



E-Cigarettes and Public Health

Background

- The advent of electronic cigarettes (e-cigarettes) and the dramatic rise of their use especially in adolescents and young adults continues to be of significant concern. E-cigarettes have been the most popular tobacco product for youth and adolescents in the United States since 2014 and attract youth to different avenues for nicotine addiction.^{1,2}
- There is evidence that the use of e-cigarettes may catalyze transition to the use of combustible tobacco products or recreational drugs, particularly in young adults.^{3,4}
- The long-term health effects of e-cigarettes and the net public health effect associated with their use remain unclear. A 2018 review of the latest research on e-cigarettes found that e-cigarette aerosol contains fewer numbers and lower levels of toxicants than combustible tobacco cigarettes, but the evidence suggests that e-cigarettes are not without adverse biological effects; however, they may pose less risk than continuing to smoke cigarettes.⁶ However, a recent meta-analysis of 107 studies, found no significant difference in the odds of developing cardiovascular disease, stroke, or metabolic dysfunction for adults who smoke only e-cigarettes versus those who smoke only cigarettes.⁷ Additionally, dual-use of e-cigarettes and cigarettes is associated with higher odds of developing cardiovascular disease, stroke, or metabolic disease.⁷ Furthermore, in adolescent e-cigarette users, there is increasing evidence of heart and vascular changes that increase the risk of cardiovascular disease.⁹

Fast Facts:

1. In 2023, 10% (1.56 million) of high school students and 4.6% (550,000) of middle school students reported being current e-cigarette users.² In 2021, adults regularly using e-cigarettes was estimated to be 4.5% (11.1 million) regularly use e-cigarettes, with highest use in 18-24 year-olds.⁵
2. More than 89% of youth who use e-cigarette use flavored e-cigarettes, with 63.4% of them reporting fruit flavors as the most preferred flavor.²
3. Between February 2020 and September 2023, there was a 46.1% increase in total e-cigarette sales and a 63.6% increase in flavored e-cigarette sales.⁸

The American Heart Association's Position

- **The American Heart Association supports further research to develop novel cessation products that can be approved by the FDA's Center for Drug and Evaluation Research.**¹⁰ According to the 2016 National Academics of Science, Engineering, and Medicine report there is not substantial evidence to support that e-cigarettes serve as an effective cessation aid in comparison to other FDA approved smoking cessation treatments.⁸
- **The American Heart Association supports the development of strong regulation at the federal, state, and local levels to protect against youth access and initiation, re-initiation by former smokers, and initiation by those who have never smoked.**¹⁰ These regulations should address issues such as marketing and advertising, elimination of all flavors regardless of the electronic nicotine delivery system (ENDS), and retailer compliance in not selling to minors.¹⁰
- **The American Heart Association advocates for further investigation of the safety of ENDS and the elimination of all flavors, including menthol, by the FDA.**¹⁰

FDA Policy for Flavored ENDS: In January 2020, the FDA issued a new policy that removed some flavored prefilled pod- or cartridge-based e-cigarettes from the market. The policy was developed in response to the dramatic increase in youth e-cigarette use and increased appeal of "sweet, fruity, and minty" flavorings. The FDA policy prohibited the sale of flavored cartridge-based ENDS. However, the policy did not apply to menthol- or tobacco-flavored cartridge-based ENDS, and any flavored disposable e-cigarettes, or e-liquids used in refillable open tank systems. Menthol continues to be one of the most common flavor additives used for e-cigarette products with a reported dollar sales increase of 68.7% between 2020 and 2023, which is partly due to increase in larger disposable e-cigarettes that "allow for thousands of puffs".⁸ In the 2023 NYTS survey, 20.1% and 27.8% of adolescent current e-cigarette users reported using menthol or mint flavored e-cigarettes, respectively.² When adolescents who currently use e-cigarettes were asked if they used flavored e-cigarettes that had names or descriptions that included the word "ice" or "iced", almost 60% reported they had.²

For more information and resources from the American Heart Association's policy research department on tobacco please visit:

<https://www.heart.org/en/about-us/policy-research>.

Last Updated: Mar 2024

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