

Editorial**Flu Vaccine and Heart – A Research**

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Editor

New research hints that the vaccine, which is recommended for all adults, may also help the heart. Two new studies presented at the 2012 Canadian Cardiovascular Congress suggest that heart patients who get flu vaccine has lower risks of heart attacks and strokes and fewer episodes of irregular heart rhythms. Some cautions apply. Both studies were small and preliminary. Researchers agree that they should be repeated with more people and published in peer-reviewed journals before flu vaccine can be claimed to cut heart risks.

“The current body of evidence makes it difficult for us to know for sure whether influenza vaccination reduces cardiovascular events,” says Jennie Johnstone, MD, an assistant professor in the division of infectious diseases at McMaster University in Toronto, Canada. She was not involved in the research. Johnstone says the new studies are intriguing but should be followed up.

For the first study, researchers pooled data from four published clinical trials with 3,200 patients that tested flu vaccine against placebo shots. About half the patients in the studies had heart disease. The other half had no history of heart problems. Patients in the studies were randomly assigned to get flu vaccine or placebos. Over one year, there were 187 major cardiovascular events. Those events included heart-related deaths and non-fatal heart attacks, strokes, emergency heart procedures, hospitalizations for heart failure, or sudden chest pain.

Overall, about 7.8% of the people who didn't get flu vaccine had a major heart-related event over the course of the next year compared to 4.3% of those who did get flu vaccine, a reduction in risk of almost 50%. Stated another way, researchers estimate that one major heart-related event is prevented for every 34 people who get vaccinated for flu. “These are very provocative findings. If I could give you a pill that would cut your risk of heart problems in those with either established heart disease or at risk for heart disease in half, I'm pretty sure everybody

would be taking that medication,” says researcher Jacob A. Udell, MD, MPH, a clinical investigator at Women's College Hospital in Toronto, Canada.

The CDC advises all adults, including adults with underlying conditions like diabetes and heart disease, to get an annual flu vaccine. Still, most don't. According to the CDC, only about 40% of adults were vaccinated against the flu during the last flu season. For the second study, researchers surveyed 230 patients at the same hospital who all had implanted cardiac defibrillators (ICDs), devices that shock the heart when it goes into dangerous, irregular rhythms. Patients with ICDs tend to get more jolts from those devices during the winter months, and doctors wondered whether that might have something to do with the flu.

About 80% of the ICD patients said they'd gotten a flu vaccine that season, and about 20% did not. Researchers say the patients who got flu vaccine had fewer ICD shocks to the heart than patients who didn't get flu vaccine. They couldn't rule out that the differences between the two groups might have been due to chance alone, however.

“Our finding is thought-provoking,” says researcher Sheldon Singh, MD, assistant professor of medicine at the University of Toronto, in Canada. “If this finding is reproducible, if this is a real finding, flu shots may have real benefits for our patients.”

Udell says there are two theories: that the vaccine may protect vulnerable patients or that they protect unstable buildups in artery walls from breaking open and cutting off blood flow to the heart or brain. “The vulnerable patient theory goes, if you have heart disease or diabetes or some other major risk factor and then you get the flu, you get congested and can't breathe as well and it lowers the oxygen that's going to vital organ tissues like the brain and heart, and that can lead to heart attacks and strokes,” Udell says.

The vulnerable buildup theory suggests that inflammation caused by a viral infection triggers the rupture of artery-clogging plaques.