

# Obesity may alter immune system response to COVID-19

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Obesity may cause a hyperactive immune system response to COVID-19 infection that makes it difficult to fight off the virus, according to a new manuscript published in the Endocrine Society's journal, *Endocrinology*.

Obesity not only leads to problems like [heart disease](#) and diabetes, but also influences the [immune system](#) in many ways. Obesity causes a chronic, low grade activation of some parts of the immune system. When someone with this preexisting condition is faced with an infection, this could lead to hyper-activation of the immune system, but in a detrimental way that does not fight infection.

"The COVID-19 pandemic has made us aware of the complex interactions of obesity with [infectious diseases](#), and the gaps in our understanding of how [chronic health conditions](#) affect our immune responses to acute infection," said the study's corresponding author, Durga Singer, M.D., of the University of Michigan in Ann Arbor, Mich. "Recent evidence has highlighted how one part of the immune system, the macrophage, may be a culprit in driving severe COVID-19 disease. Our manuscript focuses on what is already known about the interaction of obesity, macrophages and other infections like influenza. These findings highlight the importance of understanding how obesity might interact with new drugs or vaccines that are developed for COVID-19."

In this review, the authors describe the impact of obesity on the immune system. They discuss the irregular immune responses caused by obesity that drive organ injury in severe COVID-19 infection and impair a person's ability to fight the virus.

**More information:** Gabrielle P Huizinga et al. The Collision of Meta-Inflammation and SARS-CoV-2 Pandemic Infection. *Endocrinology* Published: 03 September 2020. [doi.org/10.1210/endo/bqaa154](https://doi.org/10.1210/endo/bqaa154)

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