

Face masks unlikely to cause over-exposure to CO₂, even in patients with lung disease

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Face masks do not contribute to carbon dioxide poisoning. Face masks is key to preventing COVID-19 infection. Credit: ATS

New research findings contradict statements linking wearing face masks to carbon dioxide poisoning by trapping CO₂. During the COVID-19 pandemic the wearing of face masks has become a highly political issue with some individuals falsely claiming that wearing face masks may be putting people's health at risk. The study published in the *Annals of the American Thoracic Society* shows otherwise.

In "Effect of Face Masks on Gas Exchange in Healthy Persons and Patients with COPD," Michael Campos, MD and co-authors assessed problems with [gas exchange](#), that is, changes in oxygen level or carbon dioxide levels in healthy individuals as well as veterans with [chronic obstructive pulmonary disease](#) or COPD before and while using [surgical masks](#). People with COPD, according to the ATS Patient Education Fact Sheet on the disease, "must work harder to breathe, which can lead to shortness of breath and/or feeling tired."

"We show that the effects are minimal at most even in people with very severe lung impairment," said Dr. Campos of the Miami Veterans Administration Medical Center and the Division of Pulmonary, Allergy, Critical Care and Sleep Medicine at the University of Miami.

As for the feeling of breathlessness that some healthy people may experience, Dr. Campos explained: "Dyspnea, the feeling of shortness of breath, felt with masks by some is not synonymous of alterations in gas exchange. It likely occurs from restriction of air flow with the mask in particular when higher ventilation is needed (on exertion)."

If you're walking briskly up an incline, for example, you may experience feelings of breathlessness. An overly tight mask may also increase the feeling of breathlessness. The solution is simply to slow down or remove the mask if you are at a safe distance from other people.

Dr. Campos stressed the importance of wearing a face mask to prevent COVID-19 infection. If a surgical mask is not available, a cloth mask with at least two layers is recommended by the CDC. Patients with lung disease, in particular, should avoid getting infected and should wear a [face mask](#), which, along with handwashing and social distancing, is proven to reduce the risk of COVID-19 infection.

The impetus for the study came after reports of a public hearing in Florida where individuals made inflammatory comments, namely that wearing masks were putting lives at risk and finding out that no data on the effects of surgical masks on gas exchange was available.

"We acknowledge that our observations may be limited by sample size, however our population offers a clear signal on the nil effect of surgical masks on relevant physiological changes in gas exchange under routine circumstances (prolonged

rest, brief walking)," wrote the authors. "It is important to inform the public that the discomfort associated with mask use should not lead to unsubstantiated safety concerns as this may attenuate the application of a practice proven to improve public health."

"The public should not believe that [masks](#) kill," added Dr. Campos.

Provided by American Thoracic Society

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