

Cardiovascular risks and COVID-19: New research confirms the benefits of vaccination

March 26 2024, by Glen Pyle



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COVID-19 is a respiratory disease. Yet, from the earliest days of the pandemic, the [cardiovascular risks associated with SARS-CoV-2 infection](#) were clear: individuals with severe cases of COVID-19 often died from cardiovascular complications, and those with pre-existing cardiovascular disease were more likely to have severe illness or die.

In short, the cardiovascular system has played a central role in COVID-19 since the beginning.

It is not surprising that as debate over COVID-19 and vaccines flared that [cardiovascular disease was a central issue](#). Those opposed to vaccination often make claims of cardiovascular risks that exceed any benefits. But when data on COVID-19, vaccines and cardiovascular health are reviewed, the conclusions are clear: vaccines are safe and effective at reducing the [cardiovascular complications](#) that are a hallmark of COVID-19.

Hot off the presses

A new [study of 20.5 million people](#) in the United Kingdom, Spain and Estonia used [electronic health records](#) to determine how COVID-19 vaccines affect cardiovascular complications following SARS-CoV-2 infection. Roughly the same number of vaccinated and unvaccinated subjects were included, and the vaccinated group consisted of people who received at least one of the AstraZeneca, Pfizer, Moderna or Janssen vaccines.

The study found that common cardiovascular complications of COVID-19—including [blood clots](#), stroke, arrhythmias and heart attacks—were substantially reduced in the vaccinated group, with protective effects lasting up to a year after vaccination.

Bigger picture

While this most recent study represents one of the most comprehensive investigations into the cardiovascular benefits of COVID-19 vaccination, its findings are consistent with earlier, smaller studies.

A [2022 study of 231,037 people](#) found two doses of COVID-19 vaccines reduced the risk of stroke and [heart attack](#) up to four months after a breakthrough infection.

A subsequent [study of 1.9 million people](#) found that while two doses of the mRNA vaccines or one dose of the Johnson & Johnson [vaccine](#) protected against major cardiovascular events following COVID-19, even a single dose of the mRNA vaccines offered some benefit in reducing the risk of cardiovascular complications.

Health-care decisions require a weighing of the risk and benefits of treatments, and for COVID-19 vaccines the low cardiovascular risks favor vaccination. A [study of more than 4 million vaccinated Australians](#) found no increase in sudden cardiac death. Even [patients with pre-existing heart failure](#) do not have an increased risk of worsening [heart failure](#), myocarditis, or blood clots following vaccination.

Weighing the risks

Although the safety of COVID-19 vaccines is well-established, it does not mean there are no risks. A [review of 99 million individuals in the Global Vaccine Data Network](#) confirmed earlier studies that found an increased risk of myocarditis and pericarditis, which is seen primarily in [young males](#)—historically the group most at risk for myocarditis before COVID-19 emerged.

While individuals at higher risk for these complications should consult with their health-care providers in making decisions about vaccination, it should be noted that the risk for myocarditis and pericarditis is generally higher with COVID-19, even in this cohort.

Studies have also found that extending the time between first and second doses of the COVID-19 mRNA vaccines beyond the initially recommended three-week interval [decreases the risk of myocarditis](#). Furthermore, [post-vaccine myocarditis](#) tends to be transient with very good recovery and is less severe than that associated with COVID-19.

The risk of myocarditis in young people has led some to claim that the benefits of COVID-19 vaccines are negated when stacked up against the chance of heart inflammation. A [statement from the American Heart Association](#) confirms that the risks of cardiovascular complications in young people with more mild cases of COVID-19 (symptoms lasting less than four days) are low, but notes that there are concerning signs for those who experience more severe illness with infection.

Furthermore, other cardiovascular risks associated with infection must be considered in weighing risks and benefits. These include [multisystem inflammatory syndrome](#) or "MIS-C" and cardiac arrhythmias—a far more common risk of COVID-19 than myocarditis.

Finally, [the claim that COVID-19 is harmless in children](#) is not true: [in Canada](#) COVID-19 is the sixth leading cause of death for children aged one to 14 years, and tenth for people 15 to 19 years old. Overall, studies find that [even in young people the benefits of vaccination exceed the risks](#), particularly when it comes to cardiovascular disease.

Take to heart

There are individuals whose health conditions [preclude COVID-19](#)

[vaccination](#), and others for whom health risks may outweigh the benefits. But, for the vast majority of people—including young and otherwise healthy people—COVID-19 vaccination is not only safe, but the cardiovascular protection it offers could be life-saving.

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