

Some flu vaccine reactions might be a good sign for people with heart disease

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People with heart disease who forego annual flu vaccination for fear of having an adverse reaction may wish to reconsider. New research finds individuals with high-risk heart disease who experience mild to moderate side effects are less likely to be hospitalized for heart or lung problems or die from any cause.

The findings suggest mild vaccine-related side effects, such as injection site pain, may signal a strong immune response and better overall health.

The work was presented Sunday at the American Heart Association's Scientific Sessions conference and published simultaneously in the *European Journal of Heart Failure*.

It adds to a large body of evidence supporting annual flu vaccination for people with [heart disease](#).

"Influenza vaccine is associated with a [reduced risk](#) for cardiac morbidity and mortality, but despite this advantage, there is still a high proportion of people with [heart problems](#) who are not vaccinated," said lead investigator Dr. Alexander Peikert. He is a postdoctoral research fellow in medicine at Brigham and Women's Hospital in Boston. "Concerns about side effects related to the vaccine may be one reason for this hesitancy."

The study showed "having a mild adverse reaction is a good thing," Peikert said. "If you experience such a reaction, you shouldn't be worried about it. It should not deter you from vaccination."

Previous research shows half of U.S. adults hospitalized for the flu have heart disease, and the risk of having a first heart attack is six times greater following a flu infection. Studies show that risk can be substantially lowered by receiving the [flu vaccine](#), but less than half of U.S. adults do so.

"We know it's beneficial, but they aren't taking it," said Dr. Siva Harsha Yedlapati, an internist with Erie County Medical Center in Buffalo, New York. He said several studies have shown that fear of experiencing [side effects](#) was a major reason people forgo the shots.

Yedlapati, who was not involved in the new research, led a recent study published in the *Journal of the American Heart Association* that found flu vaccines greatly reduce the risk of dying or developing serious heart-related complications for people with heart disease.

In this latest study, Peikert and his team analyzed data for 5,210 participants for whom adverse reaction data were available in the INVESTED (INfluenza Vaccine to Effectively Stop Cardio Thoracic Events and Decompensated Heart Failure) trial. That trial included patients at 157 medical centers in the U.S. and Canada who had recently been hospitalized for heart failure or a heart attack. Participants, who were an average 65 years old, received a standard or high-dose flu vaccine.

In all, researchers analyzed data for a total of 7,154 vaccinations given over three flu seasons. Participants were followed until the end of each flu season (up to 10 months) to see whether complications developed. Deaths were recorded for up to three years following vaccination.

Mild, moderate and severe reactions to the flu vaccine were recorded. Overall, 37.8% of people experienced some type of side effect, with most of those reactions (76.4%) being mild. Injection site pain was the most common side effect, accounting for 60.3% of [adverse reactions](#), followed by muscle aches and pains (34.5%) and overall discomfort (22%). Just 2.9% of adverse reactions were considered severe, representing 1.1% of vaccines administered.

People who experienced adverse reactions were more likely to be

women and to have been hospitalized for heart attacks. They also were more likely to be younger, current smokers and overweight compared with those who had no reaction to the vaccine.

Only reactions that involved the injection site were associated with reduced cardiopulmonary or death risks. Overall, those who experienced mild to moderate injection site reactions had a 19% lower risk of dying for any reason or of being hospitalized for heart or lung problems.

While a very small percentage of people in the study had a severe reaction to the vaccine, those who did were 68% more likely to die or be hospitalized, a finding that suggests this group may be predisposed to having a malfunctioning immune system, Peikert said.

Those who took the higher-dose vaccine were more likely to have a reaction to the shot, but there was no difference in hospitalizations or death rates for people who took the low-dose vaccine compared to those who took the higher dose, he said.

Peikert said the results applied only to people at high risk for cardiovascular problems and might not be transferable to the general public.

The AHA and the Centers for Disease Control and Prevention recommend annual flu vaccination for all people 6 months and older, including those with heart disease, with rare exceptions. However, the CDC does not recommend the live flu vaccine (also known as the nasal spray) for people with heart disease.

More information: Alexander Peikert et al, Association of post-vaccination adverse reactions after influenza vaccine with mortality and cardiopulmonary outcomes in patients with high-risk cardiovascular disease: the INVESTED trial, *European Journal of Heart Failure* (2022).

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