

E-cigarette users who test positive for COVID-19 are more likely to experience symptoms

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People who use electronic cigarettes and test positive for COVID-19 have a higher frequency of experiencing COVID-19 symptoms,

compared to people who don't vape, according to new research from Mayo Clinic.

The study, which is published in the *Journal of Primary Care & Community Health*, finds that people who vape and test positive for COVID-19 have a higher frequency of experiencing [symptoms](#) such as headaches, muscle aches and pain, chest pain, nausea and vomiting, diarrhea, and loss of the sense of smell or taste. Also, the study finds that people who vape and also smoke tobacco, and who test positive for COVID-19, complained of labored breathing and had more frequent [emergency department](#) visits than those who did not vape.

"The study was designed to compare the frequency of common COVID-19 symptoms such as loss of taste or smell, headache, muscle aches and chest tightness in COVID patients who vaped, compared with those who were not vapers," says David McFadden, M.D., a Mayo Clinic internist and the study's first author. "We interviewed more than 280 COVID-positive vapers and compared them with 1,445 COVID-positive people of the same age and gender, and who don't vape. All of these common COVID symptoms were reported more frequently among people who vape."

Study participants were at least 18 and tested positive for COVID-19 at testing sites in Minnesota and Wisconsin between March 1, 2020, and Feb. 28, 2021. Data were then gathered on age; gender; ethnicity; race; COVID-19 symptoms; emergency department visits and hospitalizations; and lifestyle history, such as [vaping](#) and smoking.

Use of e-cigarettes has grown significantly over the past decade, especially among high school students and young adults, though the short- and long-term health effects of e-cigarettes are unknown. While studies have not found a connection between using e-cigarettes and testing positive for COVID-19, the Mayo Clinic study finds an

association between vaping and experiencing COVID-19 symptoms for those who test positive for COVID-19.

"There are a lot of studies that have shown that [e-cigarette](#) use may be associated with inflammation in the lungs and also may cause severe lung injury in certain users, causing a condition called e-cigarette or vaping use-associated lung injury," says Robert Vassallo, M.D., a Mayo Clinic pulmonologist and critical care specialist, and co-author of the study.

"Our research was not designed to test whether e-cigarette use increases the risk of acquiring COVID infection, but it clearly indicates that symptom burden in patients with COVID-19 who vape is greater than in those who do not vape."

The uncertainties of the health effects of e-cigarette use are due in part to the variety of devices, ingredients in the vaping liquid, and use.

Nonetheless, the study documented a significant difference in symptom frequency between those who vape and were COVID-19 positive and those who did not vape.

The increased inflammation of lung tissue promoted by COVID-19 infection and the inflammation induced by vaping may worsen the likelihood of systemic inflammation, with an associated increase in symptoms such as fever, myalgias, fatigue and headache, the study finds.

"During a pandemic with a highly transmissible respiratory pathogen like SARS-CoV-2 (the virus that causes COVID-19), it is highly advisable to reduce or stop vaping and e-cigarette use, and minimize the potential for increased symptoms and lung injury," says Dr. Vassallo.

More information: David D. McFadden et al, Symptoms COVID 19 Positive Vapers Compared to COVID 19 Positive Non-vapers, *Journal of Primary Care & Community Health* (2022). [DOI: 10.1177/21501319211062672](https://doi.org/10.1177/21501319211062672)

Provided by Mayo Clinic

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