



# Electronic Cigarettes: Brief Overview of Key Issues

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*A significant number of adults and youth are using electronic cigarettes, which provide a relatively new way to deliver the addictive substance nicotine without burning tobacco. We have much more to learn about e-cigarettes, and many questions remain about the long-term health effects of these products. According to the Surgeon General, the CDC, and the 2018 National Academies of Sciences, Engineering, and Medicine (NASEM) report on e-cigarettes, e-cigarettes deliver fewer toxins than combustible cigarettes, but that doesn't mean that they are safe or without risk. In a 2020 report, the Surgeon General found that "the long-term health effects of using these products remain unknown, and short-term risks are only slowly coming into focus." The Surgeon General previously called for "aggressive steps to protect our children from these highly potent products that risk exposing a new generation of young people to nicotine."*

## Youth Use of E-cigarettes

Nearly two years ago, the Surgeon General declared e-cigarette use among youth "an epidemic in the United States." Despite recent declines, youth e-cigarette use rates remain alarmingly high and e-cigarette companies continue addicting kids with flavored products. The 2018 NASEM Report also found that e-cigarette use among youth and young adults increases the risk of ever using regular cigarettes.

- **Youth e-cigarette use remains a public health crisis.**

E-cigarettes are the most commonly used tobacco product among youth. Among high school students, e-cigarette use declined to 19.6 percent in 2020, after increasing by 135 percent from 2017 to 2019 (from 11.7% to 27.5%). 3.6 million kids still use e-cigarettes – the same number as when the U.S. Surgeon General called youth e-cigarette use an "epidemic" in 2018.

- **Marketing and flavors play a key role in youth use of e-cigarettes.**

The 2016 Surgeon General's report found that, "E-cigarettes are marketed by promoting flavors and using a wide variety of media channels and approaches that have been used in the past for marketing conventional tobacco products to youth and young adults."

E-cigarettes are available in literally thousands of flavors, including many kid-friendly ones like gummy bear, cotton candy, and peanut butter cup. In 2020, 83 percent of current youth e-cigarette users used a flavored product, an increase from the previous year.

## Adult Use of E-cigarettes

In 2019, 4.5 percent of adults used e-cigarettes every day or some days, and 36.9 percent of adult e-cigarette users smoked regular cigarettes (called "dual-use"). E-cigarette use is highest among young adults: 9.3% of 18-24 year olds use e-cigarettes compared to 3.0% of 45-64 year olds. Fifty-six percent of young adults (18-24 years old) who were current e-cigarette users had never smoked cigarettes.

## Do E-Cigarettes Help People Quit Smoking?

E-cigarettes could benefit public health if they help significantly reduce the number of people who use regular cigarettes. However, the U.S. Surgeon General, the NASEM report and U.S. public health authorities have found that there is limited evidence that e-cigarettes are effective for complete smoking cessation. Health officials note that adult smokers need to quit smoking completely – not just cut back – in order to fully protect their health.

- The 2020 Surgeon General’s Report on Smoking Cessation concluded that “there is presently inadequate evidence to conclude that e-cigarettes, in general, increase smoking cessation.”
- The U.S. Preventive Services Task Force, which makes recommendations about the effectiveness of preventive care services, said “the current evidence is insufficient to recommend electronic nicotine delivery systems for tobacco cessation....” Researchers from the CDC stated, “There is currently no conclusive scientific evidence that e-cigarettes promote long-term cessation, and e-cigarettes are not included as a recommended smoking cessation method by the U.S. Public Health Service.”
- The CDC states, “If you only cut down the number of cigarettes you smoke by adding another tobacco product, like e-cigarettes, you still face serious health risks. Smokers must quit smoking completely to fully protect their health – even a few cigarettes a day are dangerous.” The Surgeon General also found that dual use, “does not meaningfully reduce exposure to potentially harmful toxicants.”

## Health Effects of E-cigarettes

Using e-cigarettes involves regular inhalation of nicotine, glycerin or some other solvent, and numerous other harmful and potentially harmful substances. Current evidence suggests that e-cigarettes deliver fewer toxicants than combustible tobacco cigarettes. Nevertheless, the Surgeon General found that use of e-cigarettes “is not without potential health risks” and that “the long-term health effects of using these products remain unknown, and short-term risks are only slowly coming into focus.” There is little data to assess the impact on cancer and heart disease risk.

- **Nicotine is a highly addictive drug** that can have lasting damaging effects on adolescent brain development and has been linked to a variety of adverse health outcomes for the developing fetus. Nicotine also impacts the cardiovascular system. The Surgeon General concluded that, “The use of products containing nicotine in any form among youth, including in e-cigarettes, is unsafe.”
- **Studies have found other chemicals and toxins present in some e-cigarettes**, including formaldehyde, acrolein, tobacco-specific nitrosamines, and metals like nickel and lead. These compounds are generally present at levels much lower than in cigarette smoke, although the compounds themselves are found on FDA’s list of harmful or potentially harmful substances.

## Regulation Is Critical

We are facing a public health crisis with youth use of e-cigarettes, and protecting our kids’ health should be the top priority. Effective FDA regulation remains critical to preventing kids from using these products. Until the FDA acts, cities and states should continue their growing efforts to prohibit the sale of all flavored tobacco products, including e-cigarettes. Over 250 localities have restricted the sale of flavored tobacco products.

*Sources:* For citations see: <http://www.tobaccofreekids.org/research/factsheets/pdf/0379.pdf>.