

Substantial weight loss can reduce risk of severe COVID-19 complications

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A Cleveland Clinic study shows that among patients with obesity, prior weight loss achieved with bariatric surgery was associated with a 60% lower risk of developing severe complications from COVID-19

infection. The research was published in the journal *JAMA Surgery*.

Numerous studies have established obesity as a major risk factor for developing serious illness from an infection of SARS-CoV-2, the virus that causes COVID-19. Obesity weakens the immune system, creates a chronic inflammatory state, and increases risk for [cardiovascular disease](#), blood clots, and lung conditions. All of these conditions can complicate COVID-19.

The aim of this study was to examine whether a successful weight-loss intervention in patients with obesity prior to contracting COVID-19 could reduce the risk of developing a severe form of this disease.

"The research findings show that patients with obesity who achieved substantial and sustained weight loss with bariatric surgery prior to a COVID-19 infection reduced their risk of developing severe illness by 60 percent," said Ali Aminian, M.D., lead author of the study and director of Cleveland Clinic's Bariatric & Metabolic Institute. "Our study provides strong evidence that obesity is a modifiable risk factor for COVID-19 that can be improved through a successful weight-loss intervention."

A total of 20,212 adult patients with obesity were included in this observational study. A group of 5,053 patients with a [body mass index](#) (BMI) of 35 or greater who had weight-loss surgery between 2004 and 2017 were carefully matched 1:3 to non-surgical patients, resulting in 15,159 control patients. Compared with those in the non-surgical group, patients who had [bariatric surgery](#) lost 19% more body weight prior to March 1, 2020 (the beginning of the COVID-19 outbreak in Cleveland).

After the COVID-19 outbreak, researchers looked at four COVID-19-related outcomes: rate of contracting SARS-CoV-2 infection, hospitalization, need for supplemental oxygen and severe

disease (defined as a combination of ICU admission, need for mechanical ventilation or death).

Although the rate of contracting SARS-CoV-2 was similar between the groups (9.1% in the surgical group and 8.7% in the non-surgical group), participants in the weight-loss surgery group experienced much better outcomes after contracting COVID-19 compared with those in the non-surgical group. Researchers found that patients with prior weight loss surgery had a 49% lower risk of hospitalization, 63% lower risk of need for supplemental oxygen, and 60% [lower risk](#) of developing severe COVID-19.

Although the exact underlying mechanisms are not known, these data suggest that patients who underwent weight-loss surgery were healthier at the time of contracting a SARS-CoV-2 infection, which resulted in better clinical outcomes.

"Striking findings from the current study support the reversibility of the health consequences of obesity in the patients with COVID-19," said the study's senior author, Steven Nissen, M.D., Chief Academic Officer of the Heart, Vascular and Thoracic Institute at Cleveland Clinic. "This study suggests that an emphasis on [weight loss](#) as a public health strategy can improve outcomes during the COVID-19 pandemic and future outbreaks or related infectious diseases. That is a very important finding considering that 40% of Americans have [obesity](#)."

More information: Association of Weight Loss Achieved Through Metabolic Surgery With Risk and Severity of COVID-19 Infection, *JAMA Surgery* (2021). [DOI: 10.1001/jamasurg.2021.6496](https://doi.org/10.1001/jamasurg.2021.6496)

Provided by Cleveland Clinic

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