



RECENT FINDINGS ON *Flu and Other Vaccines*

Each year, millions of people nationwide catch the flu. The best way to protect yourself is to get a flu vaccine every year. But only about 6 out of 10 children and 4 out of 10 adults got the 2015–2016 flu vaccine.

To help increase these numbers, scientists are trying to develop easier ways to give the flu vaccine. A new study shows that a special skin patch may work as well as a shot with a hypodermic needle. The patch is about the size of a dime and has 100 tiny needles that contain flu vaccine. The needles are just long enough to pierce skin. Once inside skin, they dissolve within minutes.

NIH-funded researchers compared giving the vaccine using the skin patch to the usual flu shot. About 100 people took part in the study. More than 7 out of 10 people who had the patch said they preferred it to the flu shot.

The researchers analyzed blood samples to see how well the vaccine activated the body's protective responses

against the flu. The patch seemed to work as well as the shot.

The people who got the skin patch didn't report any serious side effects. Some described a slight redness or itchiness where the patch had been.

"This bandage-strip sized patch of painless and dissolvable needles can transform how we get vaccinated," says Dr. Roderic I. Pettigrew, director of NIH's National Institute of Biomedical Imaging and Bioengineering. More studies will be needed to test the safety and effectiveness of the skin patch.

VACCINES: PROTECTING AGAINST MORE THAN THE FLU

Vaccines have led to large reductions in illness and death—for both kids and adults—compared with the "pre-vaccine era," says Dr. David M. Koelle, a vaccine expert at the

University of Washington in Seattle. Vaccines will prevent about 322 million illnesses, 21 million hospitalizations, and 732,000 deaths among U.S. children born over the last 20 years, according to a recent report.

Vaccines harness your immune system's natural ability to detect and destroy disease-causing germs and then "remember" the best way to fight these germs in the future. Vaccination, or immunization, has completely eliminated naturally occurring smallpox worldwide—to the point that we no longer need to get shots against this fast-spreading, once-deadly disease. Polio too has been eliminated in the U.S. and most other nations as well, thanks to immunizations. Poliovirus can affect the brain and spinal cord, leaving people unable to move their arms or legs, or sometimes unable to breathe.

Experts recommend that healthy children and teens get shots against 16 diseases. With this growing list, many disabling or life-threatening illnesses have significantly declined in the U.S., including measles, rubella, and whooping cough. But, unlike smallpox, these disease-causing germs, or pathogens, still exist around the world.

When enough people are vaccinated, the entire community gains protection from the disease. This is called community immunity. It helps to stop the spread of disease and protects the most vulnerable: newborns, the elderly, and people fighting serious illnesses like cancer. During these times, your immune system is often too weak to fend off disease and may not be strong enough for vaccinations. Avoiding exposure becomes key to safeguarding your health.



RECOMMENDED VACCINES

Talk to your doctor about staying up-to-date on shots for these 16 vaccine-preventable diseases. Learn more at www.cdc.gov/vaccines/schedules/easy-to-read/index.html.

- » Bacterial meningitis
- » Chickenpox
- » Diphtheria
- » Haemophilus influenzae type b
- » Hepatitis A and Hepatitis B
- » Cervical & other cancers caused by human papillomavirus (HPV)
- » Influenza (flu)
- » Measles, Mumps, and Rubella
- » Pertussis (whooping cough)
- » Pneumococcal pneumonia
- » Rotavirus diarrhea
- » Shingles
- » Tetanus