



Electronic Cigarettes: Brief Overview of Key Issues

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 U.S. Centers for Disease Control and Prevention (CDC) and the 2018 National Academies of Sciences, Engineering, and Medicine (NASEM) report on e-cigarettes, e-cigarettes are less harmful than combustible cigarettes, but that doesn't mean that they are safe or without risk. In December 2018, the Surgeon General 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

In December 2018, the Surgeon General issued an advisory on e-cigarette use among youth, "officially declaring e-cigarette use among youth an epidemic in the United States." The 2018 NASEM Report also found that e-cigarette use among youth and young adults increases the risk of ever using regular cigarettes.

- **More kids now use e-cigarettes than regular cigarettes.**

E-cigarettes are the most commonly used tobacco product among youth. Between 2017 and 2018, current (past 30 day) e-cigarette use increased by 78 percent among high school students (to 20.8 percent) and by 48 percent among middle school students (to 4.9 percent). In 2018, more than 3.6 million middle and high school students were e-cigarette users – an increase of 1.5 million students in just one year.

- **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. A government study found that 97 percent of current youth e-cigarette users have used a flavored product in the past month, and 7 out of 10 said they used the products "because they come in flavors I like."

CDC reports that in 2016, nearly 8 out of 10 middle and high school students—20.5 million youth—had been exposed to e-cigarette advertisements from at least one source.

Adult Use of E-cigarettes

In 2017, 2.8 percent of adults used e-cigarettes every day or some days. In 2015, a majority (59 percent) of adult e-cigarette users also continue to smoke regular cigarettes (called "dual-use"). Forty percent of young adults (18-24 year olds) who were current e-cigarette users in 2015 had never been cigarette smokers.

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 recent 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 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.”
- According to the CDC, “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.”

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. E-cigarettes are certainly not risk-free, but current evidence suggests that e-cigarettes are less harmful than combustible tobacco cigarettes. Nevertheless, little is known about the long term effects of e-cigarette use, and 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.

FDA Regulation Is Critical

There are many unanswered questions about the impact e-cigarettes may have on public health. The Tobacco Control Act of 2009, which granted FDA authority over tobacco products, was enacted to provide an objective way to evaluate which products will actually reduce the risk of disease for tobacco users and will protect public health. In November 2018, FDA announced new steps to restrict sales of some e-cigarette products. [FDA’s actions on e-cigarettes](#) are a step forward, but don’t go far enough to reverse the epidemic of youth e-cigarette use. Effective FDA oversight remains critical to preventing kids from using these products and determining whether e-cigarettes could benefit public health by helping smokers quit regular cigarettes.

Sources: For citations and additional information, see the longer version of this factsheet, “Electronic Cigarettes: An Overview of Key Issues” at: <http://www.tobaccofreekids.org/research/factsheets/pdf/0379.pdf>.