



E-Cigarettes and Public Health

The American Heart Association's Position

- The advent of new tobacco products, such as electronic cigarettes (e-cigarettes) and the dramatic rise of their use especially in adolescents and young adults is of significant concern. E-cigarettes have now become the most popular tobacco product for youth and adolescents in the United States and are attracting youth to different avenues for nicotine addiction.¹
- There is increasing evidence that the use of e-cigarettes may catalyze transition to the use of combustible tobacco products or recreational drugs, particularly in young adults.²
- Although e-cigarettes may have benefit by helping some smokers quit or move to a less harmful product, the long-term health effects of these products and the net public health effect associated with their use remain unclear. A 2018 review³ summarized the latest research on e-cigarettes and considered their impact on public health. Overall, the report found that e-cig 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 are likely to pose less risk than continuing to smoke cigarettes.
- Significant regulation at the federal, state, and local levels addressing issues such as marketing and advertising, flavors, and retailer compliance in not selling to minors should be developed to protect against youth access and initiation, re-initiation by former smokers, and initiation by those who have never smoked.
- Further research and legal analysis are needed to facilitate e-cigarettes being regulated and sold only as FDA-approved cessation products, and the Center for Drug Evaluation and Research needs to reduce existing barriers to accomplish this work. Additional research is needed to determine the impact of dual use and long-term use of e-cigarettes.

Fast Facts:

1. There has been a dramatic increase in adolescent e-cigarette initiation. During 2017–2018 alone, e-cigarette use rose by 78% in high school students and 48% in middle school students.¹
3. Noting this unprecedented spike in e-cigarette use, in December 2018, the US Surgeon General issued an advisory for parents, teachers and health professionals about the negative health consequences of e-cigarettes.

JUUL

JUUL is a rapidly growing type of e-cigarette that became available in the US in 2015. It is particularly appealing to adolescents and young adults because of its marketing on social media, slim USB flash drive design, vibrant colors, and palatable flavors.⁴ It does not emit large smoke clouds, making it optimal for discrete use and the JUUL nicotine refills (“pods”) contain as much nicotine as a pack of 20 regular cigarettes.⁴ The nicotine is high in JUUL pods and it is present in a benzoic acid salt rather than a free base which increases the rate of nicotine delivery and decreases the harsh sensation in the mouth and throat.⁴ JUUL has rapidly become the most popular e-cigarette sold in the US. The sale of JUUL e-cigarettes increased 641% in a year, and JUUL accounts for nearly 1 out of every 3 e-cigarettes sold in the US.⁵ Inspired by this success, most of the major manufacturers have developed USB-shaped devices containing e-liquids in pods.

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>.

1. Cullen KA, Ambrose BK, Gentzke AS, Apelberg BJ, Jamal A and King BA. Notes from the Field: Use of Electronic Cigarettes and Any Tobacco Product Among Middle and High School Students - United States, 2011-2018. *MMWR Morb Mortal Wkly Rep*. 2018;67:1276-1277.
2. Berry, KM., Fetterman, JL., Benjamin, EJ., et al. Association of electronic cigarette use with subsequent initiation of tobacco cigarettes in US youths. *JAMA Netw Open*. 2019; 2(2):e187794.
3. National Academies of Sciences, Engineering, and Medicine. Public health consequences of e-cigarettes. National Academies Press. Washington, DC. 2018. Accessed online January 16, 2019 at nationalacademies.org/eCigHealthEffects.
4. Centers for Disease Control and Prevention. E-cigarettes shaped like USB flash drives: Information for parents, educators and health care providers. Atlanta, GA. 2018. Accessed online January 16, 2019 at <https://www.cdc.gov/tobacco/infographics/youth/pdfs/e-cigarettes-usb-flash-508.pdf>.
5. King BA, Gammon DG, Marynak KL and Rogers T. Electronic Cigarette Sales in the United States, 2013-2017. *JAMA*. 2018;320:1379-1380.