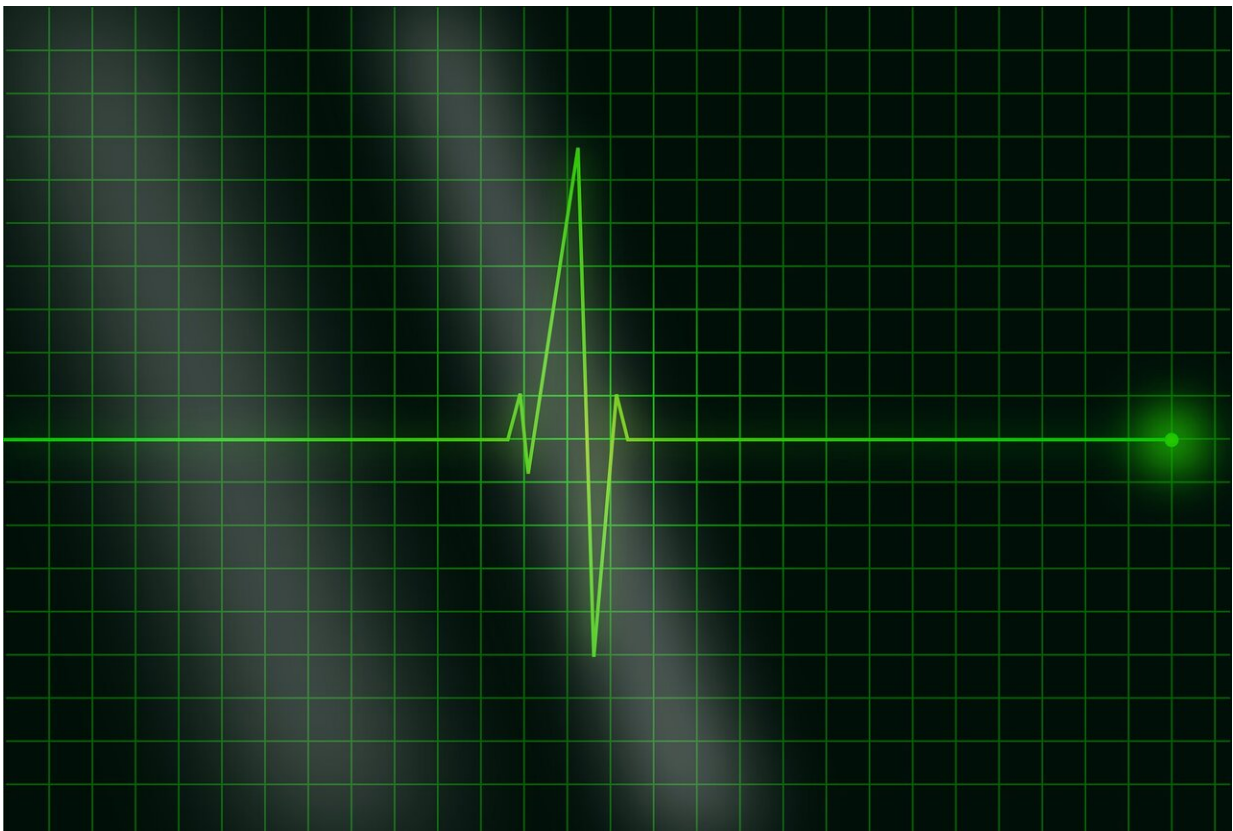


Long COVID ties with heart disease for health outcomes: Vaccines reduce risk, study finds

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Long COVID is on par with heart disease in terms of its severity, but vaccination reduces risks of long COVID by nearly 70%, say researchers

at Washington University.

In a recent study, researchers found that the risk of contracting long COVID has decreased since the start of the pandemic. With each new variant of the virus, the risk has gone down—and if you're vaccinated, the risk has been even smaller over time—but it still isn't zero.

"You may have forgotten about your COVID infection, but it hasn't forgotten about you," said Dr. Ziyad Al-Aly, a clinical epidemiologist at Washington University and senior author on the study.

The U.S. is experiencing an upswing in COVID cases in most states. Updated vaccinations are important for protecting the public from illness, especially chronic disease that can require a lifetime of symptom management, Al-Aly said.

A person's immunity to COVID declines after two or three months after exposure to the virus, whether that comes through a vaccine or an infection, said Dr. Daniel F. Hoft, director of St. Louis University's Center for Vaccine Development. Booster shots are meant to help increase immunity once it starts to wane, he said. The newest booster shot for COVID is set to come out in mid-September.

"Data like this (study) will be important for booster recommendations going forward," Hoft said.

Al-Aly said he saw long COVID in patients who would come to him with COVID symptoms long past the infection's end. He would hear of ongoing brain fog and fatigue, or new symptoms popping up in patients no longer testing positive for the virus.

He knew that long COVID needed to be addressed by biomedical researchers to help his patients—so he became that researcher in 2020.

His lab has published more than 30 high-profile studies since then, focused on the long-term health impacts of COVID infection.

"At that time, it was about seeing patients suffering," he said. "Starting this research was a sort of visceral reaction. We wanted to know what they were going through."

This study, published in the *New England Journal of Medicine*, took his team about a year. Much of that time was consumed wrangling the data, which came from over 5 million patients whose [medical information](#) is retained by the U.S. Department of Veterans Affairs.

More than 441,500 of these patients experienced COVID infection between 2020 and 2022. The patients were broken up into five cohorts in this study, by [vaccination status](#) and time frame.

The rest of the 4.7 million patients' data acted as controls, since these individuals never tested positive for COVID between 2020 to 2022.

Comparing data from patients across COVID variant "eras" (starting with pre-delta, then delta and omicron) revealed clear decreases in the risk of long COVID over time. Ten percent of patients, all unvaccinated, in the pre-delta—or earliest—era experienced long COVID.

In the later omicron era, only 7.76% of unvaccinated and 3.5% of vaccinated people experienced long COVID.

The decreased risk has been attributed to both molecular changes to the virus and to vaccination status—with vaccination status playing a much larger role, accounting for about 70% of the reduction between eras, researchers found.

"The vaccine does two things," Al-Aly said. "It reduces the risks of

severe COVID-19, which we know leads to long COVID. And it reduces the viral load, so there is less virus in a vaccinated individual that gets infected than an unvaccinated individual."

The study also looked at the disease burden, or the seriousness of the illness, of long COVID throughout the three eras. Al-Aly gave the example that, while both migraines and cancer are serious health concerns, cancer has a higher disease burden because it is more likely to result in later complications or death.

The measure used to quantify disease burden is a "DALY," or "disability-adjusted life year," which tracks the number of healthy years of life a person could lose to a disease. This allows physicians to create a ranked list, based on severity, of thousands of diseases. In that ranking, long COVID and [heart disease](#) are tied.

"The burden of long COVID is actually on par with the DALY burden of heart disease," Al-Aly said.

Al-Aly said that we likely won't need to employ any of the "Draconian measures" used at the start of the pandemic to control long COVID. Vaccination is the best way for individuals to protect themselves, he said.

"The key message here is that vaccines work for the reduction of long COVID," he said. "But the remaining risk is still significant, even with the [vaccine](#), so we shouldn't trivialize it."

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