

Ex-cigarette smokers who vape may be at higher risk for lung cancer

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Former cigarette smokers who use e-cigarettes or vaping devices may be at higher risk for lung cancer than those who don't vape. Credit: ATS

Former cigarette smokers who use e-cigarettes or vaping devices may be at higher risk for lung cancer than those who don't vape, according to

research published at the [ATS 2024 International Conference](#).

"This is the first large population-based study to demonstrate the increased risk of lung cancer in e-cigarette users after smoking cessation," said corresponding author Yeon Wook Kim, MD, assistant professor, Division of Pulmonary and Critical Care Medicine, Department of Internal Medicine, Seoul National University Bundang Hospital, Seongnam, Republic of Korea.

E-cigarettes have gained popularity globally as an alternative to conventional cigarette smoking, and some smokers turn to vaping to help in smoking cessation. However, there is little knowledge about the long-term consequences of vaping, and epidemiological evidence for the association between [e-cigarette use](#) and lung cancer is lacking.

Biological studies suggest the possible dangers of e-cigarettes, including pulmonary toxicity and lung cancer. E-cigarettes and heating elements have been shown to contain [carbonyl compounds](#) (e.g., formaldehyde, acetaldehyde, acrolein and diacetyl) and toxic metals (e.g., chromium, nickel and lead), which are known to be carcinogenic. These toxins are also present in conventional cigarettes.

"Our results indicate that when integrating smoking cessation interventions to reduce lung cancer risk, the [potential harms](#) of using e-cigarettes as an alternative to smoking must be considered," said Dr. Kim.

To determine these individuals' risk, the researchers evaluated 4,329,288 individuals with a history of conventional smoking who participated in the Republic of Korea's National Health Screening Program at two time points: 2012–2014 and 2018. They conducted follow-up in December 2021.

The research team categorized participants into six groups according to their smoking history and habit change. They used statistical analyses to assess each group's risk of developing lung cancer and of dying from it.

During follow-up, they found that 53,354 individuals had developed lung cancer and 6,351 died from lung cancer. Ex-cigarette smokers who had quit five years or more and used e-cigarettes were at greater risk of lung cancer-related death than ex-smokers who had quit five years or more and hadn't used e-cigarettes.

For smokers who had quit less than five years, those who used e-cigarettes were found to have a higher risk of both lung cancer and lung cancer mortality than non-e-cigarette users.

Dr. Kim and colleagues also conducted a stratified analysis in which they looked at individuals ages 50–80 with a smoking history of 20 or more pack-years, because these individuals would be likely to be referred for lung cancer screening according to the 2021 US Preventive Services Task Force (USPSTF) and the 2023 American Cancer Society (ACS) guidelines.

Ex-smokers in this group who had quit smoking for five years or more and used e-cigarettes reported a higher risk of both lung cancer and lung cancer-related death than those who didn't use e-cigarettes. In addition, ex-smokers who used e-cigarettes and had quit smoking less than five years before had a higher comparative risk of lung cancer.

The authors conclude, "Clinicians must highlight the potential harmful effects of alternative e-cigarettes use when integrating smoking [cessation](#) interventions to reduce [lung cancer](#) risk."

More information: Session: B20 – Lung screening: One size does not fit all, association of electronic cigarette use after conventional smoking

cessation with lung cancer risk: A nationwide cohort study

Provided by American Thoracic Society

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