

What You Should Know About Electronic Cigarettes (E-Cigarettes)

Key Points to Remember:

- E-cigarettes are NOT an approved U.S. Food and Drug Administration (FDA) quit tobacco device and should NOT be marketed as such.
- E-cigarettes are NOT a safe alternative to other forms of tobacco.
- The U.S. FDA considers e-cigarettes to be a tobacco product and began phasing in regulations August 8, 2016.¹
- E-cigarettes may be particularly attractive to youth due to their novelty; the fact that they are sold in places easily accessible to youth, such as mall kiosks and gas stations; and their availability in flavors appealing to youth, including chocolate, strawberry, peach, and mango.
- As of August 8, 2016, the U.S. FDA imposed a minimum purchase age of 18 for selling e-cigarettes to minors.

What is an Electronic Cigarette?

E-cigarettes are products that allow a user to inhale aerosol containing nicotine and other substances. Unlike conventional cigarettes, e-cigarettes are typically composed of a rechargeable, battery-operated heating element, a cartridge that may contain nicotine or other chemicals, and an atomizer that, when heated, converts the contents of the cartridge into an aerosol.²

Electronic Cigarettes are not an FDA-Approved Quit Tobacco Device

There are seven FDA-approved medications to treat tobacco dependence.³ E-cigarettes are not FDA-approved for quitting tobacco.⁴ Tobacco users who want to quit are encouraged to see their health care provider or to call 1-800-QUIT-NOW (1-800-784-8669) to receive evidence-based support in this process.

Safety, Regulation and Quality Concerns

The FDA is now regulating e-cigarettes as “tobacco products.” In 2009, the FDA tested the ingredients of cartridges from two leading brands of e-cigarettes and found levels of cancer-causing and toxic chemicals, including diethylene glycol, an ingredient in antifreeze.⁵ The FDA also found inconsistencies in manufacturing, raising concerns for consumers. In some cases, cartridges labeled as containing no nicotine did contain nicotine.^{6,7} Studies suggest adverse health impacts for both user and bystanders (“secondhand vaping”) associated with e-cigarettes, but additional studies are needed to understand the full impact of their use.^{8,9,10}

The World Health Organization warns that nicotine exposure, whether through inhalation, ingestion, or skin contact, can be hazardous to the health and safety of children, young people, pregnant women, nursing mothers, people with heart conditions, and the elderly.¹¹ E-cigarette users refilling their own cartridges handle potentially dangerous concentrations of nicotine.¹² The American Association of Poison Control Centers has been tracking adult and child poisonings from e-cigarette components and refill fluids.¹³ E-cigarettes also pose consumer safety concerns, having caused fires and injury to users.^{14,15,16}

Concerns for Youth

As of August 8, 2016, the U.S. FDA imposed the minimum sales age of 18 for the purchase of e-cigarettes.

E-cigarette companies aggressively market their product to youth as glamorous, healthy and rebellious in both traditional and social media, using methods long-prohibited to conventional tobacco companies, such as celebrity endorsements.^{17,18,19} Public health authorities are concerned that youth will be attracted to the novelty and flavors in e-cigarettes, and that e-cigarette use will lead to conventional tobacco use. Youth often believe e-cigarettes are safer than conventional tobacco use, and they find e-cigarettes easy to conceal around adults.^{20,21} Studies show youth are decreasing conventional cigarette use while increasing e-cigarette use, and that youth who were at lowest risk of conventional cigarette use are becoming conventional cigarette users after initiating with e-cigarettes.^{22,23}

About This Resource

This fact sheet was produced by the Michigan Department of Health and Human Services, Division of Chronic Disease and Injury Control, Tobacco Section. For more information about our work to change the negative health and economic impacts of tobacco in Michigan, visit www.michigan.gov/tobacco.

Created October 2013; revised August 2016

-
- ¹ "FDA's New Regulations for E-Cigarettes, Cigars, and All Other Tobacco Products." www.fda.gov/TobaccoProducts/Labeling/RulesRegulationsGuidance/ucm394909.htm Accessed 8/24/16.
- ² "FDA Warns of Health Risks Posed by E-Cigarettes." FDA Consumer Health Information, July 2009. www.fda.gov/ForConsumers/ConsumerUpdates/ucm225210.htm Accessed 8/9/13.
- ³ U.S. Department of Health and Human Services, Public Health Service. Clinical Practice Guideline: Treating Tobacco Use and Dependence: 2008 Update. May 2008. p. v.
- ⁴ U.S. Food and Drug Administration. "FDA Warns of Health Risks Posed by E-Cigarettes." FDA Consumer Health Information, July 2009. www.fda.gov/downloads/forconsumers/consumerupdates/UCM173430.pdf Accessed 8/9/13.
- ⁵ Ibid.
- ⁶ U.S. Food and Drug Administration, Division of Pharmaceutical Analysis. Evaluation of E-Cigarettes. May 4, 2009. www.fda.gov/downloads/Drugs/ScienceResearch/UCM173250.pdf Accessed 5/12/13.
- ⁷ "Tobacco Fact Sheet: Electronic Cigarettes (E-Cigarettes)." Legacy Foundation. June 2013. www.legacyforhealth.org/content/download/582/6926/version/5/file/LEG-FactSheet-eCigarettes-JUNE2013.pdf Accessed 8/9/13.
- ⁸ Vardavas, C., et al. "Short-Term Pulmonary Effects of Using an Electronic Cigarette: Impact on Respiratory Flow Resistance, Impedance, and Exhaled Nitric Oxide." *Chest*. 2012;141(6):1400-1406. <http://journal.publications.chestnet.org/data/Journals/CHEST/24233/112443.pdf> Accessed 8/14/13.
- ⁹ McCauley, L., et al. "An Unexpected Consequence of Electronic Cigarette Use." *Chest*. 2012;141(4):1110-1113. <http://journal.publications.chestnet.org/data/Journals/CHEST/24314/111334.pdf> Accessed 8/14/13.
- ¹⁰ Schripp, T., et al. "Does E-Cigarette Consumption Cause Passive Vaping?" *Indoor Air*. July 2, 2012. <http://onlinelibrary.wiley.com/doi/10.1111/j.1600-0668.2012.00792.x/pdf> Accessed 8/14/13
- ¹¹ "Questions and Answers on Electronic Cigarettes or Electronic Nicotine Delivery Systems (ENDS)." World Health Organization. 7/9/13. www.who.int/tobacco/communications/statements/electronic_cigarettes/en/index.html Accessed 8/5/13.
- ¹² "Tobacco Fact Sheet: Electronic Cigarettes (E-Cigarettes)." Legacy Foundation.
- ¹³ Bronstein, Alvin C., MD, et al. "2011 Annual Report of the American Association of Poison Control Centers' National Poison Data System (NPDS): 29th Annual Report." *Clinical Toxicology* (2012), 50, 911-1164. https://aapcc.s3.amazonaws.com/pdfs/annual_reports/2011_NPDS_Annual_Report.pdf Accessed 8/15/13.
- ¹⁴ "Sherman Man's E-Cigarette Explodes While Charging." News 12 KXII.com 7/16/13. www.kxii.com/news/headlines/E-cigarette-explodes-in-Texoma-mans-home-215771641.html Accessed 7/17/13.
- ¹⁵ "Corona: Couple Sues over Exploding E-Cigarette Battery." *The Press-Enterprise*. 7/3/13. <http://losangeles.cbslocal.com/2013/07/11/corona-couple-sues-after-e-cigarette-battery-explodes-in-car/> Accessed 7/8/13.
- ¹⁶ "Electronic Cigarette Explodes in Man's Mouth, Causes Serious Injuries." CBS News. 2/16/12. www.cbsnews.com/8301-504763_162-57379260-10391704/electronic-cigarette-explodes-in-mans-mouth-causes-serious-injuries/ Accessed 8/15/13.
- ¹⁷ "Firms Dust off Tobacco Marketing Playbook amid Pending Regulation of Electronic Cigarettes." *The Washington Post* (AP). 8/3/13. www.washingtonpost.com/business/firms-dust-off-tobacco-marketing-playbook-amid-pending-regulation-of-electronic-cigarettes/2013/08/03/c3b07d8c-fc3c-11e2-89f7-8599e3f77a67_print.html Accessed 8/3/13.
- ¹⁸ "FDA and the States Must Regulate E-Cigarettes to Protect Public Health: Our Policy Regarding E-Cigarettes." Campaign for Tobacco-Free Kids. July 17, 2013. <http://tobaccofreecampus.org/sites/default/files/resources/TFK%20E%20cigarettes%20Policy%20Statement%20FINAL%207-17-13.pdf> Accessed 8/2/13.
- ¹⁹ U.S. Department of Health and Human Services, Public Health Service, Office of the Surgeon General. Preventing Tobacco Use among Youth and Young Adults: A Report of the Surgeon General. p. 549-552. 2012. www.surgeongeneral.gov/library/reports/preventing-youth-tobacco-use/full-report.pdf Accessed 8/15/13.
- ²⁰ "FDA Warns of Health Risks Posed by E-Cigarettes." See citation 1.
- ²¹ Global Advisors Smokefree Policy (GASP). "Electronic Smoking Devices." Updated 8/14/13. www.njgasp.org/E-Cigs_White_Paper.pdf Accessed 8/15/13.
- ²² Centers for Disease Control and Prevention. "Tobacco Use among Middle and High School Students – United States, 2011-2015." www.cdc.gov/tobacco/data_statistics/tables/trends/infographics/index.htm#youth-tobacco and www.cdc.gov/tobacco/data_statistics/fact_sheets/youth_data/tobacco_use/index.htm Accessed 8/23/16.
- ²³ Wills, TA, et al. "E-Cigarette Use is Differentially Related to Smoking Onset among Lower Risk Adolescents." *Tobacco Control*. 8/19/16. Accessed 8/23/16. www.ncbi.nlm.nih.gov/pubmed/27543564