



## INFLUENZA (FLU)

### Common Questions (and Answers) for Health Care Workers About Flu Vaccine

#### 1. I'm healthy. Why should I get vaccinated against the flu?

Even if you are healthy, as a health care worker it's especially important that you get a flu vaccine each year. Flu illness can be serious. On average, 36,000 people die from flu each year in the United States and 200,000 people are hospitalized—even some healthy adults. CDC and the Advisory Committee on Immunization Practices recommend that all health care workers get a flu vaccine every year.

Unfortunately, only about 45 percent of health care workers get vaccinated. The reasons for getting a flu vaccine are many:

- 1) Protect yourself: If you get the flu, you can miss a week or more of work and pay.
- 2) Protect your loved ones: If you get the flu, you can spread it to your family and loved ones. Older people, young children and people with chronic illness are especially vulnerable to getting seriously sick from the flu.
- 3) Protect your patients and your co-workers. If you get the flu, you can spread it to people you work with, and to patients that you care for.

**Most healthy adults may be able to infect others beginning 1 day before symptoms develop and up to 5 days after becoming sick. That means that you may be able to pass on the flu to someone else before you know you are sick, as well as while you are sick.**

#### 2. Are flu vaccines safe?

Flu vaccines are safe. There are two types of vaccine—the injectable vaccine (flu “shot”), or the nasal spray. Both of these have been studied closely, and serious side effects from these vaccines are very rare.

The most common side effect of the flu shot in adults is soreness at the spot where the shot was given, which usually lasts less than two days. The soreness is often caused by a person's immune system making protective antibodies to the killed viruses in the vaccine. These antibodies are what allow the body to fight against flu virus infection. The needle stick may also cause some soreness at the injection site. In 1976, a certain type of influenza (swine flu) vaccine was associated with Guillain-Barré Syndrome (G.B.S.), a severe paralytic illness. Since then, flu vaccines have not been clearly linked to GBS. However, if there is a risk of G.B.S. from current flu vaccines, **it would be no more than 1 or 2 cases per million people vaccinated. The risk of severe allergic reaction is about 1 in 4 million.**

The viruses in the nasal-spray vaccine are weakened and do not cause severe symptoms often associated with influenza illness. (In clinical studies, transmission of vaccine viruses to close contacts has occurred only rarely.)

In adults, side effects from LAIV (FluMist®) can include runny nose, headache, sore throat and cough.

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3. Why do people get flu-like symptoms after being vaccinated?

**Flu vaccines can NOT cause the flu. The viruses in flu vaccines are either killed or weakened. The vaccines work by 'priming your body's defenses in case you are exposed to an actual flu virus.** There are several reasons why someone might get flu-like symptoms even after they have been vaccinated against the flu. People may be exposed to an influenza virus shortly before getting vaccinated or during the two-week period that it takes the body to gain protection after getting vaccinated. This exposure may result in a person becoming ill with flu before the vaccine begins to protect them. Another possibility is that a person may become ill from other (non-flu) viruses that circulate during the flu season, which can also cause flu-like symptoms (such as rhinovirus). A person may also be exposed to an influenza virus that is not included in the vaccine as there are many different influenza viruses.

4. Can the flu shot give you the Flu?

No, the flu shot cannot cause flu illness. The three influenza viruses contained in the flu vaccine are each inactivated (killed), which means they cannot cause infection. Flu vaccine manufacturers kill the viruses used in the vaccine during the process of making vaccine, and batches of flu vaccine are tested to make sure they are safe.

5. Can the nasal spray flu vaccine give you the flu?

The nasal spray flu vaccine contains live viruses. However, the viruses are attenuated (weakened) and cannot cause flu illness. The weakened viruses are cold-adapted, which means they are designed to only cause infection at the cooler temperatures found within the nose. Some children and adolescents 2-17 years of age have reported experiencing mild reactions after receiving nasal spray flu vaccine, including runny nose, nasal congestion or cough, chills, tiredness/weakness, sore throat and headache. Some adults 18-49 years of age have reported runny nose or nasal congestion, cough, chills, tiredness/weakness, sore throat and headache. These side effects are mild and short-lasting, especially when compared to symptoms of influenza infection.

6. Do flu vaccines really work?

Yes. The ability of flu vaccine to protect a person depends on the age and health status of the person getting the vaccine, and the similarity or "match" between the virus strains in the vaccine and those in circulation. Testing has shown that both the flu shot and the nasal-spray vaccine are effective at preventing the flu. In years when the vaccine strains and the virus strains are well-matched, the vaccine can reduce the chances of getting the influenza by 70%-90% in healthy young adults. The vaccine may be less effective in elderly persons and very young children, but vaccination can still prevent serious complications from the flu. In healthy adults less than 65 years of age, the flu vaccine can also prevent lost work days, and lessen the number of doctor visits made and the number of courses of antibiotics used.

It is not possible to predict with certainty which influenza viruses will predominate during a given season or what the timing, severity or duration of a flu season will be. In February of the preceding year, experts must decide what viruses to include in the upcoming season's vaccine based on surveillance data, laboratory information, and availability of reference vaccine strains. Because of these factors, there is always the possibility of a less than optimal match between circulating viruses and the viruses in the vaccine. While forecasting which influenza viruses are likely to circulate in the upcoming season is a challenging task, in most seasons, experts have gotten it right. In 16 of the last 20 seasons, the viruses in the influenza vaccine have been well matched to the predominant circulating viruses. Since 1988, there has been only one season (1997-98) when there was very low cross-reaction between one or more of the

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viruses in the vaccine and predominant circulating viruses. However, even when there is a sub-optimal match in one or more components of the vaccine, vaccination is still recommended as the best way to prevent the flu. This is because the vaccine can cross-protect against different but related influenza viruses. And while a sub-optimal match may result in reduced effectiveness against the variant viruses, it still can still prevent many illnesses and can prevent flu-related complications from related influenza viruses.

Some examples of influenza vaccine effectiveness studies are included below:

Belongia E, et al. Interim Within-Season Estimate of the Effectiveness of Trivalent Inactivated Influenza Vaccine --- Marshfield, Wisconsin, 2007--08 Influenza Season. *MMWR* 2008;57:393-8.

Bridges CB, et al. Effectiveness and cost-benefit of influenza vaccination of healthy working adults: A randomized controlled trial. *JAMA*. 2000;284(13):1655–1663.

Demicheli V, et al. Prevention and early treatment of influenza in healthy adults. *Vaccine* 2000;18:957-1030.

Edwards KM, et al. A randomized controlled trial of cold-adapted and inactivated influenza vaccines for the prevention of influenza A disease. *J Infect Dis* 1994;169:68-76.

Keitel WA, et al. Efficacy of repeated annual immunization with inactivated influenza virus vaccines over a five year period. *Vaccine* 1997;15:1114-1122.

Nichol KL, Nordin JD, Nelson DB, Mullooly JP, Hak E. Effectiveness of influenza vaccine in the community-dwelling elderly. *N Engl J Med* 2007;357:1373--81.

Additional information on influenza vaccines can be found on the CDC Web site at [www.cdc.gov/flu](http://www.cdc.gov/flu)