

- COVID-19 / Heart**HOW COVID AFFECTS THE HEART****The US had 90,000 excess cardio deaths despite vaccine rollout**

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During the first two years of the pandemic, from March 2020 to March 2022, there were approximately 90,000 more deaths in the United States attributed to cardiovascular disease than were expected for that span of time.

A majority of these occurred in people 65 and older — the age group with the highest risk for cardiovascular complications. But heart-related deaths also increased dramatically in younger adults. In fact, a study found that the sharpest rise in deaths from heart attack during that period occurred in the 25 to 44 age brackets.

Some of these cardiovascular-related fatalities may have happened because it was harder to access medical care during the height of the pandemic. But physicians and researchers now have little doubt that Covid-19 itself was a factor. In addition to the complications that can occur during the acute phase of a Covid infection, there appears to be an increased risk of heart attacks, strokes and other problems up to a year after an infection. Experts are now trying to understand why.

“There’s a very unique connection between this virus and the cardiovascular system,” said Dr Susan Cheng, the chair of cardiovascular health and population science at Cedars-Sinai, who led the study on heart attack deaths. “What is that connection? That’s the million-dollar question.”

HOW COVID CAN IMMEDIATELY AFFECT THE HEART

Cardiologists’ leading theory for how Covid damages the heart and causes cardiovascular events is that it stimulates widespread inflammation.

“We know that inflammation itself increases our cardiovascular risk,” said Dr Luke Laffin, a cardiologist and co-director of the Center for Blood Pressure Disorders at the Cleveland Clinic. “We know that infectious diseases, particularly severe Covid-19 infections, lead to inflammation. So could that be the mechanism by which there’s increased risk? Maybe.”

Part of the immune system’s response to infection or injury is to release proteins that cause inflammation and blood clotting. For people who have plaque built up in their arteries, the inflammation can cause that plaque to break apart, creating a blood clot and causing a heart attack or stroke. Because of this, experts say that people who already have plaque in their arteries — like many smokers and those with high blood pressure and cholesterol — also have the greatest risk of a Covid-induced heart attack.

In some cases, those proteins can cause a clot to form even without preexisting plaque. If enough inflammation occurs in the blood vessels, irritating the cells there, a clot can form spontaneously, Cheng said. That’s how a young person with no plaque can “still have a heart attack in the right conditions”, she added.

HOW COVID CAN AFFECT THE HEART IN THE LONG TERM

The potential for cardiovascular complications doesn’t go away after someone has recovered from Covid. A large 2022 study tracking medical records of 691,455 patients in the United States found that people had a significantly higher risk of developing virtually all heart-related diseases in the year after a Covid infection. According to the research, people were 1.5 times more likely to have a stroke, nearly twice as likely to have a heart attack, and had between 1.6 and 2.4 times the risk of developing different types of arrhythmias.

“Early on, we saw the impact on the cardiovascular system during Covid illness,” said Dr Helene Glassberg, a cardiologist and associate professor of clinical medicine at the University of Pennsylvania Perelman School of Medicine, who was not part of the study. “But now we’re seeing the long-term consequences in people who’ve had prior Covid.”

Some of these conditions may be caused by the lingering effects of the infection. Others might develop because Covid is also associated with the onset of risk factors for heart disease, most notably high blood pressure. One recent study found that nearly 21% of people who were hospitalised for a Covid infection, and close to 11% of people who had a milder infection and were not hospitalised, went on to develop high blood pressure in the following months.

Experts don't exactly know how Covid leads to high blood pressure. There may be something biological going on, but the general stress of the pandemic has probably also played a role, Laffin said.

HOW VACCINES REDUCE THE RISK

Research has shown that people who are vaccinated are roughly 40% to 60% less likely to have a heart attack or stroke following a Covid infection than those who are unvaccinated. This might be because vaccinated people are less likely to develop severe Covid, which in turn lowers the risk of many of these heart-related issues. Or the vaccine might help protect the cardiovascular system itself — by reducing the inflammatory effects of Covid, for example.

There is a small risk of developing myocarditis (inflammation of the heart muscle) in the weeks after getting an mRNA Covid vaccine made by Pfizer-BioNTech or Moderna. However, the risk of myocarditis after having Covid is much higher. A study by the US Centers for Disease Control and

Prevention reported that males ages 12 to 29 — who have the greatest risk of vaccine complications — were four to eight times more likely to develop myocarditis following a Covid infection than in the three weeks after receiving a dose of vaccine. For males 30 and older, the risk of myocarditis was 28 times higher from Covid than from the vaccine.

“While it's important to understand that this vaccine-related event is real,” Glassberg said, “the risk to your heart is much greater from Covid than from vaccine.”

HOW TO MANAGE YOUR RISK

If you had Covid recently and are experiencing any cardiovascular symptoms, like chest pain or shortness of breath, or if you're at an increased risk for heart disease, you should tell your doctor.

“I ask all my patients when I see them, ‘Have you had Covid since our last visit?’,” Glassberg said. “My antennas are up on those folks. I'm looking at their blood pressure a little more. I'm making sure I'm aggressively controlling their cholesterol.”

If you don't have any risk factors and aren't experiencing any symptoms, you can just tell your doctor that you had Covid at your next annual checkup. In the meantime, be sure to practise hearthealthy behaviours, like exercising regularly and eating well.