

Vaping

Electronic Nicotine Delivery Systems (ENDS) and Vapor Products

Fact Sheet

Tobacco Control Program • January 2020

Vaping Overview

- ENDS and Vapor Devices are referred to by a variety of names including electronic or e-cigarettes, vapes, vape or hookah pens, mods, tanks and Juuls
- Some vapor devices do not look like tobacco products, so kids can use them unnoticed at school, including in classrooms
- Liquid used in these products typically contains nicotine, flavorings and other chemicals and is vaporized by a battery-powered heating element in the device
- Use of these products is commonly referred to as 'vaping' or 'juuling'
- Vapor devices simulate smoking for the user as they inhale and then exhale a cloud of aerosol, much like secondhand smoke from traditional cigarettes
- Aerosol from ENDS products can contain and emit nicotine, carcinogens, heavy metals and other toxic substances, including formaldehyde^{1,2}
- According to the U.S. Surgeon General, nicotine is highly addictive and poses danger to youth, pregnant women and fetuses
- ENDS devices have varying levels of nicotine and the most popular brand has very high nicotine content; youth can become addicted with only a few puffs



Images courtesy of the Centers for Disease Control and Prevention, Imperial Brands, Juul Labs, Inc. and Suorin

Key Points:

- Aerosol from ENDS products can contain and emit nicotine, carcinogens, heavy metals and other toxic substances
- ENDS devices have varying levels of nicotine and youth can become addicted with only a few puffs
- Current evidence is *insufficient* to conclude that ENDS are effective for tobacco use cessation and are *not* an FDA-approved aid for quitting
- Use of any products containing nicotine, including vapor devices, by youth is unsafe and can harm adolescent brain development¹
- Evidence suggests that completely substituting ENDS for combustible tobacco cigarettes reduces exposure to toxicants and carcinogens, although long-term health effects of ENDS are unknown since they are fairly new to the market²
- More research is needed to determine if ENDS are effective for tobacco use cessation, they are not an FDA-approved aid for quitting³

Vaping-Associated Lung Injury

- In 2019, reports of hospitalizations for vaping-associated lung injuries led to a national outbreak investigation
- Over 50 CT residents have been hospitalized for these lung injuries as of January 21, 2020
- Most patients were under the age of 35 and reported use of products containing tetrahydrocannabinol (THC), the psychoactive ingredient found in marijuana
- CDC and FDA worked with all 50 states to determine the cause(s) of the lung injury outbreak and found Vitamin E Acetate in lung fluid samples from over 50 of the injured patients
- Oil and other triglycerides were found in many of the samples, though no single substance has been tied to all cases
- The investigation is active as of January 9, 2020



ENDS Use in Connecticut

Youth

- ENDS are the most prevalent form of tobacco product used by high school students—the use rate tripled between 2011 and 2015, and then doubled between 2015 and 2017⁴
- Over 27% of high school students have ever tried vaping compared to about 15% who have ever tried smoking a conventional cigarette⁴
- ENDS use increases the risk of youth and young adults using combustible tobacco^{2,5}
- More than half of high school students who ever tried ENDS products reported using their devices for substances other than nicotine, such as marijuana, THC or hash oil, or THC wax⁴

Key Points:

- More than 50 CT residents were hospitalized in 2019 for vaping-associated lung injuries
- ENDS are the most prevalent form of tobacco product used by CT high school students
- ENDS use increases the risk of youth and young adults using combustible tobacco
- More than half of adults who use ENDS also smoke conventional cigarettes

Adults

- About 18% of adults have tried ENDS at least once in their lifetime, including nearly 35% of adults 18-34 years old⁶
- Current ENDS use is highest among young adults aged 18-24 years (11.7%) followed by those 25-34 years of age (5.9%)⁶
- More than half of the adults who use ENDS also smoke conventional cigarettes⁷

Tobacco Industry Oversight

- Major tobacco companies produce their own ENDS product lines and are marketing ENDS with techniques previously used to sell cigarettes
- There are over 1,200 stores registered to sell ENDS products in Connecticut, including convenience stores, supermarkets and pharmacies
- In 2016 the FDA deemed authority to regulated ENDS; products without FDA approval by May 2021 will be removed from the market
- There have been no manufacturing or safety standards for ENDS
- There are no current restrictions on advertising ENDS

Additional ENDS Facts

Key Points:

- Tobacco companies produce their own ENDS product lines and are marketing the devices with techniques used previously to sell cigarettes
- There are no current restrictions on advertising ENDS
- E-liquids have a high level of nicotine which can be poisonous, especially for children
- There are thousands of 'e-juice' flavors, many are highly appealing to youth

- The Juul pod-based system, where refill pods are pre-filled by the manufacturer and purchased separately, was introduced to the market in 2015 and quickly overtook sales to represent over 70% of the market
- Many ENDS devices are rechargeable and refillable, allowing users to create their own 'e-juice' flavor and vary the nicotine levels
- E-liquids have a high level of nicotine which can be poisonous, especially for young children.
- Intentional or accidental exposure to e-liquids via ingestion, inhalation or absorption through the skin or eyes can result in adverse health effects²
- There are thousands of "e-juice" flavors, many of which are candy- or fruit-flavored, making them highly appealing to youth¹

References

¹ U.S. Department of Health and Human Services. *E-cigarette Use Among Youth and Young Adults: A Report of the Surgeon General* 2016.

² National Academies of Sciences, Engineering, and Medicine. 2018. *Public Health Consequences of E-Cigarettes*. Washington, DC: The National Academies Press. doi: 10.17226/24952.

³ U.S. Department of Health and Human Services. *Smoking Cessation. A Report of the Surgeon General*. Atlanta, GA. 2020, and U.S. Preventive Services Task Force. *Behavioral and Pharmacotherapy Interventions for Smoking Cessation in Adults, including Pregnant Women* 2015. <http://www.uspreventiveservicestaskforce.org>

⁴ State of Connecticut, Department of Public Health. Data from the 2017 *Connecticut Youth Tobacco Survey*

⁵ Bold KW, Kong G, Camenga DR, et al. *Trajectories of E-Cigarette and Conventional Cigarette Use Among Youth*. *Pediatrics* 2018; 141(1):e20171832.

⁶ State of Connecticut, Department of Public Health. Data from the 2015 *Connecticut Behavioral Risk Factor Surveillance System*.

⁷ National Center for Health Statistics. National Health Interview Survey, 2015 data; *Cigarette Smoking Status Among Current Adult E-Cigarette Users*. <http://www.cdc.gov/nchs/nhis>