

E-cigarettes & Smoke-free Laws

Prohibiting E-cigarette use in workplaces, restaurants, and bars



ACS CAN advocates for comprehensive smoke-free workplace laws to protect workers and the public from the harmful effects of secondhand exposure and to create communities that support tobacco-free living.

The use of electronic cigarettes or e-cigarettes, including supposed non-nicotine e-cigarettes, should be prohibited in all workplaces, restaurants, and bars to protect against secondhand exposure to nicotine and other potentially harmful chemicals, to ensure the enforcement of existing smoke-free laws are not compromised, and to ensure that the public health benefits of a smoke-free laws are not undermined.

“E-cigarette aerosol is not harmless. It can contain harmful and potentially harmful constituents, including nicotine.” – A Report of the Surgeon General

E-cigarettes are a diverse group of products that can go by many names including vape pens, tank systems, e-hookah, and mods. E-cigarettes are typically battery-operated products designed to deliver a heated solution, or aerosol of nicotine and other chemicals, to the user. E-cigarettes can be disposable or consist of a rechargeable, battery-operated heating element; a replaceable or refillable cartridge that may contain nicotine, flavoring agents, and other chemicals (sometimes called “e-juices”); and an atomizer that uses heat to convert the contents of the cartridge into an aerosol that is inhaled by the user.ⁱ

E-cigarettes pose potential health risks to users and nonusers

There are serious questions about the safety of inhaling the substances in e-cigarette aerosol. Studies have shown that the use of e-cigarettes can cause short-term lung changes and irritations.ⁱⁱ E-cigarettes also pose a potential risk to nonusers through secondhand exposure to toxicants in the aerosol. Secondhand exposure occurs when the user exhales the aerosol exposing nonusers. The level of secondhand exposure to a nonuser depends on several factors including the type of e-cigarette, concentration of the e-liquid, strength of the heating device, particle sizes in the aerosol, how the e-cigarette is used, and other environmental factors.

Unlike a vapor, an aerosol contains fine particles of liquid, solid, or both. One study found up to 31 constituents in the aerosol, including nicotine, acetaldehyde, and diacetyl, a chemical linked to serious lung disease.ⁱⁱⁱ E-cigarettes can vary in the amount of nicotine present and contain a flavor, of which there are thousands of flavors on the market.^{iv} Studies have found the aerosol to contain ultrafine particles that can be inhaled deeply into the lungs, heavy metals, volatile organic compounds and tobacco-specific nitrosamines, among other potentially harmful chemicals.^{v,vi,vii}

Chemicals identified in some e-cigarette aerosol include:

- Propylene glycol
- Nicotine
- Tobacco-specific nitrosamines
- Metals
- Volatile organic compounds
- Polycyclic aromatic hydrocarbons

Several studies have also found an increase in nicotine or its biomarker in nonusers of e-cigarettes after secondhand exposure.^{viii} This exposure could be especially problematic for vulnerable populations such as children, pregnant women, and people with heart disease depending on the level of exposure. While, additional research is underway to understand e-cigarette emissions and the health effects of secondhand exposure on nonusers which considers the great diversity in products and patterns of use, action can be taken now to protect nonusers from the potential risks of exposure to e-cigarette aerosol.

E-cigarette use in workplaces, restaurants, and bars can undermine the public health benefits of smoke-free laws and compromise enforcement.

Tobacco users are not the only ones who breathe the deadly smoke—all the people around them are forced to inhale it too. Recognizing that there is no safe level of secondhand smoke exposure, 25 states and more than 800 localities have comprehensive smoke-free laws.^{ix} These laws protect nonusers from exposure to secondhand smoke and reduce the acceptability of smoking which, in turn, reduce the number of people, especially youth, who start smoking and increases quit attempts by smokers. The increased protection and reduced acceptability have led to lower smoking rates and improved health status, including fewer heart attacks and cancers.^x To further protect the public's health, 10 states and 615 localities have restricted the use of e-cigarettes in smoke-free venues.

The use of e-cigarettes in workplaces, restaurants, and bars can undermine the public health benefits that continue to be achieved by smoke-free laws. E-cigarette users who continue to use cigarettes will not experience the health benefits of quitting, and nonusers can be exposed to their secondhand aerosol. Because some e-cigarettes are designed to look like cigarettes and cigars, the unacceptability of smoking in public places could be compromised leading to new users or a reduction in current users who quit. Additionally, from a practical standpoint, business owners can face difficulty when enforcing smoke-free laws if e-cigarette use is permitted. The risks do not prevent some e-cigarette manufacturers from specifically marketing their products for use in places where smoking is prohibited.

E-cigarette use is on the rise and requires federal, state, and local action.

Since the introduction of e-cigarettes to the U.S. market almost a decade ago, the marketing and use of these products have increased.

- Youth: A study from the Centers for Disease Control and Prevention (CDC) found that e-cigarette use increased in high school students from 1.5 percent in 2011 to 16 percent in 2015. Among middle school students, e-cigarette use increased from 0.6 percent to 5.3 percent between 2011 and 2015. That translates to more than three million youth who have tried e-cigarettes.^{xi}
- Adults: In 2015, 3.5 percent of adults were current e-cigarette users. Among those e-cigarette users, 58.8 percent were current cigarette smokers, 29.8 percent were former smokers and 11.4 percent were never smokers. Although among e-cigarette users between the ages of 18-24, 40 percent had never been cigarette smokers.^{xii}

The American Society of Heating, Refrigeration, and Air-Condition Engineers^{xiii}:

- Includes emissions produced by e-cigarettes in the definition of environmental tobacco smoking (also called secondhand smoke)
- Concludes that the only way to eliminate the health risks of secondhand smoke exposure is to prohibit the smoking behavior
- Furthermore, no engineering approaches, including ventilation and air cleaning technologies, can eliminate the health risk.

E-cigarette manufacturers may claim the ingredients are just “water vapor” or “safe,” but there is no sure way for e-cigarette users to know exactly what they are consuming. Nor is there any way of knowing what nonusers are exposed to and the extent of the health risk. Federal regulation will help provide that information, but action is potentially years away. Additionally, there are hundreds of types of e-cigarettes on the market today and the products vary considerably by ingredients, and quality control and assurance. Prohibiting the use of e-cigarettes in workplaces, restaurants, and bars can protect the public health by preventing nonusers from being exposed nicotine and other potentially harmful chemicals in these products.

ⁱ U.S. Food and Drug Administration. E-Cigarettes: Questions and Answers. September 17, 2010. Available online at <http://www.fda.gov/ForConsumers/ConsumerUpdates/ucm225210.htm>.

ⁱⁱ Callahan-Lyon, P. Electronic cigarettes: human health effects. *Tobacco Control* 2014; 23: ii36-II40.

ⁱⁱⁱ Sleiman M, et al. Emissions from Electronic Cigarettes: Key Parameters Affecting the Release of Harmful Chemicals. *Environmental Science & Technology* 2016; 50 (1&) 9644-9651.

^{iv} Goniewicz ML et al. Nicotine levels in electronic cigarette refill solutions: a comparative analysis of products from the U.S., Korea, and Poland. *International Journal of Drug Policy* 2015; 26(6): 583-8. Zhu SH et al. Four hundred and sixty brands of e-cigarettes and counting: implications for product regulation. *Tobacco Control* 2014; 23(Suppl 3): iii3-iii9.

^v Cheng, T. Chemical evaluation of electronic cigarettes. *Tobacco Control* 2014; 23: ii11-ii17.

^{vi} Goniewicz, ML et al. Levels of selected carcinogens and toxicants in vapour from electronic cigarettes. *Tobacco Control* 2014; 23:122-9.

^{vii} U.S. Department of Health and Human Services. E-Cigarette Use Among Youth and Young Adults. A Report of the Surgeon General. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2016.

^{viii} Jan Czogala, PhD, Maciej L. Goniewicz, PharmD, PhD, Bartłomiej Fidelus, PharmD, Wioleta Zielinska-Danch, PhD, Mark J. Travers, PhD, Andrzej Sobczak, PhD; Secondhand Exposure to Vapors From Electronic Cigarettes. *Nicotine Tob Res* 2014; 16 (6): 655-662. Flouris AD et al. Acute impact of active and passive electronic cigarette smoking on serum cotinine and lung function. *Inhalation Toxicology* 2013; 25(2): 91-101.

^{ix} American Cancer Society Cancer Action Network. How Do You Measure Up 2016. <https://www.acscan.org/sites/default/files/National%20Documents/HDYMU-2016.pdf>

^x U.S. Department of Health and Human Services. The Health Consequences of Smoking: 50 Years of Progress. A Report of the Surgeon General. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2014.

^{xi} Centers for Disease Control and Prevention. [Tobacco Use Among Middle and High School Students—United States, 2011–2015](#). *Morbidity and Mortality Weekly Report*, 2016;65(14):361–7

^{xii} *QuickStats*: Cigarette Smoking Status Among Current Adult E-cigarette Users, by Age Group — National Health Interview Survey, United States, 2015. *MMWR Morb Mortal Wkly Rep* 2016;65:1177. DOI: <http://dx.doi.org/10.15585/mmwr.mm6542a7>.

^{xiii} ASHRAE. Position Document on Secondhand Smoke, reaffirmed by ASHRAE Technology Council June 29, 2016. ASHRAE. Ventilation for Acceptable Indoor Air Quality, 2015 Supplement.