

Flu shot may not work as well for seniors

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But, experts still advise older adults to get vaccinated.

(HealthDay)—Seniors seem to get a weaker boost to their immune system following a flu shot than young people do, a small study shows.

Experts say the findings essentially confirm what's been believed: The flu shot just doesn't work as well for older immune systems. But they also caution that the vaccine remains the best defense against flu misery.

Older people are among those at greatest risk for [flu complications](#), like pneumonia. Americans older than 65 have been hard-hit during the current, rough flu season: Late last month, the U.S. [Centers for Disease Control and Prevention](#) said that 98 of every 100,000 seniors were hospitalized with the flu for the week ending Jan. 19.

So older adults should keep getting vaccinated every year, according to

Nicholas Kelley, a research associate with the Center for Infectious Disease Research and Policy at the University of Minnesota, in Minneapolis.

"Getting the flu shot is safe, and it's better than doing nothing," said Kelley, who was not involved in the new study. "It's still the best weapon we've got."

For the study, which appeared Feb. 6 in the journal *Science Translational Medicine*, researchers analyzed [blood samples](#) from 17 volunteers who'd gotten the flu shot. Four of them were aged 70 or older, while the rest were 8 to 30 years old.

They used gene-sequencing technology to get a "head count" of [immune system cells](#) called [B cells](#) during the volunteers' peak immune response to the vaccine, explained lead researcher Ning Jenny Jiang, currently an assistant professor at the University of Texas at Austin. The study took place while she was based at Stanford University.

B cells are important because they produce the antibodies that the [immune system](#) launches against invaders, like the [flu virus](#). When B cells are exposed to the dead or weakened virus in a vaccine, they "tweak" their antibody weapons to be more effective against the real virus.

But Jiang's team found that after the flu shot, elderly people had lower numbers of distinct B cell types, compared to young people. That essentially means they had a less diverse array of weapons against the flu.

"We also noticed that B cells from elderly people had a higher level of mutation, or tweaks, to their antibody-coding genes compared to other age groups," Jiang said. That suggests their B cells are already very

"specialized"—and possibly more resistant to further "tweaks" from the flu vaccine.

"This basically confirms what we've believed to be true," Kelley said. "But this is the first time [the research] has gotten to this technical of a level."

Another expert said the study provides helpful new information for researchers.

"We've known for years that older adults don't respond as well to the flu vaccine," said Dr. Andrew Pavia, chief of pediatric infectious diseases at the University of Utah in Salt Lake City. "This gives us some insights into why."

And a better understanding of older people's [immune response](#) could help in developing better flu vaccines, according to Pavia, who also chairs the Pandemic Influenza Task Force of the Infectious Diseases Society of America.

Both Pavia and Kelley said that ultimately, what's needed is a flu shot that's more effective for seniors—and for children younger than 2, Pavia noted.

There is already a high-dose flu vaccine on the market, specifically designed for people age 65 and up. Researchers know it can spur older immune systems to produce more antibodies.

"But," Pavia said, "we don't know yet if that means better protection against the flu after people are vaccinated."

For now, study author Jiang said that [older adults](#) can take some extra steps to protect themselves. One is to get your [flu shot](#) early, since it

takes about two weeks for the body to build up immunity. In the United States, [flu season](#) can begin as early as October.

Older people may also want to avoid being around others who are sick, and be vigilant for potential flu symptoms, Jiang said. Those include fever, chills, sore throat, headache and body aches.

Jiang advised calling your doctor right away if you have those symptoms: There are prescription anti-flu drugs, but they work best if you start them within two days of developing symptoms.

More information: Learn more about the flu from the [U.S. Centers for Disease Control and Prevention](#).

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