According to a 2019 survey, fewer high school students smoke cigarettes than ever before. But at the same time, the number of high schoolers who use e-cigarettes has risen at an alarming rate. Some teens assume that using these devices—also known as vaping—is a safe alternative to smoking. After all, e-cigarettes can come in flavors, and the mist they produce looks different from the toxic smoke from traditional cigarettes. So how bad can e-cigarettes really be?

The truth is that using e-cigarettes exposes teens to very real—and very scary—health risks. Vaping nicotine (found in most devices) can harm your brain and cause addiction.¹ There is also growing evidence that the chemicals found in e-cigarettes can cause serious damage to your lungs.

**Lung Damage and Chemicals**
E-cigarettes are battery-operated devices that create an aerosol a user inhales. When a person puffs on an e-cigarette, a liquid inside heats up and becomes an aerosol mixture typically containing nicotine, flavorings, and toxic chemicals like acrolein. The e-liquids often come in flavors, but the chemicals used to create these flavors can be harmful to your lungs.
E-cigarette aerosol may also contain metals such as nickel, lead, chromium, tin, and aluminum, and chemicals like formaldehyde, which is known to cause cancer. Breathing in e-cigarette aerosol delivers these chemicals to your lungs where they can cause damage. The effects may be long-lasting—even deadly.

In 2019, the Centers for Disease Control and Prevention (CDC) and the U.S. Food and Drug Administration (FDA) reported an outbreak of serious lung illnesses in nearly every state. Thousands of people, including many teens and young adults, got sick after using vaping products, including e-cigarettes. Patients reported symptoms like difficulty breathing and chest pain. Some people ended up with permanent lung damage, and multiple people died. As the CDC and FDA continue to investigate the cause or causes of the outbreak, one finding is clear: Using any type of vaping product can seriously harm your health.

**Delivering Dangerous Nicotine**

Toxic chemicals aren’t the only harmful thing a person breathes in when they vape. Most devices, including all Juuls, contain a drug called nicotine. This is the same highly addictive chemical found in other tobacco products like traditional cigarettes and smokeless tobacco (“dip”). In fact, one Juul pod contains as much nicotine as a whole pack of cigarettes. Using nicotine causes changes in the brain that make a person crave more of the drug. When someone vapes, nicotine gets into their bloodstream through their lungs and travels to their brain within 10 seconds. The drug causes a surge of a brain chemical called dopamine, which is known as a reward chemical. That means it makes the person feel good, encouraging them to vape some more. This can lead to addiction.

Teens are even more vulnerable to addiction than adults because the brain continues to develop through a person’s mid-twenties. Exposing an adolescent’s brain to nicotine can cause problems with attention, learning, and memory that promote addiction to nicotine. Studies also show that teens who vape are more likely to start smoking traditional cigarettes. One likely explanation is that they’ve become addicted to nicotine.

**What’s Being Done?**

Health experts are concerned about youth vaping because these products are dangerous and teens are becoming addicted. More than one in four high school students currently use e-cigarettes. Health officials continue to crack down on illegal sales to minors and hold retailers and manufacturers accountable for marketing practices. The goal: to reduce the number of teens being exposed to the health hazards of vaping.

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