

Electronic nicotine delivery systems

What physicians should know about ENDS

- Electronic nicotine delivery systems (ENDS), also called e-cigarettes, vaping devices or vape pens, are battery-powered devices used to smoke or “vape” a flavored solution.
- ENDS solution often contains nicotine, an addictive chemical also found in cigarettes.
- ENDS use is popular—the rate of adults trying an e-cigarette at least once more than doubled from 2010 to 2013,¹ and more youth are current users of e-cigarettes than combustible cigarettes.²
- There are no federal regulations addressing ENDS. Therefore, ingredients listed on packaging may not be accurate, may differ in quantities between devices, and product quality control is conducted by the manufacturer alone, if at all.
- Exhaled ENDS vapor is not harmless water vapor—it has been shown to contain chemicals that cause cancer,³ can cause harm to unborn babies,⁴ and is a source of indoor air pollution.⁵ ENDS are promoted as a way to smoke where smoking is prohibited. However, state and local officials are incorporating ENDS use into existing smoke-free air regulations to protect health.
- Some people use ENDS as a way to quit smoking combustible cigarettes, but this has not been proven effective,⁶ and some people use both devices due to the addictive nature of nicotine.

ENDS are a health hazard

- Lack of federal regulation means ENDS companies can legally promote these products by using techniques that cigarette companies have not been able to use since the 1998 Master Settlement Agreement. The agreement covered television and radio ads, billboards, outdoor signage, and sponsorships.
- ENDS and ENDS solutions are available in many flavors (bubble gum, chocolate, peppermint, etc.) that appeal to youth. Flavors, design, and marketing renormalize and glamorize smoking.
- There are no packaging safety standards for ENDS or the containers that hold ENDS solution. There is no mandate for safety warnings, child-resistant packaging, or flow restrictors that could make these products safer. As a result, U.S. poison control centers have reported skyrocketing adverse exposures from e-cigarettes and liquid nicotine since 2011.⁷

What physicians should tell patients and families about ENDS

- ENDS emissions are not harmless water vapor. Both the user and those around them are exposed to chemicals, some of which cause cancer.
- The U.S. Preventive Services Task Force guidelines show there is not enough evidence to recommend ENDS for smoking cessation.⁶ Patients may ask about ENDS because they are interested in quitting smoking. Be ready to counsel as appropriate.
- Ask the right questions: “Do you smoke?” is not the same as, and is a less effective way to get patients talking than, “Do you vape or use electronic cigarettes?”
- Recommend FDA-approved cessation products and refer patients to the state quitline (1-800-QUIT NOW), a text-based program (text QUIT to 47848), or an in-person cessation program.
- Insurance covers some medications and programs, and grants may be available to offer free cessation help. Do not let cost be a barrier to quitting.



References

- 1) King BA, Patel R, Nguyen KH, Dube SR. Trends in awareness and use of electronic cigarettes among U.S. adults, 2010-2013. *Nicotine Tob Res.* 2015;17(2):219-27
- 2) Johnston LD, et al. Monitoring the future. National survey results on drug use. 1975-2014. Overview. Key findings on adolescent drug use. National Institutes of Health. National Institute on Drug Abuse. The University of Michigan. Institute for Social Research. Ann Arbor, MI. 2015. <http://www.monitoringthefuture.org/pubs/monographs/mtf-overview2014.pdf>. Accessed October 2, 2015.
- 3) Grana R, Benowitz N, Glantz SA. E-cigarettes: a scientific review. *Circulation.* 2014;129(19):1972-86.
- 4) Bahl V, Lin S, Xu N, Davis B, Wang YH, Talbot P. Comparison of electronic cigarette refill fluid cytotoxicity using embryonic and adult models. *Reprod Toxicol.* 2012;34(4):529-37.
- 5) Schober W, Szendrei K, Matzen W, et al. Use of electronic cigarettes (e-cigarettes) impairs indoor air quality and increases FeNO levels of e-cigarette consumers. *Int J Hyg Environ Health.* 2014;217(6):628-37.
- 6) Siu AL. Behavioral and pharmacotherapy interventions for tobacco smoking cessation in adults, including pregnant women: U.S. Preventive Services Task Force Recommendation Statement. *Ann Intern Med.* doi:10.7326/M15-2023. [Epub ahead of print 22 September 2015].
- 7) American Association of Poison Control Centers. Electronic Cigarettes and Liquid Nicotine Data. August 31, 2015. https://aapcc.s3.amazonaws.com/files/library/E-cig__Nicotine_Web_Data_through_8.2015_BjzqUYv.pdf. Accessed Oct. 1, 2015.

Last updated: December 2015

