

## **Key Findings on Cardiovascular Risks Post-COVID-19 Vaccination**

A recent study utilized data from a Swedish nationwide register-based cohort to explore the risks of cardiovascular and cerebrovascular events following vaccination against the [coronavirus disease 2019](#) (COVID-19).



### **Study**

The researchers of the current study hypothesized that the mechanism that is involved in the increased myocarditis and pericarditis risks in young individuals could also contribute to the development of other adverse [cardiovascular events](#) in other age groups and with different time lags. To this end, a range of risk windows and doses were considered to assess the risks of several cardiovascular and cerebrovascular events.

Patient data were obtained between December 29, 2020, to December 31, 2022. Post-vaccination risk of [dysrhythmias](#), myocarditis/pericarditis, heart failure (HF), cerebrovascular events including stroke and transient ischemic attack, as well as MI were assessed across risk windows after each vaccine dose.

Hazard ratios (HRs) with 95% confidence intervals were calculated and compared with unvaccinated individuals. [Cox regression models](#) adjusted for potential confounding factors were used to calculate HRs.

### **Results**

Among the study cohort, which comprised 8,070,674 adults, 88.5% received at least one dose of a mRNA COVID-19 vaccine, 86.9% received at least two doses, and 67.9% received three or more doses. Individuals who received more doses were slightly older. The two most common medical conditions were [hypertension](#) and those that were managed with antidepressant prescriptions.

An increased early risk of myocarditis and pericarditis was observed after the first two doses of [vaccination](#), with the effect size greater for myocarditis. The dose and time window patterns were similar across the two conditions.

In the main analysis, these two conditions were combined as myopericarditis, with its increased risk initially observed in the first week after dose one and persisted into the second week. After the second dose, the risk was higher in the first week; however, no effect was observed after the third dose. Among males between 18 and 40 years of age, the risk estimate was higher, whereas the risk was more evident following receipt of the Moderna [mRNA-1273 vaccine](#) as compared to the Pfizer BNT162b2 vaccine.

A higher risk of [extrasystoles](#) was observed between receipt of the first and second doses. There was no distinct time window of this effect, which was stronger for the elderly and males.

For arrhythmias, the risks were attenuated across all risk windows, particularly after the third dose. Both sexes were associated with similar risk patterns and no difference was observed between the Moderna and [Pfizer vaccines](#).

A reduced risk of HF and MI was observed after vaccination, particularly after the [third dose](#) and among the eldest groups. Both sexes exhibited similar risk patterns with no difference was observed across the vaccines.

After the second vaccine dose, an increased risk of [transient ischemic attack](#) (TIA) was observed, particularly during later risk windows. In individuals 40 years of age and younger, TIA rarely occurred following vaccination. These effects were similar across sex, vaccines, and increased with age.

For both ischemic and hemorrhagic stroke, particularly after the third dose, the risks were often reduced and similar across [sexes](#), ages, and vaccine types. For the composite of TIA or stroke, a reduced risk was observed after the third dose.

### **Conclusion**

The current study reports reduced risks of several serious cardiovascular outcomes following COVID-19 vaccination in a cohort of Swedish individuals, which could be attributed to protection conferred by the vaccine against [severe disease](#). Nevertheless, an increased risk of extrasystoles, TIA, myocarditis, and pericarditis was observed after COVID-19 mRNA vaccination.

Taken together, these findings highlight the protective benefits of complete [COVID-19 vaccination](#), particularly for the elderly.

### **Source:**

<https://www.news-medical.net/news/20241003/Cardiovascular-risks-post-COVID-19-vaccination-Key-findings.aspx>