Electronic Cigarettes

What are electronic cigarettes (e-cigarettes)?

Electronic cigarettes (e-cigarettes) are battery-operated devices that heat a liquid to produce an aerosol that users inhale. This aerosol typically contains nicotine, flavorings, and other additives. The term e-cigarette is often used to refer to a broad class of products also known as electronic nicotine delivery systems (ENDS), which also includes electronic cigars (e-cigars), electronic hookahs (e-hookahs), vapor (vape) pens, and other products.1

Use of E-cigarettes in Indiana and the U.S.

Use of e-cigarettes has increased dramatically in Indiana and the U.S. in recent years.234

- Nationwide, e-cigarette use tripled among middle and high school students between 2013 and 2014.4 In Indiana, e-cigarette use increased approximately four-fold among middle and high school students between 2012 and 2014.2
- While e-cigarette use among Hoosier youth declined significantly between 2014 and 2016, e-cigarettes remain the most commonly used tobacco product among Hoosier youth.2
- In 2016, 2.8% of middle school students and 10.5% of high school students reported current e-cigarette use.2
- In 2016, 4.7% of Indiana adults were current e-cigarette users.5

![Percentage of Indiana youth who report current (past 30 day) use of e-cigarettes, 2012-2016](chart)

Health Concerns about E-cigarettes

Harmful Aerosol Constituents and Secondhand Aerosol

- E-cigarette aerosols have been shown to contain nicotine, heavy metals, and cancer-causing agents.67
- E-cigarette aerosols also have high concentrations of ultrafine particles, which may exacerbate respiratory conditions and constrict arteries.89

Harmful Effects of Nicotine

- **Addiction:** Nicotine is highly addictive.10
- **Impaired youth brain development:** Nicotine use can disrupt adolescent brain development, including parts of the brain that control attention, learning, and susceptibility to addiction.11,15
- **Impaired fetal development:** Nicotine use by pregnant women is toxic to fetuses and impairs fetal brain and lung development.1,10,11,15
- **Poisoning:** E-cigarette solutions can have very high concentrations of nicotine, which creates a risk of overdosing or poisoning. Nationwide, monthly calls to poison control centers for e-cigarette exposure increased from one per month in September 2010 to 215 per month in February 2014. Over half of these calls were for children ages five and under.12
- In 2015, about 99% of e-cigarettes sold from convenience stores and other retailers (excluding specialty tobacco shops, “vape shops”, and online sales) contained nicotine.13

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**Fast Facts:**

- E-cigarettes are the most commonly used tobacco product among Hoosier youth.2
- The U.S. Surgeon General has stated that e-cigarette aerosol is NOT harmless “water vapor.”1
- E-cigarette aerosols have been shown to contain nicotine, heavy metals, carcinogens, and other toxic chemicals.67
- E-cigarettes are NOT FDA-approved cessation aids.15
- Most adult e-cigarette users also use combustible tobacco (such as cigarettes or cigars).14,15
- E-cigarettes have been marketed using tactics that appeal to youth.1

Tobacco Prevention and Cessation Commission

[www.in.gov/isdh/tpc](http://www.in.gov/isdh/tpc) ~ 317.234.1787
[www.QuitNowIndiana.com](http://www.QuitNowIndiana.com) ~ [www.indianaquitline.net](http://www.indianaquitline.net)
Electronic Cigarettes

Dual Use of E-cigarettes and Conventional Cigarettes

E-cigarettes are often promoted as safer alternatives to cigarettes or smoking cessation aids; however, e-cigarettes are not FDA-approved quit aids. Many adults and youth who use e-cigarettes also use conventional cigarettes.

Dual Use among Adults

- Rather than quitting cigarettes completely, many e-cigarette users continue to smoke conventional cigarettes.14,15
- Smokers who use e-cigarettes to cut back on cigarettes but do not quit completely remain at increased risk for disease and death due to smoking.15
- Nearly 6 in 10 Hoosier adults who use e-cigarettes (59%) also currently smoke cigarettes.5

Dual Use among Youth

The U.S. Surgeon General has concluded that e-cigarette use is strongly associated with use of other tobacco products among youth, including cigarettes and other combustible tobacco products such as cigars.1 In 2016, nearly half of high school e-cigarette users in Indiana (46%) also smoked cigarettes and about 3 in 5 (61%) used any combustible tobacco.2

Flavors, Marketing, and Youth Appeal

- Companies currently manufacture and sell e-cigarette solutions in over 7,000 unique flavors, including candy or fruit flavors that may appeal to youth.16 In 2016, 59% of high school e-cigarette users in Indiana used flavored e-cigarettes.
- E-cigarette marketing often involves tactics previously shown to increase the appeal of tobacco products to youth, including celebrity endorsements, sports and music sponsorships, and themes that resonate with youth, such as rebellion and glamor.1,15
- Nationwide, about 7 in 10 youth were exposed to e-cigarette ads in 2014.17 In 2016, about two-thirds of Indiana high school students (67%) reported exposure to e-cigarette ads or media depictions of e-cigarette use.2

Secondhand Aerosol

The U.S. Surgeon General has stated that e-cigarette aerosol is not harmless “water vapor” and may contain harmful chemicals.1 In 2015, nearly 1 in 4 youth nationwide (24.2%) reported being exposed to secondhand e-cigarette aerosol in an indoor or outdoor place.18

Public Health Response to E-cigarettes

Given concerns about the health impact of e-cigarettes, the U.S. Surgeon General has concluded that precautionary strategies to protect youth and young adults from adverse effects related to e-cigarettes are justified.1 These include strategies modeled after evidence-based tobacco control practices such as:

- Incorporating e-cigarettes into smoke-free policies, such as tobacco-free school grounds policies
- Preventing youth access to e-cigarettes
- Regulation of e-cigarette marketing that is likely to attract youth and young adults
- Educational initiatives targeting youth and young adults1

Resources for Tobacco Cessation

E-cigarettes are not FDA-approved cessation aids. Other methods, however, such as counseling and FDA-approved medications, have been shown to help tobacco users quit successfully.19 Tobacco users who want to quit should contact a healthcare provider for assistance and call the Indiana Tobacco Quitline at 1-800-QUIT-NOW or visit www.QuitNowIndiana.com for evidence-based support, advice, and resources.
Electronic Cigarettes

References


6. U.S. Food and Drug Administration. Summary of Results: Laboratory Analysis of Electronic Cigarettes Conducted by the FDA. Available at [http://www.fda.gov/NewsEvents/PublicHealthFocus/ucm173146.htm](http://www.fda.gov/NewsEvents/PublicHealthFocus/ucm173146.htm).


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