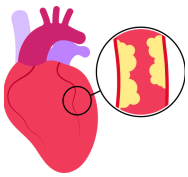
The truth about... Nicotine and Cardiovascular Disease

The American Heart Association is committed to ending addiction to all commercial tobacco and nicotine products. To reach that goal, **we need to minimize the use of all combustible tobacco products and ensure e-cigarettes** and other newer products do not addict a new generation to nicotine. Oral nicotine pouches and heat-not-burn products represent an additional threat according to an American Heart Association policy statement published in December 2024.

Nicotine is a highly addictive chemical that can harm heart and brain health.

Nicotine can **elevate blood pressure** and **heart rate**, forcing the heart to work harder. Over time, damage from high blood pressure can lead to **chronic conditions,** including **heart attack, stroke** and **heart failure**.



Nicotine can cause a **narrowing of blood vessels**, or **vasoconstriction**, which **limits the flow of oxygen-rich blood** throughout the body.

Nicotine contributes to **peripheral artery disease (PAD)** and **increases blood clotting,** which can cause **coronary artery disease, heart attack** and **stroke.** Left untreated, PAD can lead to **gangrene** and **amputation.**

1. Nicotine may **temporarily** induce stimulation and pleasure and reduce stress and anxiety. It may also **temporarily** improve concentration, reaction time and performance of certain tasks, particularly for adults.
2. As nicotine leaves the system, numerous withdrawal symptoms - including **irritability, depressed mood, restlessness, anxiety, problems getting along with friends and family, difficulty concentrating, increased hunger and eating, insomnia and craving for nicotine** - arrive.
3. The symptoms are alleviated once nicotine is again used, **feeding the addiction cycle.**

With continued use, a person builds a tolerance requiring higher nicotine content or more frequent use to experience the same physical and mental effects. Over time, tolerance to this new dosage occurs, requiring another increase in the substance use.

Nicotine and the adolescent brain:

Nicotine can have a profound and long-lasting effect on the adolescent brain, including negatively affecting executive function, impulse control, attention span, working memory and learning. Adolescents are more susceptible to nicotine addiction even at low doses, which makes the higher doses in newer tobacco products even more concerning.

Many who use tobacco mistakenly believe tobacco products can relieve stress or anxiety. However, once the cycle of withdrawal symptoms starts, the person feels temporary relief if they consume nicotine again. **This gives a false sense that nicotine relieves stress and anxiety when it is actually the cause.**

Studies have suggested that nicotine alters fear and anxiety responses, and contributes to the development, maintenance and recurrence of anxiety disorders.

Nicotine during and after pregnancy

Nicotine and other chemicals in tobacco products can significantly harm a child, both before and after birth. Tobacco use is always dangerous, but using tobacco during pregnancy puts their life and the unborn child at risk:

A **higher risk of miscarriage** and **ectopic pregnancy.**

2x more likely to **experience abnormal bleeding** during pregnancy and delivery.

Heart disease during pregnancy can create a **higher lifetime risk of heart disease** after delivery and heart disease is the **leading killer of new moms.**

Slows fetal development and **can cause low birth weight**, even in full-term pregnancies.

Can cause premature birth, which can lead to:

Difficulty feeding

Breathing challenges that can last into childhood and adolescence

Increased risk of the **brain damage** that causes cerebral palsy

Hearing and eyesight problems

Developmental delays, including **obstacles to gaining language, thinking and movement skills**

A greater chance of having **physical birth defects** such as cleft lip, cleft palate or both

Elevated odds of dying from sudden infant death syndrome (SIDS)

The role of nicotine replacement therapy in cessation:

Some nicotine products have been approved by the U.S. Food and Drug Administration (FDA) as smoking cessation products. These products are **scientifically developed** to help people **reduce their nicotine intake** and ultimately **quit nicotine entirely** through a process known as nicotine replacement therapy (NRT). They have also gone through rigorous testing and approval by the FDA. These products provide controlled, low doses of nicotine in a way that reduces dependence over time. **This is in stark contrast to e-cigarettes and nicotine pouches, which are designed to keep the people who use these products addicted by delivering nicotine in highly efficient ways.**

Additionally, NRT has undergone rigorous clinical trials to provide scientific evidence that it is an effective tool for quitting nicotine altogether. E-cigarettes and nicotine pouches have been given a pathway to demonstrate that they help people quit, yet manufacturers have chosen not to pursue this route. Instead of proving their products support cessation, they continue to market them in ways that encourage lifelong addiction and poly-use (use of two or more nicotine products).