E-cigarettes are a relatively new tobacco product that have been sold in the U.S. for about a decade. The e-cigarettes currently in the U.S. marketplace have not been systemically reviewed by the Food and Drug Administration to determine their impact on lung health.

**The Inhalation of Harmful Chemicals Can Cause Irreversible Lung Damage and Lung Disease**

In January 2018, the National Academies of Science, Engineering and Medicine\(^1\) released a consensus study report that reviewed over 800 different studies.

That report made clear: using e-cigarettes causes health risks. It concluded that e-cigarettes both contain and emit a number of potentially toxic substances. The Academies’ report also states there is moderate evidence that youth who use e-cigarettes are at increased risk for cough and wheezing and an increase in asthma exacerbation.

A study from the University of North Carolina found that the two primary ingredients found in e-cigarettes – propylene glycol and vegetable glycerin – are toxic to cells, and that the more ingredients in an e-liquid, the greater the toxicity.\(^2\)

E-cigarettes produce a number of dangerous chemicals including diacetyl, acrolein and formaldehyde. These toxins can cause lung disease, as well as cardiovascular (heart) disease.\(^3\)

E-cigarettes also contain acrolein, a herbicide primarily used to kill weeds. It can cause acute lung injury and COPD and may cause asthma and lung cancer.\(^4\)

Both the U.S. Surgeon General and the National Academies of Science, Engineering and Medicine have warned about the risks of inhaling secondhand e-cigarette emissions, which are created when an e-cigarette user exhales the chemical cocktail created by 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.”

The Food and Drug Administration has not found any e-cigarette to be safe and effective in helping tobacco users quit. If tobacco users are ready to quit for good, they should call 1-800-QUIT NOW or talk with their doctor about finding the best way to quit using proven methods and FDA-approved treatments and counseling.

---

\(^1\) NAM Report - [https://www.nap.edu/resource/24952/012318ecigaretteConclusionsbyEvidence.pdf](https://www.nap.edu/resource/24952/012318ecigaretteConclusionsbyEvidence.pdf)
\(^3\) Ogunwale, Munny A et al. (2017) Aldehyde Detection in Electronic Cigarette Aerosols. ACS omega 2(3): 1207-1214. doi: 10.1021/acsomega.6b00489]