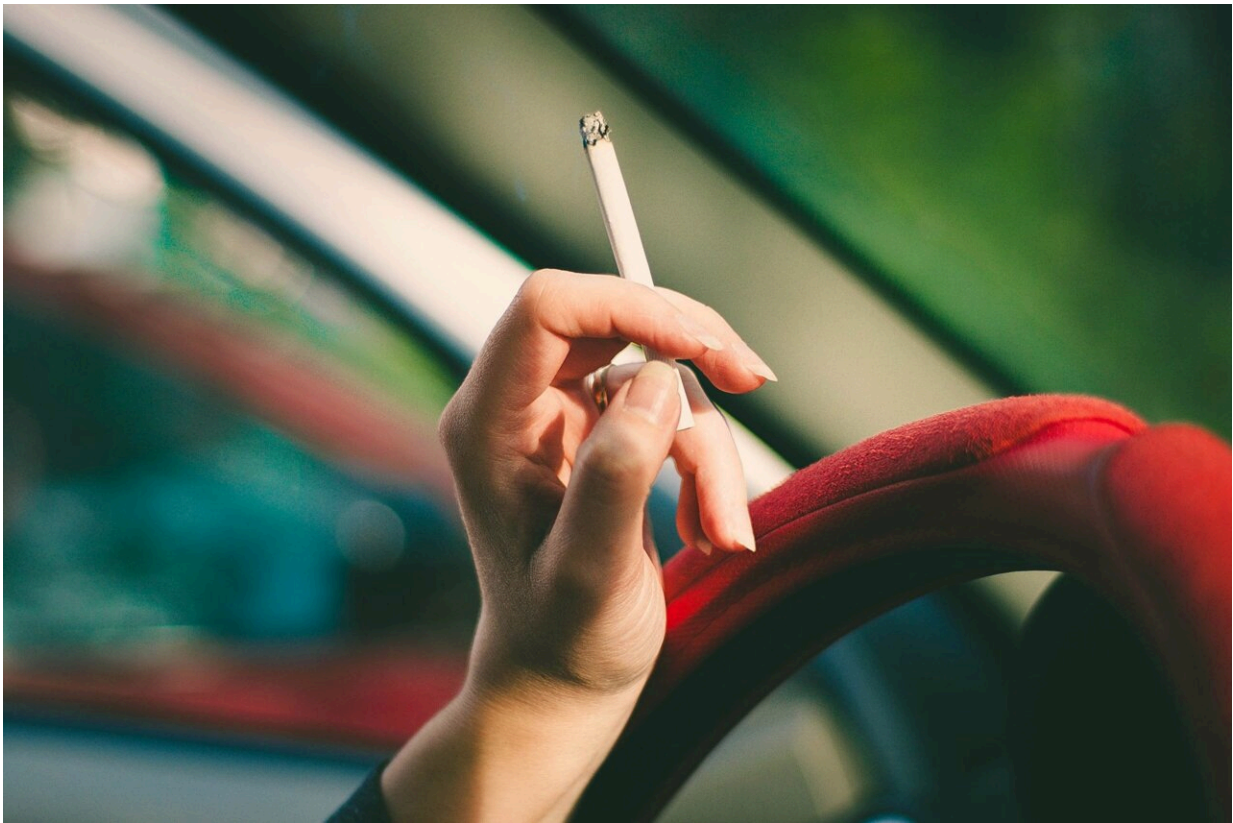


Smoking and obesity found to increase risk of severe COVID-19 by 65% to 81%

December 15 2022



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Researchers from the School of Public Health, LKS Faculty of Medicine of The University of Hong Kong (HKUMed), in collaboration with The Chinese University of Hong Kong (CUHK)'s Faculty of Medicine (CU

Medicine), confirmed smoking, obesity and lower socioeconomic position (SEP) likely increase the risk of contracting mild to severe COVID-19, using data from large scale genome-wide association studies.

Other exposures thought to be related to COVID-19 risk, such as glycemic traits, type 2 diabetes, and vitamin D, are likely unrelated. The researchers also found angiotensin-converting enzyme 2 (ACE2), the key receptor of SARS-CoV-2, mediates part of the detrimental effect of [obesity](#) and SEP. The findings have been published in the *Journal of Medical Virology*.

[Epidemiologic studies](#) show a variety of factors related to increased risk of COVID-19, such as type 2 diabetes, although [paradoxical findings](#) have also been reported, such as an inverse association of smoking with COVID-19 severity.

However, these associations may not be causal due to limitations in [observational studies](#). Using better designs to understand the determinants of COVID-19 risk would be particularly important to devise effective mitigation measures to reduce the risk of COVID-19 in the population.

In this regard, the research team conducted a comprehensive assessment of the role of multiple risk factors (vitamin D, glycemic traits, [blood pressure](#), smoking, obesity and SEP) in various severities of COVID-19 risk using a method called Mendelian randomization. As genetic variants are used, this approach might circumvent some of the limitations of conventional observational epidemiologic studies. The research team also explored whether ACE2 mediates any of these detrimental effects.

Using Mendelian randomization, researchers extracted genetic variants related to the various risk factors described above (N

Citation: Smoking and obesity found to increase risk of severe COVID-19 by 65% to 81% (2022, December 15) retrieved 14 July 2023 from <https://medicalxpress.com/news/2022-12-obesity-severe-covid-.html>

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