

# SLU findings: Don't pitch stockpiled avian flu vaccine

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A stockpiled vaccine designed to fight a strain of avian flu that circulated in 2004 can be combined with a vaccine that matches the current strain of bird flu to protect against a potential pandemic, researchers from Saint Louis University's Center for Vaccine Development have found.

The findings suggest public health officials can get a jump on fighting a pandemic caused by avian [flu virus](#) because they won't have to wait for a [vaccine](#) that exactly matches the current strain of bird flu to be manufactured. They can begin immunizing against the bird flu by giving an injection of a vaccine made from a related, yet mismatched strain of flu to prime the body for a second shot of a vaccine that matches the current strain.

"A cornerstone of pandemic planning is the development of effective vaccines against avian influenza infection," said Robert Belshe, M.D., director of the Center for Vaccine Development at Saint Louis University and the lead author of the paper.

"The results of the present study confirm the usefulness of vaccination with an H5 strain that isn't the current dominant strain."

Avian flu -- or H5N1 -- is a highly infectious and deadly virus that circulates in birds and has the potential to genetically mutate and jump between species to infect humans. Because people lack immunity to the virus, public health officials are concerned that the virus can spread

quickly to become a pandemic [outbreak](#).

In anticipation of a bird flu pandemic, in 2004 the U.S. government stockpiled 20 million doses of vaccine against the "Vietnam" strain of avian influenza, which then was the dominant strain of the virus. But the avian flu changes quickly and since then, a different strain of [bird flu](#), known as the "Indonesia" strain, has replaced the Vietnam strain as the prominent circulating avian flu.

Researchers studied both the vaccine against the Vietnam strain and an investigational vaccine designed to protect against the Indonesia strain in 491 healthy adults. They measured the body's immune response to different combinations of the two avian flu vaccines. They also looked at how long to wait between giving the first and second doses of vaccine.

They found that two doses of vaccine are needed to provide protection against the avian flu. Giving the stockpiled Vietnam avian flu vaccine as the first dose primed the body's system so that a follow up dose of the investigational Indonesia avian flu vaccine triggered a heightened immune response. The immune response to both strains of avian influenza became more robust as the injections of vaccine were spaced further apart.

"The longer 180-day interval between priming and boosting vaccine doses gave the best antibody responses, although in a fast-moving pandemic, this is unlikely to be an option," Belshe said.

"The most surprising thing we discovered was the value of time. It's incredible how much stronger response you get at six months. There's something going on there that we know nothing about and is a very interesting area for future research."

Other areas of future of research include studying the vaccines in

children and adults and examining the use of adjuvants, substances that stimulate the immune response to produce more antibodies so less vaccine is needed, Belshe added.

Public health officials might consider immunizing those who are at risk of serious side effects from [influenza](#) with the stockpiled avian flu vaccine, he said.

The [vaccine](#) could prime the body's immune system to mount a defense if the person is exposed to the [avian flu](#) virus and could be a powerful weapon in the fight against a pandemic, Belshe said.

**More information:** The research appears in the March issue of the *Journal of Infectious Diseases*.

Provided by Saint Louis University

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