

Patients who are overweight or obese at risk of more severe COVID-19

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Patients who are overweight or obese have more severe COVID-19 and are highly likely to require invasive respiratory support, according to a new international study. Credit: i yunmai

Patients who are overweight or obese have more severe COVID-19 and are highly likely to require invasive respiratory support, according to a new international study.

The research, led by the Murdoch Children's Research Institute (MCRI) and The University of Queensland and published in *Diabetes Care*, found obese or overweight patients are at high risk for having worse COVID-19 outcomes. They are also more likely to require oxygen and invasive mechanical ventilation compared to those with a healthy weight.

MCRI researcher Dr. Danielle Longmore said the findings, which highlighted the relationship between [obesity](#) and increased COVID-19 disease burden, showed the need to urgently introduce strategies to address the complex socio-economic drivers of obesity, and public policy measures such as restrictions on junk food advertising.

"Although taking steps to address obesity in the short-term is unlikely to have an immediate impact in the COVID-19 pandemic, it will likely reduce the disease burden in future viral pandemics and reduce risks of complications like heart disease and stroke," she said.

The study looked at hospitalized SARS-CoV-2 patients from 18 hospitals in 11 countries including China, America, Italy, South Africa and The Netherlands.

Among the 7244 patients aged 18 years and over, 34.8 per cent were overweight and 30.8 per cent were obese.

COVID-19 patients with obesity were more likely to require oxygen and had a 73 per cent greater chance of needing invasive mechanical ventilation. Similar but more modest results were seen in [overweight patients](#). No link was found between being overweight or obese and dying in hospital from COVID-19.

Cardiovascular and pre-existing [respiratory diseases](#) were associated with increased odds of in-hospital deaths but not a greater risk for needing oxygen and mechanical ventilation. For patients with pre-existing diabetes, there was increased odds of needing invasive respiratory support, but no additionally increase in risk in those with obesity and diabetes.

Men were at an increased risk of severe COVID-19 outcomes and needing invasive mechanical ventilation. In those aged over 65 years, there was an increased chance of requiring oxygen and higher rates of in-hospital deaths.

The University of Queensland's Dr. Kirsty Short, who co-led the research, said almost 40 per cent of the global population was overweight or obese.

"Obesity is associated with numerous poor health

outcomes, including increased risk of cardiometabolic and respiratory disease and more severe viral disease including influenza, dengue and SARS-CoV-1," she said.

Dr. Short said while previous reports indicated that obesity was an important risk factor in the severity of COVID-19, almost all this data had been collected from single sites and many regions were not represented. Moreover, there was a limited amount of evidence available about the effects of being overweight or obese on COVID-19 severity.

"Given the large scale of this study we have conclusively shown that being overweight or obese are independent risk factors for worse outcomes in adults hospitalized with COVID-19," she said.

MCRI Professor David Burgner, who co-led the research, said the data would help inform immunization prioritization for higher-risk groups.

"At the moment, the World Health Organization has not had enough high-quality data to include being overweight or obese as a risk factor for severe COVID-19 [disease](#). Our study should help inform decisions about which higher-risk groups should be vaccinated as a priority," he said.

More information: Danielle K. Longmore et al. Diabetes and Overweight/Obesity Are Independent, Nonadditive Risk Factors for In-Hospital Severity of COVID-19: An International, Multicenter Retrospective Meta-analysis. *Diabetes Care* April 15, 2021 doi.org/10.2337/dc20-2676

Provided by Murdoch Children's Research Institute

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