

Influenza Prevention and Treatment

Influenza (flu) is a contagious disease that can cause mild to severe symptoms and life-threatening complications, including death, even in healthy children and adults. Since it is not possible to know in advance how severe a flu season will be or how sick an individual will get due to flu, prevention and treatment are critical. The Centers for Disease Control and Prevention (CDC) “Take 3” Actions to Fight the Flu urges everyone age 6 months and older to get vaccinated as the first and best defense against the flu, and also to follow everyday preventive actions like hand hygiene, covering coughs and sneezes, and staying away from people who are sick. Those who do get the flu should take antiviral medications if they are prescribed.¹

Step 1: Annual Influenza Vaccination

Vaccination is the *best method* available to prevent flu. The vaccine is updated annually to protect against the influenza strains most likely to circulate each season. Even in the cases when vaccination does not prevent infection completely, it can reduce the severity of the disease and prevent the most serious complications of flu, including hospitalization and death.

Universal Recommendation:

The CDC recommends that **everyone** in the US, age 6 months and older get an influenza vaccine each year. Universal influenza vaccination is important because:

- Influenza is unpredictable and can kill or hospitalize even healthy adults and children
- Vaccination is a safe and effective preventive health action that can help protect everyone from flu
- Many people are unaware that they have an underlying condition that puts them at risk of flu-related complications

The US Food and Drug Administration (FDA) carefully tests each batch of influenza vaccine before it is released. Hundreds of millions of people have safely received seasonal flu vaccines.

Vaccine Availability:

For the 2015-2016 season, influenza vaccine supplies are plentiful, with more than 170 million doses anticipated to be available in the US. Vaccination is recommended as soon as the vaccine becomes available.² There are many locations that now offer influenza vaccine, including:

- Physician and other healthcare professional offices
- Public health departments
- Drug and retail stores
- Workplaces and schools

Many insurance plans pay for annual flu vaccination. Individuals covered by Medicare Part B can get the flu vaccine at no cost (no co-pay, no deductible).

This season, several types of flu vaccines are available, including both trivalent (three strains) and quadrivalent (four strains) vaccines. Different routes of administration are available for flu vaccines, including intramuscular, intradermal, jet injector, and nasal spray vaccine.² Health officials have not expressed a preference but, depending on what is available, consumers may have a choice of which vaccine to receive; however, health authorities stress that all vaccines provide protection and consumers should not delay immunization if their first choice is not available.

For more information about influenza vaccine options, see chart on page 4.

Step 2: Everyday Preventive Actions

The single best way to prevent seasonal flu is to get vaccinated each year, but healthy habits like covering your coughs and sneezes and washing your hands often can help stop the spread of germs that cause respiratory illnesses like the flu. The following steps can help prevent flu:³

- **Avoid close contact with sick people.** While sick, contact with others should be limited so infection does not spread. CDC advises staying home for at least 24 hours after the fever is gone except to get medical care or other necessities.
- **Cover your nose and mouth** with a tissue when you cough or sneeze and throw the tissue away after. If you don't have a tissue, cough or sneeze into your upper sleeve or elbow, not your hands.
- **Clean your hands** often with soap and water. If soap and water are not available, use an alcohol-based hand sanitizer that contains at least 60 percent alcohol.
- **Avoid touching your eyes, nose, and mouth** to prevent the spread of germs.
- **Clean and disinfect surfaces and objects** that may be contaminated with germs like the flu.

If an outbreak of flu or another illness occurs, people should follow public health advice. This may include information about how to increase distance between people and other measures.

Step 3: Treatment with Antivirals

Antiviral drugs are not a substitute for influenza vaccination. However, prescription antiviral medications are a critical component of the CDC "Take 3" Actions to Fight Flu this season, serving as an additional line of defense to treat the flu if you do get sick.¹ All individuals who are hospitalized, severely ill, or at higher risk for flu-related complications should be treated with antiviral drugs immediately if flu is suspected.⁴

Treatment of flu with antiviral drugs can reduce influenza symptoms, shorten the duration of illness by one to two days, and prevent serious complications, like pneumonia. Antivirals work best when taken within 48 hours of getting sick, but can still be beneficial when given later in the course of illness.⁵

Antiviral drugs are safe and effective across all age groups and can be used in children and pregnant women. For the 2015-2016 flu season, CDC recommends use of three influenza antiviral drugs to treat influenza: either oseltamivir (Tamiflu[®]), zanamivir (Relenza[®]) or peramivir (Rapivab[®]). A healthcare professional is best equipped to determine if antiviral treatment is needed.⁶

Antiviral drugs can also be considered for prevention in certain situations to help prevent flu in individuals who have been exposed to the virus. Antiviral drugs are about 70 to 90 percent effective when used as directed for prevention.⁵

The Role of Testing in Flu Treatment

Because it is important to start antiviral medication quickly, patients should contact a healthcare professional at the first signs of flu symptoms, which include: fever, aches (muscle, body, and headaches), chills, tiredness, and sudden onset. Other symptoms may include a cough, runny/stuffy nose, and/or sore throat. Some individuals may experience vomiting and diarrhea, though this is more common in children than adults.

Healthcare professionals may treat patients based on their clinical judgment and knowledge about the level of local flu activity. Diagnostic tests are also available to help guide treatment. Rapid influenza diagnostic tests provide results within minutes and may be completed in the office, however positive and negative predictive values vary considerably depending upon the prevalence of influenza in the community.⁷ Molecular tests are more accurate, but take longer to complete.⁸ CDC does note, however, that there is an FDA-approved molecular assay that is highly sensitive and can provide results in 15 minutes.

CDC SAYS:

“TAKE 3” ACTIONS TO FIGHT THE FLU

1 Vaccinate

- CDC recommends a yearly flu vaccine as the first and most important step in protecting against flu viruses.
- While there are many different flu viruses, the flu vaccine protects against the viruses that research suggests will be most common.
- Flu vaccination can reduce flu illnesses, doctors' visits, and missed work and school due to flu, as well as prevent flu-related hospitalizations and deaths.
- Everyone 6 months of age and older should get a flu vaccine ideally by October.
- Vaccination of high risk persons is especially important to decrease their risk of severe flu illness.
- People at high risk of serious flu complications include young children, pregnant women, people with chronic health conditions like asthma, diabetes or heart and lung disease and people 65 years and older.
- Vaccination also is important for health care workers, and other people who live with or care for high risk people to keep from spreading flu to high risk people.
- Children younger than 6 months are at high risk of serious flu illness, but are too young to be vaccinated. People who care for them should be vaccinated instead.

2 Stop Germs

- Try to avoid close contact with sick people.
- If you are sick with flu-like illness, CDC recommends that you stay home for at least 24 hours after your fever is gone except to get medical care or for other necessities. Your fever should be gone without the use of a fever-reducing medicine.
- While sick, limit contact with others as much as possible to keep from infecting them.
- Cover your nose and mouth with a tissue when you cough or sneeze. Throw the tissue in the trash after you use it.
- Wash your hands often with soap and water. If soap and water are not available, use an alcohol-based hand rub.
- Avoid touching your eyes, nose and mouth. Germs spread this way.
- Clean and disinfect surfaces and objects that may be contaminated with germs like the flu.

3 Antiviral Drugs

- If you get the flu, antiviral drugs can treat your illness.
- Antiviral drugs are different from antibiotics. They are prescription medicines (pills, liquid or an inhaled powder).
- Antiviral drugs can shorten your illness and make it milder. They can also prevent serious flu complications, like pneumonia.
- It's very important that antiviral drugs be used early to treat people who are very sick with the flu (like people in the hospital) and people who are sick with the flu and have a greater chance of getting serious flu complications, either because of their age or because they have a high risk medical condition. Other people also may be treated with antiviral drugs by their doctor. Most otherwise-healthy people who get the flu, however, do not need antiviral drugs.
- Flu-like symptoms include fever, cough, sore throat, runny or stuffy nose, body aches, headache, chills and fatigue. Some people also may have vomiting and diarrhea. People may be infected with the flu, and have respiratory symptoms without a fever.

FLU-LIKE SYMPTOMS INCLUDE:

fever cough sore throat runny or stuffy nose
body aches headache chills fatigue

Influenza Vaccine Options

Vaccine Type	Who Can Get It	How It's Given
Inactivated, <i>standard dose</i>	Children and adults age 6 months or older	Needle injected into the arm or thigh muscle
<ul style="list-style-type: none"> • Most common type of vaccine available • Can be given to anyone, regardless of health or pregnancy status • Some vaccines will include three influenza strains for the 2015-2016 season (two influenza A and one influenza B); some will include four strains (two influenza A and two influenza B) • Five manufacturers (age range for individual products varies) <ul style="list-style-type: none"> ○ BioCSL: three-strain vaccine (9 years and older) ○ GlaxoSmithKline: four-strain vaccine (3 years and older) ○ Novartis Vaccines: <ul style="list-style-type: none"> ▪ Three-strain egg-based vaccine (4 years and older) ▪ Three-strain cell-based vaccine (18 years and older) ○ ID Biomedical Corporation: four-strain vaccine (3 years and older) ○ Sanofi Pasteur: three- and four-strain vaccines (6 months and older) 		
Inactivated, <i>intradermal</i>	Adults age 18 to 64 years	Smaller needle injected into the skin in the upper arm
<ul style="list-style-type: none"> • Uses a microneedle that is 90 percent smaller than the one used for standard flu shots • Includes three strains for 2015-2016 season (two influenza A and one influenza B) • Uses less antigen than standard vaccines to elicit a similar immune response from the body • One manufacturer (Sanofi Pasteur) 		
Inactivated, <i>jet-injection</i>	Adults age 18 to 64 years	High-velocity stream of liquid injected into the muscle
<ul style="list-style-type: none"> • A fluid stream, which penetrates the skin in about one-tenth of a second • For adults age 18 to 64 years • Includes three strains for 2015-2016 season (two influenza A and one influenza B) • One manufacturer (BioCSL) 		
Inactivated, <i>high dose</i>	Adults age 65 years or older	Needle injected into the arm or thigh muscle
<ul style="list-style-type: none"> • Designed for people age 65 years and older; significantly more effective in reducing flu-related medical issues and hospital admissions compared to the standard dose for those ages 65 years and older⁹ • Includes three strains for 2015-2016 season (two influenza A and one influenza B) • One manufacturer (Sanofi Pasteur) 		
Recombinant (egg-free)	Adults age 18 years or older	Needle injected into the arm or thigh muscle
<ul style="list-style-type: none"> • Recombinant production method provides an alternative to egg-based vaccine production • Includes three strains for 2015-2016 (two influenza A and one influenza B) • An option for adults with known egg allergies • One manufacturer (Protein Sciences) 		
Live-attenuated influenza vaccine (LAIV)	Children and adults age 2 to 49 years	Sprayed into the nostrils
<ul style="list-style-type: none"> • Includes four strains for 2015-2016 season (two influenza A and two influenza B) • Should not be given to pregnant women, immunosuppressed persons, children or adolescents receiving aspirin, anyone who has taken antivirals within the previous 48 hours, persons with egg allergy, and children aged 2 through 4 years who have asthma or who have had a wheezing episode noted in the medical record within the past 12 months, or anyone who has had a severe allergic reaction to any vaccine component. • One manufacturer (MedImmune) 		

Any inactivated influenza vaccine may be administered to individuals who can eat lightly cooked eggs without a reaction. Those who experience hives after exposure to eggs may receive an inactivated vaccine if they are observed for 30 minutes after the vaccine is given. Another choice for persons 18 to 49 years of age with moderate to severe egg allergy is the recombinant vaccine. Persons with severe egg allergy who do not have access to recombinant vaccine or are outside the recommended age range should be referred to a healthcare professional familiar with manifestations of egg allergy for further evaluation of influenza vaccination options.

Influenza vaccine should be used with caution in anyone with a history of Guillain-Barré Syndrome within six weeks following a previous influenza vaccine dose.

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