



Updated by:

Azza H. Ahmed

*DNSc, IBCLC, CPNP, FAAN,
FILCA*

Professor

Purdue University

School of Nursing

College of Health and

Human Sciences

Deborah Spoerner

DNP, MSN, APRN, CPNP

Assistant professor

Butler University

College of Pharmacy and

Health Sciences

Previous contributions by:

Kelly Stephenson

Undergraduate honors

student in health and

kinesiology

Purdue University

College of Health and

Human Sciences

The Dangers of Vaping and Oral Nicotine Use Among Youth

E-cigarettes, also known as vapes, remain the most used nicotine product among U.S. youths, ahead of nicotine pouches. Flavored nicotine-infused gummies, nontherapeutic gum, lozenges, and tablets are gaining popularity.

What Are Electronic Cigarettes?

Electronic cigarettes produce aerosol vapor by heating liquid inside the device. Users inhale the aerosol into their lungs through the device. The aerosol usually includes nicotine, flavorings and other chemicals. The devices, known as "e-cigs," "e-hookahs," "mods," "vape pens" or "vapes," can look like everyday items, such as pens or USB drives, or like regular cigarettes, cigars or pipes. They are often disposable or single use and can be easily concealed from parents, teachers and authority figures.

How Do Electronic Cigarettes Work?

Electronic cigarettes usually have four components:

- A cartridge holds a liquid solution that consists of nicotine, flavorings, and other chemicals;
- A heater or vaporizer;
- A power source (generally a rechargeable battery); and
- A mouthpiece from which users inhale the vapor.

Research indicates that many teens do not know the liquid in the device contains nicotine, a highly addictive chemical. The liquid can also contain volatile organic compounds, ultrafine particles, cancer-causing chemicals, heavy metals (nickel/tin/lead), and flavorings. One chemical, diacetyl, is common and is linked to severe lung damage.

What Are Oral Nicotine Products?

Nicotine pouches are small microfiber pouches that contain a powder made of nicotine, flavorings, cellulose and other ingredients. These pouches and oral products are often referred to as synthetic nicotine or non-tobacco nicotine (NTN) products and may be marketed as “tobacco-free” or “smokeless” products.

People typically put pouches between their lips and gum, where the powder dissolves in the mouth and nicotine is quickly absorbed into the bloodstream. Oral nicotine products are increasingly popular because they are discreet, odorless, rapidly absorbed and available in many flavors and concentrations. These products can contain high levels of nicotine.

Who Is at Risk?

Vapes and nicotine pouches have been the most used tobacco products among middle and high school students in the U.S. for a decade.

Among middle and high school students, 38.9% and 36.6% of current users, respectively, used more than one type of tobacco product in 2024.

What Are the Health Hazards for Teenagers?

Most teenagers do not recognize the negative health effects of vaping and oral nicotine products. They believe e-cigarettes, which contain nicotine, are safe and that oral nicotine products are harmless because they do not involve smoke or vapor.

For teenagers, the use of e-cigarettes and oral nicotine products can cause major issues in brain development and respiratory function, increased cancer risk and oral health problems. External safety risks include fires and explosions caused by overheating and battery failure with e-cigarettes.

Brain Development and Addiction

A teenager’s brain is rapidly changing and developing new connections. Nicotine changes the way the brain is formed and has been shown to harm parts of the brain that control attention and learning. E-cigarette use affects brain development by increasing the risk of nicotine addiction, mood disorders and the permanent lowering of impulse control. Being addicted to nicotine can increase the risk of teenagers becoming addicted to more dangerous substances, such as cocaine, marijuana or alcohol.



Youths can start showing signs of nicotine addiction quickly, even if they are not using tobacco products regularly or daily. Nicotine addiction may include feeling irritable, jumpy, restless or anxious, feeling sad or down, having trouble sleeping or concentrating, feeling hungry or craving nicotine.

Respiratory Problems

Adolescent e-cigarette users are at increased risk of coughing, wheezing, lung tissue injuries/damage, and asthma exacerbations. Flavorings used in e-cigarettes (such as diacetyl) have been shown to damage lung tissues. Diacetyl is reported to cause what is commonly called “popcorn lung,” an irreversible condition that causes the thickening and narrowing of airways.

Other Health Issues

Aside from raising cancer risk, nicotine in any form can affect your health in the following ways:

- **Oral health risks include** gum irritation and recession, tooth decay and cavities, and dry or sore mouth.
- **Cardiovascular health risks include** increased heart rate and blood pressure, greater risk of heart disease and stroke, and damage to blood vessels.
- **General symptoms may include** nausea, headaches, dizziness, hiccups, upset stomach, or mental health concerns, including depression and anxiety.

According to CDC, nicotine is highly addictive. There are no safe tobacco or synthetic nicotine products, including all forms of e-cigarettes, oral pouches, gummies, gum, lozenges, and tablets.

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