

# Scientists identify cause and possible treatment of COVID-19 vaccine-related heart damage



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A common response between two types of immune cells during a COVID-19 infection and after initial vaccinations can cause heart inflammation. Now scientists have identified the cause of the heart damage, and a simple, plant-based treatment that holds promise to reduce the harm.

Stanford researchers identified two molecules produced by activated immune cells that stoke inflammation in heart tissue in some mice, as well as human heart tissue in lab experiments. While rare, a similar interaction after the first and second doses of the COVID vaccine can cause a milder inflammation response, particularly in young men, the researchers found, though the damage caused by a COVID-19 infection can be up to ten times worse.

Vaccine-associated myocarditis happens in one of every 140,000 people after receiving the first COVID-19 vaccine shot and one in 32,000 after the second dose, said Joseph Wu, director of the Stanford Cardiovascular Institute and co-author on the study. Fortunately, most of these cases end well, Wu said in a [Stanford release](#), with full heart function preserved or restored, and recovery is typically swift.

“It’s not a heart attack in the traditional sense,” he said in the release. “There’s no blockage of blood vessels as found in most common heart attacks. When symptoms are mild and the inflammation hasn’t caused structural damage to the heart, we just observe these patients to make sure they recover.”

The new research, published in [Science Translational Medicine](#) in December, shows that a soy-derived nutrient called genistein effectively blocks the harmful effects of the chemicals in the heart.

Should you get the COVID vaccine or booster?

“All vaccines essentially mirror the actual virus. Some people are more ready to have the inflammation response,” said Dr. Jean Jeudy of the University of Maryland School of Medicine. “The mirroring is like being in a sauna compared to being in a burning building when you have the actual COVID-19 infection.”

Those who have had the initial vaccines and annual boosters have nothing to fear, Jeudy told The Baltimore Sun, because their body has adapted to the immune response.

The Stanford research can help scientists develop safer vaccinations over time, he said.

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