index and high blood pressure.

Compared to nonsmokers, vapers were 34% more likely to have a heart attack, 25% more likely to have coronary artery disease and 55% more likely to suffer from depression or anxiety than nonsmokers with the same risk factors.

E-Cigs Contain Toxic Metals and Chemicals

Researchers have also shown that e-cig vapors and aerosols contain unsafe levels of lead, nickel, chromium and manganese,¹⁸ all of which are highly toxic when inhaled. These heavy metals are not necessarily present in the liquid itself but, rather, originate from the heating coils within the e-cig tank.

Nearly half the vapor samples had lead concentrations higher than limits set by the U.S. Environmental Protection Agency.¹⁹ Concentrations of the other three metals either approached or exceeded safety limits set by the EPA. Arsenic was also detected in 10 of the 56 devices tested.

As noted by the researchers, the heating coils are made of nickel, chromium and several other metals, making this the most obvious source of contamination. However, the source of the lead remains a mystery.

Similarly, a study commissioned by Japan's Health Ministry found acetaldehyde and formaldehyde in the vapor produced by several types of e-cig devices,²⁰ and at least one brand had more than 10 times the level of carcinogens found in a traditional cigarette.

The FDA has also detected the antifreeze chemical diethylene glycol in e-cigarette cartridges, which is linked to cancer,²¹ and second-hand smoke from e-cigs may contain at least 10 chemicals that have been identified on California's proposition 65 list of reproductive toxins and carcinogens.²²

Protect Your Children

Previous investigations have revealed that teenagers who use e-cigs are more likely to start smoking regular cigarettes.^{23,24} The reverse is not true, however, meaning teens who start out smoking combustible cigarettes do not tend to switch to e-cigs.

This, even though e-cigarettes are often marketed as a way to quit smoking conventional cigarettes. Unfortunately, many parents are unaware that their children are vaping, as the vapors don't have that distinct cigarette smell.

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Common signs that your child is vaping include:

Increased thirst	Nosebleeds	Throat-clearing
Increased irritability	Mood swings	Mouth sores
Trouble breathing	Unexplained cough	Fruit or candy-like smells

Tobacco use is a leading cause of preventable death,²⁵ and since vaping is a gateway to traditional tobacco products, it's crucial to communicate the dangers of use to your children.

Nicotine exposure during adolescence, regardless of the source, also increases your child's risk of alcohol abuse disorders and other addictive behaviors in adulthood by changing the neurological circuitry in the brain within the reward pathway.²⁶

How to Make Quitting Smoking Easier

Whether you're smoking combustible cigarettes or e-cigs, please consider quitting. I believe the "secret" to quitting smoking is to work on other aspects of your health first, which will make quitting mentally and physically easier.

Exercise, for example, is an important part of this plan. Research has shown that people who engage in regular strength training double their success rate at quitting smoking compared to those who don't exercise.²⁷ Healthy eating is another crucial factor to improving your health and strengthening your ability to quit. In short, if you want to quit, here are three basic tips to get started:

- **Eat real food** — Detailed guidance can be found in my free [comprehensive nutrition plan](#).
- **Develop a well-rounded exercise regimen** — This is your ally to fighting disease and to quitting smoking. Strength training is an important part, but also remember to incorporate high-intensity interval exercises, core-strengthening exercises, stretching and regular non-exercise movement like walking, along with cutting back on sitting.
- **Find a healthy emotional outlet** — Many use exercise, meditation or relaxation techniques for this, and these are all great. I also recommend incorporating [Emotional Freedom Techniques \(EFT\)](#). This can help clear out emotional blockages from your system (some of which you might not even realize are there), thus restoring your mind and body's balance and helping you break the addiction and avoid cravings.

Once you are regularly doing these three things, then you can begin to think about quitting smoking. At this point many are ready to try quitting "cold turkey." And, again, if

you're a parent, talk with your children about the risks of smoking, smokeless tobacco and e-cigarettes. The easiest path to not smoking is to avoid starting in the first place.

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