



## What is **Secondhand Aerosol** from E-Cigarettes?

E-cigarettes produce an aerosol by heating a liquid that usually contains nicotine and other harmful chemicals. When the aerosol is exhaled by the user, bystanders can involuntarily breathe in this aerosol.<sup>5</sup>

### What are the harmful effects of secondhand e-cigarette aerosol?

Scientific evidence indicates that the aerosol emitted by e-cigarettes may expose nonusers, including children and infants, to aerosolized nicotine and other potentially harmful substances which are not as safe as clean air.<sup>1</sup>

### Who is exposed?

- In 2017, more than half (55.1%, 14.3 million) of U.S. middle and high school students reported exposure to secondhand tobacco product emissions in indoor or outdoor public places.<sup>2</sup>
- According to the 2015 and 2017 National Youth Tobacco Survey, the following individuals were more at risk to the exposure of e-cigarette emissions:
  - Female students versus male students
  - High school students versus middle school students
  - Current e-cigarette users versus nonusers
  - Students who reported that a household member used tobacco products<sup>2</sup>
- Aerosol emissions have increased with newer developed devices putting anyone exposed to greater health risks.<sup>7</sup>

### How toxic are emissions from e-cigarettes?

In 2016, the Surgeon General concluded that secondhand emissions contain, "nicotine; ultrafine particles; flavorings such as diacetyl, a chemical linked to serious lung disease; volatile organic compounds such as benzene, which is found in car exhaust; and heavy metals, such as nickel, tin, and lead."<sup>3,4</sup> Other chemicals found in secondhand aerosol include:

- Propylene Glycol
- Glycerin
- Formaldehyde
- Acetaldehyde<sup>8</sup>

### How can the public be protected from secondhand emissions?

- Include e-cigarettes in smokefree policies for indoor and outdoor public places.<sup>4</sup>
- Advocate for all states to pass comprehensive smokefree laws and policies.
- Urge the federal government to help protect those living in public and subsidized housing.<sup>6</sup>
- Provide education on the harmful effects from using e-cigarettes.<sup>7</sup>

#### References

- <sup>1</sup>Nguyen, K, Tong, V, Marynak, K and King, B, 2020. Perceptions Of Harm To Children Exposed To Secondhand Aerosol From Electronic Vapor Products, *Styless Survey*, 2015 [online] Centers for Disease Control and Prevention. Available at: <[https://www.cdc.gov/ncjdd/ctd/2017/16\\_0567.htm](https://www.cdc.gov/ncjdd/ctd/2017/16_0567.htm)> [Accessed 28 April 2020].
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- <sup>4</sup>Cdc.gov. 2020 E-Cigarette Use Among Youth and Young Adults: A Report of the Surgeon General [online] Available at: <[https://www.cdc.gov/tobacco/data\\_statistics/sgr/e-cigarettes/pdfs/2018\\_sgr\\_entire\\_report\\_508.pdf](https://www.cdc.gov/tobacco/data_statistics/sgr/e-cigarettes/pdfs/2018_sgr_entire_report_508.pdf)> [Accessed 28 April 2020].
- <sup>5</sup>Cdc.gov. 2020 Electronic Cigarettes What's The Bottom Line [online] Available at: <[https://www.cdc.gov/tobacco/basic\\_information/e-cigarettes/pdfs/Electronic-Cigarettes-Infographic-ppdf](https://www.cdc.gov/tobacco/basic_information/e-cigarettes/pdfs/Electronic-Cigarettes-Infographic-ppdf)> [Accessed 29 April 2020].
- <sup>6</sup>Lung.org. 2020 Secondhand Smoke - Firsthand Risk [online] Available at: <<https://www.lung.org/blog/secondhand-smoke-firsthand-risk>> [Accessed 29 April 2020].
- <sup>7</sup>Protano, C, Avino, P, Mangrasso, M, Viviani, V, Perna, F, Valeriani, F and Vitali, M, 2020. Environmental Electronic Vape Exposure From Four Different Generations Of Electronic Cigarettes: Airborne Particulate Matter Levels [online] National Center for Biotechnology Information. Available at: <<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC620766/>> [Accessed 30 April 2020].
- <sup>8</sup>Shearson, J, Lee, L, Eazar, J, Meherally, S, Park, S, Vicasami, M, Weltzman, M and Gordon, T, 2020. Effects Of Exposure To Direct And Secondhand Hookah And E-Cigarette Aerosols On Ambient Air Quality And Cardiopulmonary Health In Adults And Children: Protocol For A Panel Study. National Center for Biotechnology Information.