

# Higher levels of NETs in blood associated with more severe COVID-19

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This scanning electron microscope image shows SARS-CoV-2 (yellow)—also known as 2019-nCoV, the virus that causes COVID-19—isolated from a patient, emerging from the surface of cells (blue/pink) cultured in the lab. Credit: NIAID-RML

New research finds a connection between destructive white blood cells

and a more severe disease course in patients with COVID-19.

"We found that patients with COVID-19 infection have higher blood levels of neutrophil extracellular traps, also called NETs, which are a product of an inflammatory type of neutrophil cell death called NETosis," says first author Yu (Ray) Zuo, M.D., a Michigan Medicine rheumatologist.

Zuo worked on the study with Yogen Kanthi, M.D., a cardiologist and vascular medicine specialist at the Michigan Medicine Frankel Cardiovascular Center, and Jason Knight, M.D., Ph.D., a rheumatologist at Michigan Medicine, who study inflammation and neutrophils. The researchers analyzed [blood samples](#) from 50 patients with COVID-19 for this publication.

Zuo and colleagues say, in light of the COVID-19 pandemic, there is an urgent need to better understand what causes the inflammatory storm and [blood clots](#) triggered by SARS-CoV-2 infection—a storm that leads to [respiratory failure](#) and a requirement for mechanical ventilation in many patients. They believe NETs may be relevant to many aspects of COVID-19 research, given that thrombosis and inflammation are hallmarks of severe infection.

This is the first publication to come out of the Frankel CVC's CV Impact Research Ignitor Grant program, which was created to address COVID-19 from both basic science and clinical perspectives.

**More information:** Yu Zuo et al, Neutrophil extracellular traps in COVID-19, *JCI Insight* (2020). [DOI: 10.1172/jci.insight.138999](https://doi.org/10.1172/jci.insight.138999)

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