

Seasonal epidemics of influenza occur every year in the United States, beginning in the fall. Typically, the epidemics cause about 36,000 deaths and 200,000 hospitalizations. Since the 1940s, a vaccine has been available to prevent influenza; unfortunately, the vaccine is not used as much as it should be. To prevent the hospitalizations and deaths caused every year by influenza virus, the Centers for Disease Control and Prevention has recommended that all U.S. citizens receive the influenza vaccine. *This recommendation has the potential to save thousands of lives.*

Q. What is influenza (flu)?

A. **Influenza (flu) is a virus that infects the nose, throat, windpipe and lungs.** The virus is highly contagious and is spread from one person to another by coughing, sneezing or talking. Influenza infections typically occur between October and April of each year.

Q. What are the symptoms of influenza?

A. **Typical symptoms of influenza include fever, chills, muscle aches, congestion, cough, runny nose and difficulty breathing.** Other viruses can cause symptoms similar to influenza. But, influenza virus is a more common cause of severe, fatal pneumonia.

Most of the people who die are older than 65, but many of those who are hospitalized are younger than 4. Children hospitalized because of influenza usually have high fever, wheezing, croup or pneumonia.

Because influenza is a virus, it can't be successfully treated with antibiotics.

Q. Who should get the influenza vaccine?

A. **The influenza vaccine is recommended for everyone 6 months of age and older.**

Children under 9 years of age who have never received an influenza vaccine require two doses. If a child under 9 years of age was immunized for the first time last season and only received one dose, he requires two doses this season.

The nasal version (FluMist) is only recommended for healthy people between 2 and 49 years of age and has the advantage of inducing an excellent immune response without requiring a shot.

Q. How is the vaccine made?

A. **There are two different influenza vaccines.**

The "inactivated" influenza vaccine is made by taking influenza viruses, growing them in eggs, purifying them and completely inactivating them with the chemical formaldehyde. This vaccine is given as a shot.

The "live, weakened" influenza vaccine (FluMist) is made so that it cannot grow in the lungs. However, because the weakened viruses can grow in the lining of the nose, they induce an excellent protective immune response. FluMist is also made by growing the viruses in eggs. This vaccine is given as a nasal spray.

Both vaccines contain the three different strains of influenza viruses likely to cause disease that year. The 2010 – 2011 version includes the novel H1N1 influenza virus as well as two others that are similar to strains previously included in the seasonal vaccine.

The influenza vaccine will prevent about 85 of every 100 people who receive it from developing moderate-to-severe influenza infection.

Q. If I got the novel H1N1 influenza vaccine or had influenza during the pandemic last year, do I need this year's seasonal influenza vaccine?

A. **Yes.** Even though this year's seasonal influenza vaccine contains the novel H1N1 strain of influenza that caused the 2009 pandemic, getting the current vaccine is still of benefit because two additional strains of influenza that may cause disease are contained in the vaccine.

Further, your immunity to the novel H1N1 strain will be boosted by the current vaccine regardless of whether you were immunized or had the disease last year.



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Influenza: What you should know

Q. Are the influenza vaccines safe?

A. Yes. The inactivated influenza vaccine can cause pain, redness or tenderness at the site of injection. It can also cause muscle aches and low-grade fever, but because the vaccine viruses are completely inactivated, they cannot possibly cause influenza.

The live, weakened vaccine can cause mild congestion and runny nose. However, because the live, weakened vaccine has been modified so that it cannot grow in the lungs, it cannot possibly cause pneumonia.

The influenza vaccine does have one side effect that can be quite serious. Because it is made in eggs, the vaccine contains small quantities of egg proteins. People allergic to eggs can have a severe, and rarely fatal, allergic reaction. This reaction happens in about one of every 2 million people who receive the vaccine. For this reason, people who are allergic to eggs should not receive the influenza vaccine.

However, if people are allergic to eggs and are at high risk of severe influenza infection, they can receive the vaccine under a protocol administered by a physician that minimizes the risk of an allergic reaction.

Q. What is the difference between seasonal influenza and an influenza pandemic?

A. A pandemic is a worldwide epidemic. Every year in the United States and throughout the world, influenza viruses cause epidemics. Because many people have some immunity, yearly epidemics don't infect everyone.

However, new strains of influenza virus can form when genetic material from both human and animal strains of influenza mix. Because virtually no one in the world is immune to these new viruses, they have the potential to sweep across the world unchecked. Typically many more people become ill and die during pandemics than during yearly epidemics.

In 2009 this happened with novel H1N1. Luckily, the new strain was not as fatal as some previous pandemic strains. Unfortunately, 60 million people in the U.S. still became ill, 270,000 were hospitalized and about 12,000 died. Of those who died, between 1,100 and 1,200 were children, about 10 times the number who die during a normal influenza season.

Q. Does the influenza vaccine contain thimerosal?

A. Some multi-dose preparations of the inactivated influenza vaccine given as a shot still contain a small quantity of thimerosal. However, thimerosal contained in vaccines has not been shown to cause harm and influenza infections can cause severe illness and death, so the benefits of receiving the vaccine clearly outweigh the theoretical risks.

This information is provided by the Vaccine Education Center at The Children's Hospital of Philadelphia. The Center is an educational resource for parents and healthcare professionals and is composed of scientists, physicians, mothers and fathers who are devoted to the study and prevention of infectious diseases. The Vaccine Education Center is funded by endowed chairs from The Children's Hospital of Philadelphia. The Center does not receive support from pharmaceutical companies.

Q. Why do I have to get an influenza vaccine every year?

A. The influenza vaccine is given every year because the strains of influenza viruses that circulate every year are different. Influenza is unique in its ability to change the proteins that reside on the surface of the virus. These changes mean that people naturally infected or immunized one year might not be protected the next year.

Q. Can pregnant women get the influenza vaccine?

A. Yes. Pregnant women are more likely to experience complications and hospitalization as a result of infection with influenza.

Q. When should I get the influenza vaccine?

A. Immunizations should be administered throughout the season because the peak incidence of influenza can occur as late as February or March.

Q. Can I avoid getting the vaccine and the disease by hand-washing and staying away from others who are ill?

A. While careful hand-washing, covering coughs and sneezes, and staying home when ill can help prevent the spread of disease, we cannot be certain that others will do the same. Further, not everyone infected with influenza realizes that they are transmitting it since infected people begin to spread the disease a day or two before symptoms occur.

So, while these measures can reduce your chance of getting influenza, and in fact, helped to stem transmission during the pandemic, they can only do so much to prevent influenza infections. The reality is that the only way to ensure protection from a specific disease is to have immunity acquired through immunization or previous exposure to the disease.



 The Children's Hospital
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