



# Beyond the Haze: Understanding the Health Impacts of E-cigarettes

E-cigarettes are devices that heat a liquid into an aerosol that the user inhales. Using an e-cigarette is sometimes called “vaping.” The liquid usually has nicotine and flavoring in it, and other additives. The nicotine in e-cigarettes and regular cigarettes is addictive. E-cigarettes are considered tobacco products because most of them contain nicotine, which comes from tobacco.

Besides nicotine, e-cigarettes can contain harmful and potentially harmful ingredients, including:

- ultrafine particles that can be inhaled deep into the lungs
- flavorants such as diacetyl, a chemical linked to serious lung disease
- volatile organic compounds
- heavy metals, such as nickel, tin, and lead

## Important Things to Know

- There is still research being done to understand the long-term health effects.
- If you’ve never smoked or used other tobacco products or e-cigarettes, don’t start.
- E-cigarettes are not safe for youth, young adults, pregnant adults, as well as adults who do not currently use tobacco products.
- E-cigarettes can be used to deliver marijuana and other drugs.
- E-cigarettes come in many shapes and sizes. Most have a battery, a heating element, and a place to hold a liquid.
- E-cigarettes are known by many different names. They are sometimes called “e-cigs,” “e-hookahs,” “mods,” “vape pens,” “vapes,” “tank systems,” and “electronic nicotine delivery systems (ENDS).”
- Some e-cigarettes are made to look like regular cigarettes, cigars, or pipes. Some resemble pens, USB sticks, and other everyday items. Larger devices such as tank systems, or “mods,” do not resemble other tobacco products.

## What are the health effects of using e-cigarettes?

E-cigarettes are still fairly new and scientists are still learning about their long-term health effects. We do know that most e-cigarettes contain nicotine, which has known health effects. According to research conducted by the US Department of Health and Human Services we know the following health effects:

- Nicotine is highly addictive.
- Nicotine is toxic to developing fetuses.
- Nicotine can harm adolescent and young adult brain development, which continues into the early to mid-20s.
- Nicotine is a health danger for pregnant adults and their developing babies.
- E-cigarettes can cause unintended injuries.
  - Defective e-cigarette batteries have caused fires and explosions, some of which have resulted in serious injuries. Most explosions happened when the e-cigarette batteries were being charged.
- Besides nicotine, e-cigarette aerosol can contain substances that harm the body.
  - This includes cancer-causing chemicals and tiny particles that reach deep into lungs. However, e-cigarette aerosol generally contains fewer harmful chemicals than smoke from burned tobacco products.



**The scariest thing about e-cigarettes is that there are so many things that we don’t know!**



## DID YOU KNOW?

**Nicotine affects brain development, which continues to age 25.**



Resources:

Centers for Disease Control and Prevention and U.S. Department of Health and Human Services

## Are e-cigarettes less harmful than regular cigarettes?

According to current research, yes. However, this doesn't mean that e-cigarettes are safe! E-cigarette aerosol generally contains fewer toxic chemicals than the deadly mix of 7,000 chemicals in smoke from regular cigarettes. However, it is important to know that e-cigarette aerosol is not harmless. It can contain harmful substances, such as nicotine, heavy metals like lead, volatile organic compounds, and cancer-causing agents.

## Who is most commonly using e-cigarettes?



If you guessed youth, you are correct. E-cigarettes are the most commonly used tobacco product among youth. Below is what the numbers tell us from current research:

- In 2023, 2.13 million U.S. middle and high school students used e-cigarettes in the past 30 days, including 4.6% of middle school students and 10.0% of high school students. (National Youth Tobacco Survey)
- In 2022, 2.55 million U.S. middle and high school students used e-cigarettes in the past 30 days, including 3.3% of middle school students and 14.1% of high school students. (National Youth Tobacco Survey)
- In 2021, 4.5% of U.S. adults currently used e-cigarettes. (CDC Morbidity and Mortality Report)
- In 2019, among adults who currently used e-cigarettes overall, 36.9% also currently smoked cigarettes, 39.5% formerly smoked cigarettes, and 23.6% had never smoked cigarettes. (CDC Morbidity and Mortality Report)
- Among adults who currently used e-cigarettes, the percentage who have never smoked cigarettes is highest among those aged 18–24 years (56.0%), and is lower in older age groups. (CDC Morbidity and Mortality Report)

### **Tips for Parents - Talk with Your Teen about E-cigarettes**

Believe it or not, you can influence your teen's decision about whether to use e-cigarettes. Even if you have used tobacco yourself, your teen will listen if you discuss your struggles with nicotine addiction. Be clear that you don't approve of them smoking or using e-cigarettes, and that you expect them to live tobacco-free.

### Before you chat with your teen:

- Know the facts! Understand the impact e-cigarettes have on youth.
- Be patient and ready to listen! Avoid criticizing and provide a safe encouraging place for open dialogue.
- Remember, your goal is to have a conversation... not to deliver a lecture.
- It is OK for your conversation to take place over time. It doesn't have to happen all at once.
- Set a positive example by being tobacco-free. If you make the decision to use tobacco products, it is never too late to quit! For free resources on how to stop, [visitsmokefree.gov](https://visitsmokefree.gov) or call 1-800-QUIT-NOW.



### How do I start the conversation with my teen?

- Find the right moment! A more natural discussion will increase the likelihood that your teen will listen. Rather than saying "we need to talk," you might ask your teen what they think about a situation you witness together, such as seeing someone use an e-cigarette in person or in a video or passing an e-cigarette shop when you are walking or driving.
- Ask for support! If you aren't sure where to begin, that's OK. Reach out to your health care provider to talk to your teen about the risks of e-cigarettes. You might also suggest that your teen talk with other trusted adults, such as relatives, teachers, faith leaders, coaches, or counselors whom you know are aware of the risks of e-cigarettes. These supportive adults can help reinforce your message as a parent!

### Resources to Help You Better Understand E-Cigarettes

- Centers for Disease Control and Prevention --> <https://shorturl.at/mnCQ0>
- Tobacco Free Kids --> <https://shorturl.at/acepA>
- U.S. Department of Health and Human Services --> <https://shorturl.at/wHPU2>
- U.S. Food and Drug Administration --> <https://shorturl.at/cyNO6>

