

Study ties blood type to COVID-19 risk; O may help, A hurt

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In this June 12, 2020, file photo, a health worker draws blood for COVID-19 antibody testing in Dearborn, Mich. A genetic analysis of COVID-19 patients published Wednesday, June 17, 2020, in the *New England Journal of Medicine* suggests a person's blood type may have some influence on whether they develop severe disease. (AP Photo/Paul Sancya, File)

A genetic analysis of COVID-19 patients suggests that blood type might influence whether someone develops severe disease.

Scientists who compared the genes of thousands of patients in Europe found that those who had Type A blood were more likely to have severe disease while those with Type O were less likely.

Wednesday's [report](#) in the *New England Journal of Medicine* does not prove a blood type connection, but it does confirm a previous report from China of such a link.

"Most of us discounted it because it was a very crude study," Dr. Parameswaran Hari, a blood specialist at the Medical College of Wisconsin, said of the report from China. With the new work, "now I believe it," he said. "It could be very important."

Other scientists urged caution.

The evidence of a role for blood type is "tentative ... it isn't enough of a signal to be sure," said Dr. Eric Topol, head of the Scripps Research Translational Institute in San Diego.

The study, involving scientists in Italy, Spain, Denmark, Germany and other countries, compared about 2,000 patients with severe COVID-19 to several thousand other people who were healthy or who had only mild or no symptoms. Researchers tied variations in six genes to the likelihood of severe disease, including some that could have a role in how vulnerable people are to the virus. They also tied blood groups to possible risk.

Most genetic studies like this are much larger, so it would be important to see if other scientists can look at other groups of patients to see if they find the same links, Topol said.

Many researchers have been hunting for clues as to why some people infected with the coronavirus get very ill and others, less so. Being older or male seems to increase risk, and scientists have been looking at genes as another possible "host factor" that influences disease severity.

There are four main blood types—A, B, AB and O—and "it's determined by proteins on the surface of your red blood cells," said Dr. Mary Horowitz, scientific chief at the Center for International Blood and Marrow Transplant Research.

People with Type O are better able to recognize certain proteins as foreign, and that may extend to proteins on virus surfaces, Hari explained.

During the SARS outbreak, which was caused by a genetic cousin of the coronavirus causing the current pandemic, "it was noted that people with O blood type were less likely to get severe disease," he said.

Blood type also has been tied to susceptibility to some other infectious diseases, including cholera, recurrent urinary tract infections from *E. coli*, and a bug called *H. pylori* that can cause ulcers and stomach cancer, said Dr. David Valle, director of the Institute of Genetic Medicine at Johns Hopkins University.

Bottom line: "It's a provocative study. It's in my view well worth publishing and getting out there," but it needs verification in more patients, Valle said.

More information: David Ellinghaus et al. Genomewide Association Study of Severe Covid-19 with Respiratory Failure, *New England Journal of Medicine* (2020). [DOI: 10.1056/NEJMoa2020283](https://doi.org/10.1056/NEJMoa2020283)

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