



Clinical Update

For Telephone Triage Nurses

October 2019

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References:

Centers for Disease Control and Prevention. Smoking & Tobacco Use/Electronic Cigarettes. Available at:

https://www.cdc.gov/tobacco/basic_information/e-cigs/ Last accessed: 9/17/19

Cullen K, Ambrose B. *Notes from the Field: Use of Electronic Cigarettes and Any Tobacco Product Among Middle and High School Students — United States, 2011–2018*. *MMWR. Weekly* / November 16, 2018 / 67(45);1276–1277

U.S. Department of Health and Human Services. *E-Cigarette Use Among Youth and Young Adults: A Report of the Surgeon General*. 2016. Available at: https://e-cigs.surgeongeneral.gov/documents/2016_SGR_Full_Report_non-508.pdf

E-Cigarettes and Vaping

Use of electronic cigarettes (vaping) has risen greatly over the last several years. Adult smokers have increasingly turned to e-cigs to quit or decrease tobacco smoking. An especially concerning fact is that e-cigs have become the most widely used tobacco product by youth. They are used by 1 in 5 high school students and almost 1 in 20 middle schoolers. The U.S. Surgeon General declared the use of e-cigs among young people an epidemic.

The Centers for Disease Control and Prevention (CDC) has reported an outbreak of lung injury from smoking e-cigs. As of October 1, 2019, there have been over 1000 cases with 18 deaths.

Telephone triage nurses should be ready to answer questions from concerned callers. This issue of *Clinical Update* gives you an overview on this important topic.

What are electronic cigarettes (e-cigs)?

E-cigarettes go by many names such as e-cigs, e-hookahs, vape pens, vapes, tank systems, or ENDS (Electronic Nicotine Delivery system). E-cigarettes have three main parts: a battery, a fluid chamber, and a heating element. The battery powers the heating element and the heating element turns the liquid into vapor. The vapor is inhaled by a user. This is why smoking e-cigs is also called “vaping”.

E-cigarettes may look like pipes, cigars, pens, regular cigarettes, or even USB flash drives. “Pod mods” are re-chargeable and have increasing popularity among teens. A popular brand is JUUL.

What is in the e-cigarette fluid?

E-cigarette fluid has three main types of chemicals:

- **Nicotine:** Nicotine content ranges from none to 36 mg/dL.
- **Flavor:** There are thousands of different flavors. Some flavors are chocolate, cotton candy, gummy bear and bubble gum. Such flavors may add to the use of e-cigs and nicotine addiction in children.
- **Other chemicals:** Other likely harmful substances in e-cigarette vapor are propylene glycol, heavy metals (nickel, lead, tin), and possible cancer-causing chemicals.

It is not easy for users to know exactly what they are vaping. There have been e-cigarette cartridges labelled “nicotine free” that have been found to have nicotine.

Some people use marijuana products or other drugs by vaping.

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What are the risks and complications?

E-cigs may be less harmful than smoking normal cigarettes. Still, vaping does have health risks and complications:

- **Nicotine:** Nicotine is a stimulant. Nicotine is addictive and can lead to cravings. It is the same chemical that makes normal cigarettes habit-forming. Nicotine can harm the growing brain of adolescents and young adults. For those that are pregnant, nicotine can be harmful to the unborn baby.
- **Vaping-linked Lung Injury:** The Centers for Disease Control and Prevention (CDC) has recently reported an outbreak of lung injury from smoking e-cigs. The cause of this is not yet known. Most of those with lung injury used a marijuana product (THC) with their e-cig. Symptoms are cough, shortness of breath, chest pain, fever, upset stomach, throwing up, diarrhea and stomach pain. Symptoms appear over days to weeks.
- Battery failure can lead to explosion or fire.
- Swallowing the e-cigarette liquid can be very harmful and even deadly, especially to children.
- The long-term effects of vaping are not known.

Do e-cigs help people quit smoking?

- Many people start using e-cigs to quit or stop smoking normal cigarettes. It is not yet known if e-cigs work well for those trying to quit smoking.
- One study found that many smokers trying to quit regular cigarettes by using e-cigs ended up using both products.
- E-cigarettes have not been approved by the FDA to help people quit smoking.

Some Closing Recommendations

Here are some recommendations supported by the CDC:

- Pregnant women, teens, and children should NOT use e-cigs.
- If you don't currently use e-cigs, do NOT start.
- If you are currently using e-cigs to quit smoking, do NOT return to smoking cigarettes. Talk with your doctor about the patch or other treatments.
- Do NOT buy e-cigarette products off the streets.
- Do NOT change or add anything to the e-cig product beyond what is approved by the manufacturer.

Call your healthcare provider if you use e-cigs and develop a cough or trouble breathing.

References (cont'd)

U.S. Food and Drug Administration. 2018 NYTS Data: A Startling Rise in Youth E-cigarette Use. Available at: <https://www.fda.gov/tobacco-products/youth-and-tobacco/2018-nyts-data-startling-rise-youth-e-cigarette-use>. Last accessed 9-17-19.

Goniewicz M, Gupta R. Nicotine levels in electronic cigarette refill solutions: A comparative analysis of products from the U.S., Korea, and Poland. *Int J Drug Policy*. 2015 Jun;26(6):583-8.

Centers for Disease Control and Prevention. About Electronic Cigarettes (E-cigs). https://www.cdc.gov/tobacco/basic_information/e-cigs/about-e-cigs.html#two. Last accessed on 9/17/19.

Caraballo R. Quit Methods Used by US Adult Cigarette Smokers, 2014-2016. *Preventing Chronic Disease Vol 14*, E32. April 2017.

Rigotti N, Kalkhoran S. Vaping and e-cigs. *UpToDate*. Topic last updated Sep 10, 2019.

Centers for Disease Control and Prevention. Outbreak of Lung Disease Associated with E-Cigarette Use, or Vaping. Available at: https://www.cdc.gov/tobacco/basic_information/e-cigs/severe-lung-disease.html. Last accessed 10/7/19

Giardina E. Cardiovascular effects of nicotine. *UpToDate*. Last updated Dec 16, 2017

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