

# As influenza season begins, researchers work to improve vaccine for seniors

September 28 2011, By Carolyn Pennington

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Dr. Janet McElhaney Credit: Janine Gelineau/UConn Health Center Photo

As the influenza season gets underway, Health Center researchers study ways of making the flu vaccine more effective for older adults.

“Influenza is the most vaccine preventable disease in older people, however, current influenza vaccines can be improved,” says Dr. Janet McElhaney, UConn Center on Aging, who has been studying the [flu](#) vaccine for more than eight years.

Nationwide, flu continues to take a heavy toll each year — hospitalizing 200,000 people, killing an average of 36,000, and causing fever, fatigue, headaches, and other symptoms for up to 20 percent of the population, according to the Centers for Disease Control and Prevention.

But research has found that no matter how many people are vaccinated and what recipe drug makers use to formulate the [flu vaccine](#) each year, it generally works in only 30 to 40 percent of those over 65 — compared with 80 to 90 percent of younger adults.

A vaccine's effectiveness is determined by examining blood levels of the antibodies we produce after receiving it. McElhaney says older bodies have more trouble producing the antibodies than younger ones, even with help from the flu vaccine.

When the flu virus enters the body, the immune system launches a two-pronged attack, generating antibodies that neutralize virus particles and producing T cells that recognize viral signatures on the surface of infected cells and attack them. Vaccines stimulate the production of antibodies and T cells.

“But among older adults, T cells become less able to recognize the virus on the surface of the infected cells and less capable of mounting a response,” says McElhaney. “Effective vaccines for the elderly will require not only stronger doses that produce more antibodies but entire reformulations that stimulate T cell production.”

A stronger, more effective vaccine is crucial, since [older adults](#) are most likely to develop pneumonia and other life-threatening complications if they catch the flu. About 90 percent of the people killed by the flu each year are elderly.

McElhaney adds that when even a relatively vibrant older person is hospitalized with flu symptoms, it can have profound effects. For example, seniors will lose up to five percent of muscle strength for every day in a hospital bed. If hospitalized for 10 days, they will lose half of their overall muscle strength and it will likely take weeks for them to return to their previous strength and vitality.

It is important to remember that a person's immune protection from vaccination declines over time, so annual vaccination is needed for optimal protection. "Even if you get the flu despite being vaccinated, your immune system is primed to kill those viruses," explains McElhaney. "So you don't get so sick and you have a better chance of recovery."

McElhaney recommends that seniors get their flu vaccination in late October or early November so their immune response is robust during the peak period of flu season.

Provided by University of Connecticut

Citation: As influenza season begins, researchers work to improve vaccine for seniors (2011, September 28) retrieved 3 May 2024 from <https://medicalxpress.com/news/2011-09-influenza-season-vaccine-seniors.html>

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