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Reduce your risk of serious lung disease caused by corona virus by quitting smoking and vaping

When someone's lungs are exposed to flu or other infections the adverse effects of smoking or vaping are much more serious than among people who do not smoke or vape.

Smoking is associated with increased development of acute respiratory distress syndrome (ARDS) in people with a risk factor like severe infection, non-pulmonary sepsis (blood infection), or blunt trauma. People who have *any* cotinine (a metabolite of nicotine) in their bodies – even at the low levels associated with secondhand smoke – have substantially increased risk of acute respiratory failure from ARDS ([paper 1](#), [paper 2](#), [paper 3](#)).

The recent [excellent summary](#) of the evidence on the pulmonary effects of e-cigarettes reported multiple ways that e-cigarettes impair lungs' ability to fight off infections:

Effects on immunity

Reporting of respiratory symptoms by e-cigarette users suggests increased susceptibility to and/or delayed recovery from respiratory infections. A study of 30 healthy non-smokers exposed to e-cigarette aerosol found decreased cough sensitivity.⁸² If human ciliary dysfunction is also negatively affected, as suggested by animal and cellular studies,⁸³ the combination of reduced coughing and impaired mucociliary clearance may predispose users to increased rates of pneumonia. Exposure to e-cigarettes may also broadly suppress important capacities of the innate immune system. Nasal scrape biopsies from non-smokers, smokers, and vapers showed extensive immunosuppression at the gene level with e-cigarette use.⁸⁴ Healthy non-smokers were exposed to e-cigarette aerosol, and bronchoalveolar lavage was obtained to study alveolar macrophages.⁴⁶ The expression of more than 60 genes was altered in e-cigarette users' alveolar macrophages two hours after just 20 puffs, including genes involved in inflammation. Neutrophil extracellular trap (NET) formation, or NETosis, is a mode of innate defense whereby neutrophils lyse DNA and release it into the extracellular environment to help to immobilize bacteria, a process that can also injure the lung.⁸⁵ Neutrophils from chronic vapers have been found to have a greater propensity for NET formation than those from cigarette smokers or non-smokers.⁵⁷ Given that e-cigarettes may also impair neutrophil phagocytosis,⁸⁶ these data suggest that neutrophil function may be impaired in e-cigarette users. [emphasis added]

Studies in animals reinforce and help explain these human effects:

Two weeks of exposure to e-cigarette aerosol in mice decreased survival and increased pathogen load following inoculation with either *Streptococcus pneumoniae* or influenza A, two leading causes of pneumonia in humans.⁹⁷ Furthermore, the aerosol exposure may lead to enhanced upper airway colonization with pathogens and to virulent changes in pathogen phenotype, as shown with *Staphylococcus aureus*.^{98 99} Thus, although more studies are needed, ***the animal data suggesting that vaping leads to an increased susceptibility to infection would seem to correlate with the population level data in young adult humans, whereby vapers have increased rates of symptoms of chronic bronchitis.***²³ [emphasis added]

Consistent with this science, [analysis of deaths from corona virus in China](#) shows that men are more likely to die than women, something that may be related to the fact that many more Chinese men smoke than women. Among Chinese patients diagnosed with COVID-19 associated pneumonia, [the odds of disease progression \(including to death\) were 14 times higher among people with a history of smoking](#) compared to those who did not smoke. This was the strongest risk factor among those examined.

CDC, FDA, the Surgeon General, state health departments and everyone (including [comedians](#), such as [John Oliver](#) who spent his whole show on the issue last weekend) working to educate the public on how to lower risk of serious complications from covid-19 should ***add stopping smoking, vaping, and avoiding secondhand exposure to their list of important preventive measures.***

This would also be a good time for cities, states private employers and even individual families ***to strengthen their smokefree laws and policies*** – including e-cigarettes -- to protect nonsmokers from the effects of secondhand smoke and aerosol on their lungs and to create an environment that will help smokers quit.