Study finds increased risk of Guillain-Barré after COVID-19 infection

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Having a COVID-19 infection is associated with an increased risk of developing the rare disorder called Guillain-Barré syndrome within the next six weeks, according to a study published in the October 18, 2023,

online issue of *Neurology*. The study also found that people who received the mRNA vaccine from Pfizer-BioNTech were less likely to develop the disorder in the next six weeks than people who did not receive the mRNA vaccine.

Guillain-Barré syndrome is a rare autoimmune disorder in which the immune system attacks nerve cells. Symptoms start with weakness in the hands and feet and may progress to paralysis. Although it can be life-threatening, most people recover with few remaining problems.

An exact cause of Guillain-Barré syndrome is unknown but it can occur after gastrointestinal or respiratory infections. Researchers note it occurs in up to 20 out of every one million people per year, and only in extremely rare cases does it follow certain vaccinations.

"These findings further highlight the benefits of ongoing vaccination programs with mRNA-based vaccines," said study author Anat Arbel, MD, of Lady Davis Carmel Medical Center in Haifa, Israel. "The results have important clinical and public health implications."

The study involved over 3 million people in Israel with no previous diagnosis of Guillain-Barré. They were followed from January 1, 2021, until June 30, 2022. During that time, 76 people developed Guillain-Barré. Each person with Guillain-Barré was matched to 10 people who did not have the syndrome, or 760 people.

Then researchers looked to see whether participants had a COVID infection or a COVID vaccine during the six weeks prior to the diagnosis of Guillain-Barré or the same time period for their matched participants.

Researchers determined that people with a recent COVID infection were six times more likely to develop Guillain-Barré than those without a recent infection. A total of 12% of the people with Guillain-Barré had a

recent COVID infection, compared to 2% of the people who did not have Guillain-Barré.

In addition, 11% of those with Guillain-Barré had a recent vaccination with a mRNA vaccine, compared to 18% of those who did not have Guillain-Barré.

They also found that people with a recent mRNA vaccination were more than 50% less likely to develop Guillain-Barré than those without a recent mRNA vaccination.

"While Guillain-Barré is extremely rare, people should be aware that having a COVID infection can increase their risk of developing the disorder and receiving an mRNA vaccine can decrease their risk," Arbel said.

A limitation of the study was that since not all participants had tests for COVID, it is possible that some people may have been classified with no evidence of COVID infection when they had an infection with no or mild symptoms.

The study does not prove that COVID infection increases the risk of Guillain-Barré or that mRNA vaccination decreases the risk. It only shows an association.

More information: Haya Bishara et al, Association Between Guillain-Barré Syndrome and COVID-19 Infection and Vaccination: A Population-Based Nested Case-Control Study, *Neurology* (2023). DOI: 10.1212/WNL.0000000000207900 , doi.org/10.1212/WNL.0000000000207900

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