

Interferon Treatment May Reduce Severity of COVID-19 in People With Certain Genetic Factors

People of European or African ancestry who were hospitalized for COVID-19 are more likely to carry particular genetic variants than those with mild disease.

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Researchers from the National Cancer Institute, part of the National Institutes of Health, and their collaborators have discovered that people of European and African ancestries who were hospitalized for COVID-19 are more likely to carry a particular combination of genetic variants in a gene known as OAS1 than patients with mild disease who were not hospitalized.

People with this combination of genetic variants also remain positive for SARS-CoV-2 infection longer. However, interferon treatment may reduce the severity of COVID-19 in people with these genetic factors. Interferons are a type of protein that can help the body's immune system fight infection and other diseases, such as cancer.

The study appears July 14 in [Nature Genetics](#).

These findings build on previous studies that have suggested that genetic factors, such as genetic variants affecting OAS antiviral proteins that facilitate the detection and breakdown of the SARS-CoV-2 virus, may influence the risk of SARS-CoV-2 infection.

The NCI researchers and their collaborators found that treatment of cells with an interferon decreased the viral load of SARS-CoV-2. The researchers also analyzed data from a clinical trial in which patients with COVID-19 who were not hospitalized were treated with the recombinant interferon pegIFN-λ1 and found that treatment improved viral clearance in all patients; those with the OAS1 risk variants benefitted the most. The results suggest that interferon treatment may improve COVID-19 outcomes and specifically in patients with certain OAS1 genetic variants who have impaired ability to clear infection.

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