

## News

# Painless skin patch to replace flu jab

By Sarah Knapton SCIENCE EDITOR

THE end of painful vaccination jabs is on the horizon after US scientists proved that a skin patch is just as effective at inoculating patients.

The painless plaster, which can be applied at home in just a few minutes, contains microscopic needles, and could significantly improve the take-up for annual vaccinations such as the flu jab, researchers believe.

The NHS recommends that vulnerable adults and children, the elderly, and pregnant women are vaccinated each year, but fewer than 50 per cent of

pregnant women and only 70 per cent of older people received the jab last winter. Many people are scared of needles or do not have the time to visit a doctor or nurse.

In the first human trial of the flu patch, involving 100 people, it was found to be just as effective at generating immunity for 12 months.

Researchers also say the patch is cheaper and versions for measles, rubella and polio are in development.

"Traditionally, if you get an influenza vaccine you need to visit a health care professional who will administer the vaccine using a hypodermic nee-

dle," said Dr Mark Prausnitz, regents' professor of chemical and biomolecular engineering at Georgia Tech.

"The vaccine is stored in the refrigerator, and the used needle must be disposed of in a safe manner. With the microneedle patch, you could pick it up at the store and take it home, put it on your skin for a few minutes, peel it off and dispose of it safely, because the microneedles have dissolved away.

"The patches can also be stored outside the refrigerator, so you could even post them to people."

The results of the first clinical trial showed that there were no serious side

effects, and local skin reactions were mostly faint redness and mild itching that lasted two to three days. Antibody responses generated by the vaccine were similar to those in groups who were given the traditional jab.

More than 70 per cent of patch recipients said they would prefer patch vaccination over injection. Researchers are now moving to phase-two trials and if successful the patch could be available in just a few years.

"Despite the recommendation of universal flu vaccination, influenza continues to be a major cause of illness leading to significant morbidity and

mortality," said Dr Nadine Roupael, associate professor of medicine at Emory University School of Medicine and principal investigator of the clinical trial.

"Having the option of a flu vaccine that can be self-administered easily and painlessly could increase coverage and protection by this important vaccine."

Dr Prausnitz added: "One of the main goals of developing the microneedle patch technology was to make vaccines accessible to more people."

The results of the trial were published in *The Lancet*.