

Vapes replace cigarettes as the top nicotine threat to young children

by Rutgers University, USA



While cigarette exposures are decreasing for young children, electronic nicotine products are putting toddlers at new risk of inhalation, according to Rutgers Health researchers. Their study, published in *JAMA Network Open*, was the first to assess trends in young children's nicotine exposures across all types of products.

Researchers at the New Jersey Poison Control Center, based at Rutgers New Jersey Medical School, USA, used the [National Poison Data System](#) to analyze more than 92,000 reported nicotine exposures in children ages 5 and younger between 2016 and 2023 to understand how the rise of newer products—specifically disposable e-cigarettes and nicotine pouches—has changed the risks for young children.

They found that while tobacco exposures from conventional products such as cigarettes decreased by 43%, [electronic cigarette-related incidents](#) have increased 243% over the past eight years and often involved children who inhaled the vapors directly from the devices. They also found children exposed to e-cigarettes were more likely to require a visit to a health care facility compared with those exposed to cigarettes.

"This significant spike in children breathing in these substances tells us the risk has changed: It's no longer just about a toddler swallowing something they found on the floor," said Perry Rosen, lead author who conducted the research at the New Jersey Poison Control Center before becoming a medical student at New York Institute of Technology College of Osteopathic Medicine. "Many recent cases involve children actively using e-cigarette devices after gaining access to them."

Young children naturally mimic the behaviors they see around them. "When children see caregivers or older family members vaping, they may copy that behavior—bringing the device to their mouth and inhaling—without any understanding they are exposing

themselves to a harmful substance," said Diane Calello, executive and medical director of the New Jersey Poison Control Center.

Unlike cigarettes, these devices are often ready to use, [brightly colored](#), require little effort to activate, and appear more like toys than a harmful product.

Even moderate ongoing exposure among users of [vaping products](#)—which can include adolescents—has been associated with lasting health effects on developing lungs, including increased risk of bronchitis and worsening asthma, although such effects have not yet been reported in young children.

Despite federal laws passed in 2019 and 2020 to raise the minimum purchase age and restrict certain flavors, the upward trend in childhood poisonings has continued.

In New Jersey, liquid nicotine can only be sold in child-resistant containers under the New Jersey Liquid Nicotine Child-Resistant Container Act (N.J.S.A. 2A:170-51.9), which adopts federal safety standards requiring packaging that young children cannot easily open. This state law aligns with the federal Child Nicotine Poisoning Prevention Act of 2015, which mandates child-resistant "special packaging" for all liquid nicotine products nationwide. However, while these may prevent a child from swallowing the liquid, children may still be lured by an enticing device and mimic the behavior they see—inhaling the nicotine.

She emphasized that existing protections focus largely on liquid nicotine ingestion, not behavioral exposure. "Child-resistant packaging may prevent a toddler from swallowing liquid nicotine, but it does nothing to stop a child from copying what they see an adult do," Rosen said. "That's why we need safety standards that address the device itself, not just the container."

"Current [laws](#) which focus on child-resistant packaging for nicotine liquids, are no longer enough," Calello said. "This study underscores the need for [safety regulations](#) at the device level. For example, manufacturers should be required to include flow restrictors or designs that make it more difficult for a child to activate a device."

Publication details

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