



Resources for Preventing Poisonings Among Children and Youth From Electronic Cigarettes



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While electronic cigarettes (“e-cigarettes,” “e-cigs,” “vapes,” “e-hookahs,” “vape pens,” and “electronic nicotine delivery systems”), are generally thought to be less harmful to health than inhaling smoke from combustibles, they still contain toxins and deliver harmful chemicals. E-cigarettes are experiencing unprecedented use among American youth causing widespread concern among health care providers, parents, poison specialists, tobacco control practitioners, educators and others.

According to the Centers for Disease Control, in 2019, 5 million U.S. middle and high school students used e-cigarettes in the past 30 days, including 27.5 % of high school students and 10.5% of middle school students¹. These recent data show increases from 2018 when more than 3.6 million U.S. middle and high school students used e-cigarettes in the past 30 days, including 20.8% of high school students and 4.9 % of middle school students.² Electronic cigarettes are particularly unsafe for youth, young adults, pregnant women, or adults who do not currently use tobacco products. National attention has recently focused on vaping-related lung injury. As of November 20, 2019, 2,290 cases of e-cigarette, or vaping, product use- associated lung injury (EVALI) have been reported to CDC from 49 states (all except Alaska), D.C., Puerto Rico and the Virgin Islands. Forty-seven

¹ Youth Tobacco Use: Results from the National Youth Tobacco Survey <https://www.fda.gov/tobacco-products/youth-and-tobacco/youth-tobacco-use-results-national-youth-tobacco-survey>

² CDC Electronic Cigarettes- Basic Information https://www.cdc.gov/tobacco/basic_information/e-cigarettes/index.htm

related deaths have been confirmed in 25 states and D.C. ³ Other injury-related consequences of electronic cigarettes include acute nicotine exposure among children and youth caused by swallowing, breathing or absorbing e-cigarette liquid as well as fires and explosions caused by defective e-cigarette batteries, some of which have resulted in serious injuries. ⁴ Clinicians, school staff, coaches, parents and policy makers can all play a role in preventing the use of e-cigarettes among youth and young adults. Below are some resources designed to help.

The list of resources included in this document is not meant to be comprehensive nor are the listings intended as endorsements.

American Academy of Pediatrics

Fact sheets, presentation toolkit, state-of-the-art review article, policy statement for clinicians and parents

<https://www.aap.org/en-us/advocacy-and-policy/aap-health-initiatives/Richmond-Center/Pages/Electronic-Nicotine-Delivery-Systems.aspx>

American Association of Poison Control Centers (AAPCC) and state poison control centers

E-cigarettes and Liquid Nicotine Fact Sheet

<https://aapcc.org/track/ecigarettes-liquid-nicotine>

Tobacco and Liquid Nicotine Fact Sheet

<https://aapcc.org/prevention/tobacco-liquid-nicotine>

American Lung Association

Fact sheet for schools

<https://www.lung.org/assets/documents/stop-smoking/e-cigarettes-schools.pdf>

INDEPTH: Intervention for Nicotine Dependence: Education, Prevention, Tobacco and Health

(INDEPTH) is a new, convenient alternative to suspension or citation that helps schools and communities address the teen vaping problem.

<https://www.lung.org/stop-smoking/helping-teens-quit/indepth.html>

Centers for Disease Control and Prevention (CDC)

2016 Surgeon General's Report: E-Cigarette Use Among Youth and Young Adults

https://www.cdc.gov/tobacco/data_statistics/sgr/e-cigarettes/index.htm

Many state poison control centers/systems have developed educational materials related to e-cigarettes and vaping. Below is a sample. To learn what your state center has developed, please contact the center directly.

Maryland Poison Center Electronic Cigarettes and Nicotine Press

https://www.mdpoison.com/media/SOP/mdpoisoncom/PP-Press/2018/PPPress_ElectronicCigarettes%20Nicotine_May-June_2018.pdf

New Jersey Poison Control Center Vaping Factsheet

<http://www.njpies.org/vaping>

Upstate New York Poison Center Newsletter

http://www.upstate.edu/poison/pdf/pp_newsletter/2019/march_2019.pdf

³ CDC Outbreak of Lung Injury Associated with the Use of E-Cigarette, or Vaping, Products https://www.cdc.gov/tobacco/basic_information/e-cigarettes/severe-lung-disease.html

⁴ CDC About Electronic Cigarettes (E-Cigarettes) https://www.cdc.gov/tobacco/basic_information/e-cigarettes/about-e-cigarettes.html



E-Cigarettes: Talk to Youth About the Risks

<https://www.cdc.gov/tobacco/features/back-to-school/e-cigarettes-talk-to-youth-about-risks/index.html>

Fact sheets, infographics and multi-media for teachers, coaches, parents, youth

www.CDC.gov/e-cigarettes

Morbidity and Mortality Weekly Report. 6.2 Million middle and high school students used tobacco products in 2019

<https://www.cdc.gov/media/releases/2019/1205-nyts-2019.html>

Quick Facts on the Risks of E-cigarettes for Kids, Teens, and Young Adults

https://www.cdc.gov/tobacco/basic_information/e-cigarettes/Quick-Facts-on-the-Risks-of-E-cigarettes-for-Kids-Teens-and-Young-Adults.html

Children's Safety Network (CSN) Webinars

"Synthetic Marijuana:" What Is It, Why Is It Dangerous, and How Can We Prevent Youth from Using It? (Nov 2018)

<https://www.childrensafetynetwork.org/webinar/synthetic-marijuana-what-it-why-it-dangerous-how-can-we-prevent-youth-using-it>

Preventing e-Cigarette Poisonings among Children and Youth: Policy and Practice (Dec 2016)

<https://www.childrensafetynetwork.org/webinar/preventing-e-cigarette-poisonings-among-children-youth-policy-practice>

Preventing E-Cigarette Poisoning among Children and Youth (Dec 2014)

<https://www.childrensafetynetwork.org/webinar/preventing-e-cigarette-poisoning-among-children-and-youth>

Food and Drug Administration (FDA)

Lung Illnesses Associated with Use of Vaping Products. Information for the Public, FDA Actions, and Recommendations

<https://www.fda.gov/news-events/public-health-focus/lung-illnesses-associated-use-vaping-products>

Overview of FDA regulation of vapes, e-cigarettes, and other electronic nicotine delivery systems

<https://www.fda.gov/tobacco-products/products-ingredients-components/vaporizers-e-cigarettes-and-other-electronic-nicotine-delivery-systems-ends>

Print materials (posters⁵, infographics, flyers) designed to educate youth about the dangers of e-cigarette use

https://digitalmedia.hhs.gov/tobacco/print_materials/search?page=1&tag=E-cigarettes%2Fvaping

“The Real Cost” Campaign designed to prevent tobacco and e-cigarette use among youth ages 12-17

<https://therealcost.betobaccofree.hhs.gov/>

Resources for educators

In response to the epidemic of youth e-cigarette use, FDA collaborated with Scholastic to develop and distribute new educational resources for middle and high schools. These materials include an educational article, 3 high school lesson plans and accompanying activity sheets, 3 middle school lesson plans with accompanying activity sheets, a family resource sheet, and an interactive infographic.

<https://www.scholastic.com/youthvapingrisks/>



Results from the National Youth Tobacco Survey

<https://www.fda.gov/tobacco-products/youth-and-tobacco/youth-tobacco-use-results-national-youth-tobacco-survey>

National Institute on Drug Abuse (NIDA)

Fact sheet

<https://www.drugabuse.gov/publications/drugfacts/electronic-cigarettes-e-cigarettes>

Public Health Law Center

Summaries of state and federal action related to e-cigarettes

<https://www.publichealthlawcenter.org/topics/commercial-tobacco-control/e-cigarettes>

⁵ Free posters available on the CTP Exchange Lab. <https://www.fda.gov/media/105490>

State Departments of Health/Public Health

Many state health departments have information and materials related to vaping prevention on their websites. Below is a sample. For information and materials specific to your state, contact your state department of public health.

Iowa Department of Public Health. Fact sheet

<https://idph.iowa.gov/ehi/lung-disease-vaping>

Massachusetts Department of Public Health (MDPH). Toolkit for schools

<http://makesmokinghistory.org/dangers-of-vaping/schools/>

<https://www.mass.gov/info-details/vapes-and-cigarettes>

Minnesota Department of Health (MN DOH). Toolkit for schools

<https://www.health.state.mn.us/communities/tobacco/ecigarettes/docs/schooltoolkit.pdf>

The Truth Initiative

Fact sheets and resources

<https://truthinitiative.org/>

<https://www.truthinitiative.org/research-resources/emerging-tobacco-products/e-cigarettes-facts-stats-and-regulations>

U.S. Department of Health and Human Services

A Report of the Surgeon General on e-cigarette use among youth and young adults

https://e-cigarettes.surgeongeneral.gov/documents/2016_SGR_Exec_Summ_508.pdf

Selected Research Studies

Association of Electronic Cigarette Use With Initiation of Combustible Tobacco Product Smoking in Early Adolescence. JAMA Network (2015)

Leventhal AM, Strong DR, Kirkpatrick MG

<https://jamanetwork.com/journals/jama/fullarticle/2428954>

Association of Electronic Cigarette Use With Subsequent Initiation of Tobacco Cigarettes in US Youths. JAMA Network (2019)

Berry KM, Fetterman JL, Benjamin EJ

<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2723425>

E-Cigarette and Liquid Nicotine Exposures Among Young Children. Pediatrics (2018)

Govindarajan P, Spiller HA, Casavant MJ, Chouthirath T, Smith GA

<https://pediatrics.aappublications.org/content/141/5/e20173361.short>

National estimates of poisoning events related to liquid nicotine in young children treated in US hospital emergency departments, 2013–2017. *Injury Epidemiology* (2019)

<https://injejournal.biomedcentral.com/articles/10.1186/s40621-019-0188-9>

Notes from the Field: Use of Electronic Cigarettes and Any Tobacco Product Among Middle and High School Students – United States, 2011–2018. *CDC MMWR* (2018)

Cullen KA, Ambrose BK, Gentzke AS, Apelberg BJ, Jamal A, King BA

https://www.cdc.gov/mmwr/volumes/67/wr/mm6745a5.htm?s_cid=mm6745a5_w

Poisoning exposure cases involving e-cigarettes and e-liquid in the United States, 2010–2018. *Clinical Toxicology*. (2019)

Wang B, Liu S, Persoskie A

<https://www.tandfonline.com/doi/abs/10.1080/15563650.2019.1661426>

Preventing Liquid Nicotine Toxic Effects on Children (2018)

Nordstrom SM

[https://www.intljourtranur.com/article/S0099-1767\(18\)30256-3/abstract](https://www.intljourtranur.com/article/S0099-1767(18)30256-3/abstract)

Vital Signs: Tobacco Product Use Among Middle and High School Students – United States, 2011–2018. *CDC MMWR* (2019)

Gentzke AS, Creamer M, Cullen KA, Ambrose BK, Willis G, Jamal A, King BA

<https://www.cdc.gov/mmwr/volumes/68/wr/mm6806e1.htm>



Children's Safety Network

43 Foundry Avenue

Waltham, MA 02453

Facebook: facebook.com/childrenssafetynetwork

Twitter: twitter.com/ChildrensSafety

Pinterest: pinterest.com/childrenssafety

www.ChildrensSafetyNetwork.org