

2022 Connecticut Epidemiological Profile: ENDS



A product of the State Epidemiological Outcomes Workgroup (SEOW)

Prevalence

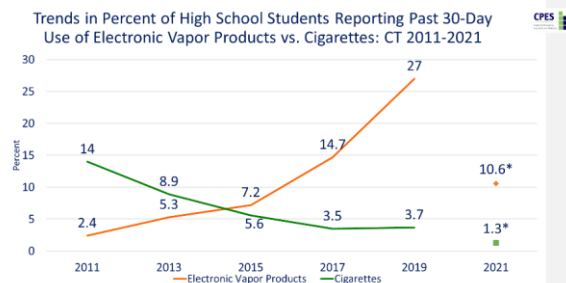
Electronic nicotine delivery systems (ENDS), are metal or plastic tubes that aerosolize liquids, usually with nicotine, via a battery-powered heating element. The resulting aerosol is inhaled by the user and exhaled into the environment. There are many types of electronic smoking devices, including: e-hookahs, vape pens, e-cigarettes, and hookah pens. The liquid that is utilized in the device is called “e-juice” and is available in a variety of flavors and nicotine levels. Vaping refers to the use of ENDS.

ENDS and e-cigarettes are an emerging problem nationally and in Connecticut, as rates continue to rise at a steady pace. According to Connecticut’s Behavioral Risk Factor Surveillance Survey (CT BRFSS), the prevalence of adults ever using e-cigarettes has increased each year since 2012. The 2020 CT BRFSS results showed that 20.9% of adults in Connecticut reported having tried e-cigarettes in their lifetime, 8.7% use daily.¹

DataHaven’s 2021 Community Wellbeing Survey reported similar results. According to the survey, ENDS use is most prevalent among 18 to 34 year-olds (45%) with prevalence of use decreasing as age increased.² Lifetime use was highest among Suburban (28%) and Urban Core (26%) communities, followed by Urban Periphery (20%), Rural (14%), and Wealthy (8%) communities.²

ENDS use is of particular concern among youth, who report significantly higher use rates than adults. Nationally, the 2019 Youth Risk Behavior Survey (YRBS) results showed 50.1% of high school students reported ever using an electronic vapor product, and 32.7% reported use in the past 30 days. Current use rates were highest among non-Hispanic whites (38.3%), compared to Hispanics (31.2%) and non-Hispanic Blacks (19.7%).³ Over the past 10 years, trend data shows current cigarette smoking among high school students in

Connecticut has declined, while the current use of electronic smoking devices (e-cigarettes) has increased. The 2021 Connecticut School Health Survey (CT YRBS) data show that the current use of cigarettes among high school students is 1.3%, a nearly 13 percentage point decrease since 2011 (Figure 1) while, the current use of electronic vapor products among high school students is 10.6%, an 8 percentage point increase since 2011, use has decreased since the 2019 rate of 27.0%.⁴ These findings imply that while e-cigarettes had been replacing tobacco smoking as the main mechanism for nicotine delivery, nicotine use in general seems to be decreasing among this age-group. However, caution should be taken when comparing the 2021 data to that of previous years because the 2021 Connecticut School Health Survey was collected using a different methodology and during a different semester than done in previous years. The 2021 Connecticut School Health Survey data also show that current use of electronic vapor products



Note: The language around electronic vapor products has changed over the years. In 2017 and earlier, the survey asked about current “e-cigarette” use rather than vapor products. *Caution should be taken when comparing the 2021 data to that of previous years because the 2021 Connecticut School Health Survey was collected using a different methodology and during a different semester than done in previous years.

increased by grade among high school students (Figure 2). 15.5% of female students were current e-cigarette users, compared to 6.9% of males. Non-Hispanic White (10.7%) and Hispanic (12.4%) students were more likely than Black (10.9%) students to be current users. Additionally, students identifying as gay, lesbian, or

¹CT BRFSS (2020)

²DataHaven and Siena College Research Institute (2021). 2021 DataHaven Community Wellbeing Survey.

³Cremer MR, Jones SE, Gentzke AS, et al., (2020). YRBS 2019.

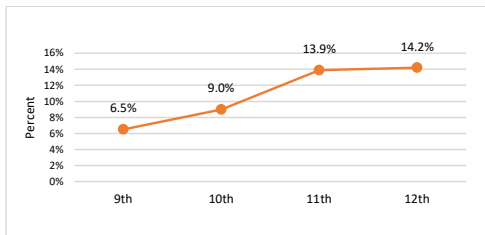
⁴CT DPH, 2019 Connecticut School Health Survey: Tobacco and Marijuana Use Findings (2022).

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bisexual reported higher a prevalence (16.7%) than their heterosexual peers (8.9%).

Figure 2. Current Use of Electronic Vapor Products by Grade, 2021



Among Connecticut high school students in 2017, 37.1% perceived little or no harm in breathing the vapor from e-cigarettes. This perception was more prevalent among males (44.4%) than females (29.7%) but doesn't vary significantly by race. Low perception of harm was much higher among those who had ever used e-cigarettes (52.7%) compared to those who never used (28.8%).⁵

At-Risk Populations

Populations most at-risk for using ENDS are:

- **Adults** with the following characteristics: male gender; from households earning less than \$35,000; with a disability; with less than a high school education; with poor mental health status; or without health insurance¹
- **Young adults** with the following characteristics: female gender; lesbian, gay or bisexual; white race; Hispanic ethnicity; poor mental health status⁴
- Youth and young adults in general (12-34)^{1,2}
- Current smokers
- Those living in urban and suburban communities²

Consequences

⁵ CT DPH, 2017 Connecticut Youth Tobacco Survey Results

⁶ Centers for Disease Control and Prevention. (2022). Quick Facts on the Risks of E-cigarettes for Kids, Teens, and Young Adults. Retrieved from https://www.cdc.gov/tobacco/basic_information/e-cigarettes/

- Evidence shows that young people who use e-cigarettes may be more likely to smoke cigarettes in the future.⁶
- A recent CDC study found that 99% of e-cigarettes sold in the US contained nicotine, which can cause harm to parts of the adolescent brain that control attention, learning, mood, and impulse control.⁶
- E-cigarette aerosol can contain several potentially harmful substances, including diacetyl (in flavorings), which is a chemical linked to serious lung disease. It can also contain volatile organic compounds, cancer-causing chemicals, and heavy metals such as nickel and lead.⁶
- Some ENDS devices, including those that are particularly popular among youth, have been modified to allow for higher doses of nicotine to be delivered. They also facilitate the use of THC (and other substances), and in higher potency. This is especially problematic in youth use, because of the increased risk of tobacco and cannabis use disorders later in life.⁶
- As of January 14, 2020, a total of 2,668 hospitalized cases of e-cigarette or vaping product use-associated lung injury (EVALI) had been reported to the CDC across all 50 states, the District of Columbia, Puerto Rico and the U.S. Virgin Islands.⁷ Of these, 57 resulted in deaths. Connecticut accounted for 51 of the cases; 65% were male and 55% were between 18 and 34 years old. The vast majority were from Fairfield (38%) and New Haven (25%) counties.⁸ EVALI appears to be primarily driven by the use THC-containing vaping products, possibly due to substances, such as vitamin E acetate, added to the formulations.⁷
- Because vaping weakens the lungs and immune system, those who vape are at higher risk of COVID-19 due to compromised immune systems.⁸

Connecticut's Response

⁷ Krishnasamy, VP, Hallowell, BD, Ko, JY, et al. (2020). Update: Characteristics of a Nationwide Outbreak of E-cigarette, or Vaping, Product Use–Associated Lung Injury — United States, August 2019–January 2020.

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Effective October 1, 2019, Connecticut prohibited the sale/delivery of ENDS or vapor products to any person under the age of 21 as part of a bill referred to as “Tobacco 21”. This bill also expands the Clean Indoor Air Act to prohibit use of ENDS and vapor products on school properties and day care center facilities or grounds at all times. It also requires the Department of Mental Health and Addiction Services (DMHAS) to conduct compliance checks on e-cigarette dealers and refers those that are noncompliant to the Department of Revenue Services.⁸

As result of the growing prevalence of vaping, prevention efforts at the state, regional and community levels have expanded to focus on ENDS prevention for youth and young adults.

For more data and information on vaping in Connecticut, visit the

Connecticut SEOW Prevention Data Portal
<http://preventionportal.ctdata.org/>

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<https://www.cga.ct.gov/2019/ACT/pa/pdf/2019PA-00013-R00HB-07200-PA.pdf>

⁸ During 2019-2020 the Connecticut Department of Public Health (DPH) has been investigating reports of lung injury associated with the use of e-cigarette or vaping products. Retrieved from <https://portal.ct.gov/DPH/Health-Education-Management-Surveillance/Tobacco/Vaping>

⁹ Substitute House Bill No. 7200. Retrieved from <https://www.cga.ct.gov/2019/ACT/pa/pdf/2019PA-00013-R00HB-07200-PA.pdf>