

Understanding E-Cigarettes and Vaping

What are e-cigarettes?

E-cigarettes are devices that allow users to breathe in liquid that has nicotine in it. They are also known as electronic nicotine delivery systems. They may look like regular cigarettes, cigars, or pipes. Some are even made to look like everyday items, such as flashlights, pens, or USB flash drives. This can make it easy for teens to hide these devices from their parents or teachers.

E-cigarettes may be harmful. They may have substances that can cause cancer. They have also been linked to severe lung conditions. Some people have died from these lung conditions. Experts are not sure exactly what has caused these life-threatening illnesses. They don't seem to be caused by lung infections. But all of the people who developed these lung conditions had used e-cigarettes.

Due to these and other health risks, experts advise people not to use e-cigarettes.

How do e-cigarettes work?

An e-cigarette has 3 parts. It has a battery, a heating device, and a cartridge or tank. The part that heats up is called an atomizer. To use it, you put in a cartridge or fill the tank with a liquid. This liquid may contain different substances such as:

- Nicotine
- THC and CBD oils both active ingredients in marijuana
- Other substances and additives

The type of substances in the liquid, and the amounts, may vary with each product. One of the dangers of e-cigarettes is that users often don't know what is actually in the liquid.

When the e-cigarette is puffed, the atomizer heats up. It turns the liquid in the tank or cartridge into a vapor (aerosol). You then breathe in this vapor. This is called vaping. It mimics real cigarette smoking. Other people nearby can also breathe in this vapor. Experts don't yet know what the effects are of secondhand vaping smoke. But there is concern that this may also be harmful.

Safety concerns

E-cigarettes are dangerous for kids, teens, young adults, or pregnant women. They are not considered safe for adults who don't smoke.

E-cigarettes may contain harmful substances that cause cancer. E-cigarettes have also been linked to severe lung disease. The exact cause is not clear yet. But all of the people who developed these lung conditions had vaping in common. Some people have died from these illnesses. Most people who became sick used e-cigarettes that contained the chemical THC. This is the main active ingredient in marijuana. Some people became ill after using e-cigarettes with both THC and nicotine. Others became sick after using only nicotine e-cigarettes.

People who do use e-cigarettes should not buy e-cigarette products off the street. They may not be safe. They are more likely to contain unknown amounts of THC, CBD, and other harmful substances. Users should also not modify e-cigarettes or add substances to them that are not made by the e-cigarette manufacturer and not purchased from a store.

Signs to watch for

Some of the people who became sick after vaping had symptoms of severe lung disease. These symptoms can occur slowly over a few days or weeks. They may become so serious that you need to be hospitalized. Call your healthcare provider right away if you use e-cigarettes and have these symptoms:

- Cough, shortness of breath, or chest pain
- Nausea, vomiting, or diarrhea
- Extreme tiredness (fatigue)
- Fever of 100.4°F (38°C) or higher

Nicotine and other harmful chemicals

Users of e-cigarettes are inhaling nicotine. This is a very addictive substance. That ability to addict is a special concern for young users. Teens who get addicted to e-cigarettes may switch to regular cigarettes. This can then lead to the serious health problems caused by smoking tobacco.

At high doses, nicotine can cause dizziness and vomiting. Little research has been done on e-cigarettes. Because of this, experts don't know how much nicotine or other possibly harmful chemicals users are inhaling. Users who refill their own e-cigarette cartridges are at a greater risk for unsafe levels of nicotine.

Nicotine poisoning is also a big concern in children. Children younger than age 5 have been harmed after accidentally coming into contact with the nicotine liquid.

E-cigarettes may contain other harmful chemicals that can cause lung and heart disease. These chemicals include acetaldehyde, acrolein, and formaldehyde. The chemical acrolein is used in weed killers and has been linked to severe, acute lung problems and asthma, COPD, and lung cancer.

It's hard to know exactly what chemicals are in an e-cigarette. That's because most e-cigarette products don't list all of the ingredients. In addition, sometimes these products are changed or modified. These modified products are often more likely to have possibly harmful or illegal substances. Users should only buy e-cigarette products from a store, not from the street. It's not safe to add substances to e-cigarettes that are not made by the manufacturer.

Another problem with e-cigarettes is that they can explode in a person's pocket or face. These explosions have been described as "flaming rockets" and can cause severe injuries.

Can e-cigarettes help smokers quit?

E-cigarettes are not approved by the FDA as an aid to quit smoking. So far, research shows limited evidence that e-cigarettes can actually help with quitting smoking. They may also contain substances that cause cancer or life-threatening lung conditions.

A number of quit-smoking tools are available that have been approved by the FDA and CDC. If you are trying to quit smoking, see your healthcare provider for help, and call 800-QUIT NOW (800-784-8669).