

The Impact of Smoking and Vaping on the Prognosis of COVID-19

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COVID-19 is a coronavirus pandemic that presents with fever, dry cough and difficulty breathing. As of March 30, 2020, the Center for Disease Control has reported 140,904 confirmed COVID-19 cases and 2,405 deaths within the United States (CDC, 2020). One of the many questions this respiratory viral illness poses on the scientific community is whether a history of cigarette smoking or vaping impacts the course of the infection.

Cigarette smoking is associated with various negative health outcomes. Cigarette toxins cause excessive inflammation, which can manifest as respiratory illnesses like COPD or lung cancer. It can be detrimental to the immune system, making smokers more susceptible to contracting infectious diseases like influenza (Zhou et al.). Smoking's negative impacts on the respiratory and immune systems potentially makes it a concerning prognostic factor for a COVID-19 infection.

A recent study evaluating 78 Wuhan patients with COVID-19 induced pneumonia identified a history of smoking as a negative prognostic factor (Liu et al.). 27.3% of the patients whose health deteriorated within two weeks had a history of smoking whereas only 3% of the patients whose health stabilized or improved had a history of smoking. Other negative prognostic factors that were identified in this study include age and maximum temperature on admission

Another study assessing 1,099 Chinese, COVID-19 patients determined smokers were 1.4 times more likely to show severe symptoms compared to non-smokers (Guan, Vardavas & Nikitara). Furthermore, smokers were 2.4 times more likely to require advanced treatment (ICU admission or mechanical ventilation) or die compared to non-smokers.

Concerns have also sparked regarding vaping's connection with COVID-19 complications. As of January 21, 2020, the Center of Disease Control (CDC) reported 2,711 of E-cigarette or Vaping Product Use Associated Lung Injury (EVALI) hospitalizations or deaths within the US. The majority of injuries secondary to vaping reported using products with THC/CBD and a vitamin E acetate additive (Christiani). Flavorants have also been identified that influence cytoskeletal and cilia expression, negatively impacting the lungs ability to expel toxins. Vaping may also influence immunity, as one study discovered influenza infected mice models demonstrate enhanced lung inflammation and lung damage after prior exposure to vape aerosols.

Evidence regarding vaping and its impacts on COVID-19 infections is still young (Ducharme). Although evidence is currently inconclusive, health professionals are concerned with the alarming prevalence of vaping and COVID-19 infections with American young adults.

Current evidence suggests that cigarette smoking negatively impacts the course of a COVID-19 infection while there is still insufficient evidence regarding the implications regarding vaping. More data is still required to solidify these trends. In the meanwhile, the best form of protection is prevention with physical distancing.

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