

E-cigarettes & Youth

Preventing use among youth and young adults



The U.S. Secretary of Health and Human Services (HHS), U.S. Surgeon General, and Commissioner of the Food and Drug Administration (FDA) have all declared youth e-cigarette use to be an epidemic.ⁱ E-cigarette use among high school students increased by 135 percent and 218 percent among middle school students since 2017.ⁱⁱ Furthermore, e-cigarette use is most common among younger adults – not older adults.ⁱⁱⁱ Action is needed to reverse these trends.

E-cigarette Use

Nationwide, e-cigarette use has increased rapidly among youth. E-cigarettes are the most commonly used tobacco product by middle and high school students, surpassing cigarette use.^{iv} In 2011, 1.5 percent of high school students and 0.6 percent of middle school students reported using e-cigarettes. By 2019, those numbers rose to 27.5 percent of high school students and 10.5 percent of middle school students, totaling more than 5.3 million students. Frequent e-cigarette use, that is using the product on at least 20 of the past 30 days, increased by 41.2 percent among middle and high school students from 2017 to 2019; with 30.4 percent of youth e-cigarette users reporting frequent use. Furthermore, among current users of any tobacco product, 55.5 percent exclusively used e-cigarettes.

Young adults (aged 18-24) were more likely to be current users of e-cigarettes (7.6 percent) than other adults in 2018. In fact, current use declined with age.^v Young adults who have never smoked cigarettes were also more likely to have used e-cigarettes as compared to older adults. In 2015, 40 percent of current young adult e-cigarette users had never smoked cigarettes.^{vi}

JUUL, a highly popular e-cigarette, currently accounted for 70 percent of the e-cigarette market (dollar share) in mass channel and convenience stores (not including online or tobacco or vape shop sales) in July 2018.^{vii} In January of 2017, JUUL accounted for only 5 percent of that market. Altria, the parent company of Philip Morris, announced plans to acquire a 35 percent stake in JUUL in late 2018.^{viii} The Truth Initiative completed a study in early 2018 to assess youth and young adult use of JUUL specifically.^{ix} The study found ever and current JUUL use to be most popular with those under the age of 21. Ever use for those youth aged 15-17 was 9.5 percent and for youth aged 17-21 was 11.2 percent. In terms of frequency of use, 55.8 percent of current JUUL users aged 15-17 and 57.1 percent of current JUUL users aged 18-21 reported using JUUL on 3 or more days in the past month. Approximately one in four current JUUL users aged 15-21 reported using on 10 or more days in the past 30 days.

What Are E-cigarettes?

Electronic cigarettes, or e-cigarettes, are a diverse group of products that go by many names including vape pens, tank systems, e-hookah, and mods. E-cigarettes are battery-operated products designed to deliver an aerosol of nicotine and other chemicals, to the user. E-cigarettes can be disposable or consist of a rechargeable, battery-operated heating element; and can include a replaceable or refillable cartridge that for the e-liquid. E-cigarettes that resemble USB flash drives are popular among youth because they can be used discreetly and come in a variety of flavors. The high nicotine content and delivery of these USB-types of e-cigarettes is especially concerning.

E-cigarette & Cigarette Use

The 2016 Surgeon General’s Report concluded that “e-cigarette use is strongly associated with the use of other tobacco products among youth and young adults, particularly combustible tobacco products.”^x In 2018, a National Academies of Science, Engineering, and Medicine report concluded that: “There is substantial evidence that e-cigarette use increases risk of ever using combustible tobacco cigarettes among youth and young adults.^{xii}” Furthermore, the report concluded that there was moderate evidence that e-cigarette use increases the intensity and frequency of cigarette smoking.

SPOTLIGHT: Flavored E-cigarettes

Cigarette manufacturers have effectively used flavors, including menthol, to attract and addict new smokers, particularly young people. Flavored e-cigarettes have flooded the market with one study identifying more than 7,700 unique e-cigarette flavors as of January 2014, and more than 240 new flavors being added per month.^{xxvii} The overwhelming majority of these e-cigarette flavors are fruit, candy, mint and dessert flavors, and are often paired with flashy marketing campaigns that appeal to youth. By 2017, another study found 15,500 unique e-cigarette flavors available online.^{xxiii}

Flavors play a major role in the high rates of youth and young adult use of e-cigarettes. Data from the 2016-2017 PATH study, the largest national longitudinal study looking at tobacco use and its effects, found that among teens who use e-cigarettes, 97.0 percent regularly used a flavored product.^{xxix} Also, among those teens who had ever tried an e-cigarette, 96.1 percent used a flavor product for the first time. In 2019, 71.7 percent of high school students who currently use an e-cigarette use a flavored product, and the percentage is 59.9 percent for middle school students. Among exclusive users of e-cigarettes, use of mint or menthol flavored e-cigarettes went up from 16.0 percent in 2016 to 57.3 percent in 2019, while candy-, dessert- and other sweet-flavors decreased.ⁱⁱ

A more recent study concluded that youth who use e-cigarettes are more than 4 times as likely to try cigarettes and nearly 3 times as likely to currently smoke cigarettes than those youth who never tried e-cigarettes.^{xii} Cigarette use by the end of the study was higher among prior e-cigarette users (20.5 percent) and prior users of other tobacco products (21.1 percent), compared with those who had not used tobacco before (3.8 percent). Also concerning, the link between prior e-cigarette use and trying cigarette smoking was stronger for youth who would be considered “low-risk” for smoking. The researchers estimated that more than 43,000 current smokers ages 12-15 years got their start with e-cigarettes.

Industry Targeting of Youth & Young Adults

The 2012 Surgeon General’s report concluded that tobacco industry advertising and promotions causes initiation and progression of use among youth and young adults.^{xiii} Tobacco industry marketing increases the awareness of smoking, recognition of specific brands, positive attitudes about smoking, intention to smoke, and actual smoking behavior. Furthermore, as shown by tobacco industry documents, this marketing to youth and young adults was intentional. The tobacco industry uses images popular with youth and young adults, including images of independence, rebelliousness, social acceptability, and sexual attraction.

E-cigarette manufacturers are using the same marketing practices effectively used by the other tobacco manufacturers to target youth and mislead consumers about the effects of their products.^{xiv} These practices include celebrity endorsements, sports and musical sponsorships, use of images of e-cigarettes as rebellious, sexy and cool, and the use of flavorings in their products.^{xv} Particularly troubling is that e-cigarettes are not subject to the legal restrictions to which cigarettes and other tobacco products are required to adhere. E-cigarettes are advertised on television, radio, online, in print magazines, including those with high youth readership, and at sports and music events.

Youth are increasingly exposed to e-cigarette advertising. In 2019, 69.3 percent of middle and high school students – 18.2 million youth - reported seeing e-cigarette advertising and promotions.^{xvi} Almost two-thirds of students reported seeing these advertisements in retail stores (58.4 percent), 44.6 percent on the Internet, 26.2 percent on TV, streaming or movies, and 34.8 percent in newspapers and magazines. Recent research shows that youth exposed to e-cigarette advertising are more likely to ever and currently use e-cigarettes, with a dose-effect, even among youth who had never used an e-cigarette.^{xvii}

Health Effects of E-cigarettes

E-cigarette aerosol poses potential risk to users and nonusers. The most recent Surgeon General’s report concluded that “e-cigarette aerosol is not harmless. It can contain harmful and potentially harmful constituents, including nicotine.^{xviii}” Studies have found the aerosol to contain ultrafine particles that can be inhaled deeply into the lungs, heavy metals, volatile organic compounds and cancer-causing chemicals, among other potentially harmful chemicals.^{xix,xx,xxi} E-cigarettes can vary on whether or how much of these chemicals are present in the products.^{xxii} One study found up to 31 constituents in the aerosol, including nicotine, acetaldehyde, and diacetyl, a chemical linked to serious lung disease.^{xxiii} Studies have shown that the use of e-cigarettes can cause short-term lung changes and irritations.^{xxiv}

E-cigarettes can vary in the amount of nicotine present.^{xxv} Nicotine exposure during adolescence and young adulthood can affect the developing brain and may have lasting effects on cognitive function, decision-making, and impulse control.^{xxvi} Exposure to nicotine during adolescence puts the user at greater risk for a lifelong addiction, as the developing brain is more susceptible to addiction than an adult brain. Nicotine exposure, through maternal use, can also negatively affect fetal development leading to sudden infant death syndrome (SIDS), brain alterations, deficits in auditory processing, and obesity.

ACS CAN’s Position:

The epidemic of e-cigarette use by youth and young adults, aggressive marketing tactics by their manufacturers, including the use of flavors appealing to youth, and under-regulation of these products requires the public health community to take action to protect youth and young adults, and the public health at-large. ACS CAN supports several evidence-based strategies to reduce youth use of e-cigarettes:

- ❖ **Strong Federal Regulation:** The FDA should act on its authority over e-cigarettes by requiring premarket review, restrict the marketing of these products to youth, prohibit all flavors because of their appeal to youth, enforce the prohibition on unsubstantiated health claims, and use sound scientific evidence when evaluating marketing applications and proposing product standards for the protection of public health.
- ❖ **Strengthen State and Local Tobacco Control Measures:** Many states and localities are enacting regulations on the sale and use of e-cigarettes. E-cigarettes should be included in evidence-based state and local tobacco control laws.
 - E-cigarettes should be defined as tobacco products and included in the definitions of

smoking to:

- Prohibit e-cigarette use where smoking and/or tobacco use is prohibited.
 - Prohibit the sale of all flavored e-cigarettes including e-juices.
 - Include e-cigarettes in tobacco sales restrictions, including retailer licensing requirements.
 - Tax e-cigarettes.
- Include e-cigarettes in all evidence-based state tobacco control programs.

- ⁱ Office of the Surgeon General, “Surgeon General’s Advisory on E-Cigarette Use Among Youth,” December 18, 2018. <https://e-cigarettes.surgeongeneral.gov/documents/surgeon-generals-advisory-on-e-cigarette-use-among-youth-2018.pdf> Statement from FDA Commissioner Scott Gottlieb, M.D., on new steps to address epidemic of youth e-cigarette use. September 12, 2018. <https://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm620185.htm> Azar, Alex M, and Gottlieb, Scott. “We cannot let e-cigarettes become an on-ramp for teenage addiction.” The Washington Post, October 11, 2018. Op-ed.
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