



## Key Facts About Seasonal Flu Vaccine

### What to know

Influenza (flu) is a potentially serious disease that can lead to hospitalization and sometimes even death. Everyone 6 months and older in the United States, with rare exception, should get a flu vaccine every season. Flu vaccination has been shown to have many benefits including reducing the risk of flu illnesses, hospitalizations and even the risk of flu-related death. All flu vaccines in the United States will be trivalent (three component) vaccines beginning with the 2024-2025 season. For people 65 years and older, there are three flu vaccines that are preferentially recommended.

### Why people should be vaccinated

Influenza (flu) is a potentially serious disease that can lead to hospitalization and sometimes even death. Every flu season is different, and flu can affect people differently, but during typical flu seasons, millions of people get flu, hundreds of thousands of people are hospitalized and thousands to tens of thousands of people die from flu-related causes. Flu can mean a few days of feeling bad and missing work, school, or family events, or it can result in more serious illness.



Complications of flu can include bacterial pneumonia, ear infections, sinus infections and worsening of chronic medical conditions, such as congestive heart failure, asthma, or diabetes.

An annual seasonal flu vaccine is the best way to help reduce the risk of getting flu and any of its potentially serious complications. Vaccination has been shown to have many benefits including reducing the risk of flu illnesses, hospitalizations and even the risk of flu-related death. While some people who get a flu vaccine may still get sick with influenza, flu vaccination has been shown in several studies to reduce severity of illness.

### How flu vaccines work

Flu vaccines cause antibodies to develop in the body about two weeks after vaccination. These antibodies provide protection against flu illness.

Seasonal flu vaccines are designed to protect against the influenza viruses that research indicates will be most common during the upcoming season. Beginning again in 2024-2025, all flu vaccines in the United States will be "trivalent" vaccines, which means they protect against three different influenza viruses: an influenza A(H1N1) virus, an influenza A(H3N2) virus, and an influenza B/Victoria virus.

## Flu vaccine options

All flu vaccines for the 2024-2025 season will be trivalent vaccines, designed to protect against three different influenza viruses, including two influenza A viruses and an influenza B/Victoria virus. Different vaccines are licensed for use in different age groups, and some vaccines are not recommended for some groups of people.

### For people younger than 65 years

For people younger than 65 years, CDC does not preferentially recommend any licensed, age-appropriate influenza (flu) vaccine over another. Options for this age group include inactivated influenza vaccines [IIVs], recombinant influenza vaccine [RIV], or live attenuated influenza vaccine (LAIV), with no preference for any flu vaccine over another. Everyone should get an age-appropriate vaccine (that is, one that is approved for their age), with the exception that people 18 through 64 years old who have had a solid organ transplant and are taking immunosuppressive medications may receive high-dose (HD-IIV3) or adjuvanted inactivated (aIIV3) influenza vaccines as acceptable options (without a preference over other age-appropriate IIV3s and RIV3).

### For people 65 years and older

For people 65 years and older, there are three flu vaccines that are preferentially recommended over standard-dose, unadjuvanted flu vaccines. These are [Fluzone High-Dose flu vaccine](#), [Flublok Recombinant flu vaccine](#) and [Fluad Adjuvanted flu vaccine](#). More information is available at [Flu & People 65 Years and Older](#). This recommendation was based on a review of available studies which suggests that, in this age group, these vaccines are potentially more effective than standard dose unadjuvanted influenza vaccines. There is no preferential recommendation for people younger than 65 years.

If none of the three influenza vaccines preferentially recommended for people 65 years and older is available at the time of administration, people in this age group should get any other age-appropriate influenza vaccine instead.

### Available influenza vaccines include:

- [Standard-dose influenza shots](#) that are manufactured using virus grown in eggs. Several different brands of standard dose influenza shots are available, including Afluria, Fluarix, FluLaval, and Fluzone. These vaccines are approved for use in children as young as 6 months. Most influenza shots are given in the arm (muscle) with a needle. Shots are given in the arm or thigh (muscle) with a needle. Afluria can be given either with a needle (for people 6 months and older) or with a jet injector (for people 18 through 64 years only).
- A [cell-based influenza shot](#) (Flucelvax) containing virus grown in cell culture, which is approved for people 6 months and older. This vaccine is completely egg-free.
- A [recombinant influenza shot](#) (Flublok) which is a completely egg-free influenza shot that is made using recombinant technology and is approved for use in people 18 years and older. This shot is made without influenza viruses and contains three times the antigen (the part of the vaccine that helps your body build up protection against influenza viruses) than other standard-dose inactivated influenza vaccines, to help create a stronger immune response.
- An egg-based [high dose influenza shot](#) (Fluzone High-Dose), which is approved for use in people 65 years and older. This vaccine contains four times the antigen (the part of the vaccine that helps your body build up protection against influenza viruses) than other standard-dose inactivated influenza vaccines, to help create a stronger immune response.
- An egg-based [adjuvanted influenza shot](#) (Fluad), which is approved for people 65 years and older. This vaccine is made with an adjuvant (an ingredient that helps create a stronger immune response).

- An egg-based live attenuated influenza nasal spray vaccine (FluMist made with attenuated (weakened) live influenza viruses, which is approved for use in people 2 years through 49 years. This vaccine is not recommended for use in pregnant people, immunocompromised people, or people with certain medical conditions.

## **Who should be vaccinated**

Everyone 6 months and older in the United States, with rare exception, should get a flu vaccine every season. CDC's Advisory Committee on Immunization Practices has made this "universal" recommendation since the 2010-2011 influenza season.

Vaccination to prevent influenza and its potentially serious complications is particularly important for people who are at higher risk of developing serious influenza complications. A full list of age and health factors that are associated with increased risk is available at [People at Higher Risk of Developing Flu-Related Complications](#).

**Keep Reading:** [Who Needs a Flu Vaccine](#)

## **Who should not be vaccinated**

Different influenza vaccines are approved for use in people in different age groups. In addition, some vaccines are not recommended for certain groups of people. Factors that can determine a person's suitability for vaccination, or vaccination with a particular vaccine, include a person's age, health (current and past) and any allergies to influenza vaccine or its components.

## **When people should get vaccinated**

For most people who need only one dose of influenza vaccine for the season, September and October are generally good times to be vaccinated against influenza. Ideally, everyone should be vaccinated by the end of October. Additional considerations concerning the timing of vaccination for certain groups of people include:

- Most adults, especially those 65 years and older, and pregnant people in the first or second trimester should generally not get vaccinated early (in July or August) because protection may decrease over time. However, early vaccination can be considered for any person who is unable to return at a later time to be vaccinated.
- Some children need two doses of influenza vaccine. For those children it is recommended to get the first dose as soon as vaccine is available, because the second dose needs to be given at least four weeks after the first. Vaccination during July and August also can be considered for children who need only one dose.
- Vaccination during July and August also can be considered for people who are in the third trimester of pregnancy during those months, because this can help protect their infants for the first few months after birth (when they are too young to be vaccinated).

## **Where to get a flu vaccine**

Flu vaccines are offered in many doctor's offices and clinics. Even if you don't have a regular doctor or nurse, you can get a flu vaccine somewhere else like a health department, pharmacy, urgent care clinic, college health center, and even in some schools and workplaces.

## **Why you need flu vaccine every year**

A flu vaccine is needed every year for two reasons. First, a person's immune protection from vaccination declines over time, so an annual flu vaccine is needed for optimal protection. Second, because influenza viruses are constantly changing, the composition of flu vaccines is reviewed annually, and vaccines are updated to protect against the viruses that research indicates will be most common during the upcoming flu season. For the best protection, everyone 6 months and older should get vaccinated annually.

## **Protection after vaccination**

It takes about two weeks after vaccination for antibodies to develop in the body and provide protection against influenza virus infection. That's why it's best to get vaccinated before influenza viruses start to spread in your community.

## **Vaccine effectiveness**

Influenza (flu) vaccine effectiveness (VE) can vary. The protection provided by a flu vaccine varies from season to season and depends in part on the age and health status of the person getting the vaccine and the similarity or "match" between the viruses in the vaccine and those in circulation. During years when the flu vaccine match is good, it is possible to measure substantial benefits from flu vaccination in terms of preventing flu illness and complications. However, the benefits of flu vaccination will still vary, depending on characteristics of the person being vaccinated (for example, their health and age), what influenza viruses are circulating that season and, potentially, which type of flu vaccine was used.

## **If you got vaccinated and still get sick**

It's possible to get sick with flu even if you have been vaccinated (although you won't know for sure unless you get a flu test). This is possible for the following reasons:

- You may be exposed to an influenza virus shortly before getting vaccinated or during the period that it takes the body to gain protection after getting vaccinated. This exposure may result in you becoming ill with flu before the vaccine begins to protect you. (Antibodies that provide protection develop in the body about 2 weeks after vaccination.)
- You may be exposed to an influenza virus that is not included in the seasonal flu vaccine. There are many different influenza viruses that circulate every year. A flu vaccine is made to protect against the three influenza viruses that research suggests will be most common.
- Unfortunately, some people can become infected with an influenza virus that the vaccine is designed to protect against, despite getting vaccinated. Protection provided by flu vaccination can vary widely, based in part on the age and health of the person getting vaccinated. In general, flu vaccines work best among healthy younger adults and older children. Some older people and some people with certain chronic illnesses may develop less immunity after vaccination. Flu vaccination is not a perfect tool, but it is the best way to protect against flu virus infection.

## **A flu vaccine can still provide protection even if you do get sick**

Some people who get vaccinated may still get sick with flu. However, flu vaccination has been shown in studies to reduce severity of illness in people who get vaccinated but still get sick. A [2021 study](#) showed that among adults, flu vaccination was associated with a 26% lower risk of ICU admission and a 31% lower risk of death from flu compared with those who were unvaccinated. A [2017 study](#) showed that flu vaccination reduced deaths, intensive care unit (ICU) admissions, ICU length of stay, and overall duration of hospitalization among hospitalized adults with flu

## Vaccine Benefits

There are many reasons to get an influenza (flu) vaccine each year.

### Benefits of the Flu Vaccine

## Vaccine match

### **When there is a "good match" between viruses in the vaccine and circulating influenza viruses**

A "good match" is said to occur when the flu vaccine viruses used to produce flu vaccine and the viruses circulating among people during a given flu season are "like" one another such that the antibodies induced by vaccination protect against infection caused by circulating viruses.

### **About seasons when there is a less than optimal match**

Influenza viruses are constantly changing (called "antigenic drift") – they can change from one season to the next or they can even change within the course of one flu season. Experts must pick which viruses to include in the vaccine many months in advance in order for vaccine to be produced and delivered on time. (More information is available: Selecting the Viruses in the Influenza (Flu) Vaccine.) Because of these factors, there is always the possibility of a less than optimal match between circulating viruses and the viruses used to produce vaccine.

The production process for some seasonal vaccines also may impact how well vaccine works against certain viruses, especially influenza A(H3N2) viruses. Growth in eggs is part of the production process for many seasonal flu vaccines. While all influenza viruses undergo changes when they are grown in eggs, changes in influenza A(H3N2) viruses are more likely to result in antigenic changes compared with changes in other influenza viruses. These so-called "egg-adapted changes" are present in most of the vaccine viruses recommended for use in egg-based vaccine production and may reduce their effectiveness against circulating influenza viruses. Advances in vaccine production technologies (for example, cell-based and recombinant technology) and advanced molecular techniques are being explored as ways to improve flu vaccine effectiveness. Learn more by visiting, Advancements in Influenza Vaccines.

### **When circulating influenza viruses are different from viruses used in the flu vaccine**

During seasons when one or more of the circulating viruses are different or "drifted" from the vaccine viruses, vaccine effectiveness can be reduced. It's important to remember that flu vaccine protects against three different influenza viruses and multiple different viruses usually circulate during any one season. Even if the effectiveness of the vaccine is reduced against one virus, vaccination can still be effective at preventing flu illness caused by the other circulating viruses. For these reasons, CDC continues to recommend flu vaccination for everyone 6 months and older even if vaccine effectiveness against one or more viruses is reduced.

### **This season's vaccine "match"**

It's not possible to predict with certainty if a flu vaccine will be like circulating influenza viruses because flu viruses are constantly changing. A flu vaccine is made to protect against the influenza viruses that research and surveillance indicate will likely be most common during the upcoming season. Over the course of the flu season, CDC studies samples of circulating influenza viruses to evaluate how close a match there is between viruses used to make the flu vaccine and circulating influenza viruses. More information about the 2024-2025 flu season and recommended vaccines is available.

# Vaccine side effects (what to expect)

## A flu vaccine cannot cause flu

Flu vaccines that are given with a needle (flu shots) are currently made in two ways: the vaccine is made either with a) influenza vaccine viruses that have been killed (inactivated) and are therefore not infectious, or b) with proteins from an influenza virus (which is the case for recombinant influenza vaccine). Nasal spray vaccine is made with weakened (attenuated) live influenza viruses and also cannot cause flu illness. The weakened viruses are cold-adapted, which means they are designed to only reproduce at the cooler temperatures found within the nose. The viruses cannot reproduce in the lungs or other areas where warmer temperatures exist.

## Side effects after getting a flu vaccine

**While a flu vaccine cannot give you flu illness, there are different side effects that may be associated with getting a flu shot or a nasal spray flu vaccine.** These side effects are usually mild and short-lasting, especially when compared to symptoms of flu.

**A flu shot:** The viruses in a flu shot are killed (inactivated), so you cannot get flu from a flu shot. Some minor side effects that may occur are:

- Soreness, redness, and/or swelling where the shot was given
- Headache
- Fever
- Muscle aches
- Nausea
- Fatigue

**The nasal spray:** The viruses in the nasal spray vaccine are weakened and do not cause flu illness. In children, side effects from the nasal spray may include:

- Runny nose
- Wheezing
- Headache
- Vomiting
- Muscle aches
- Fever (low grade)

In adults, side effects from the nasal spray vaccine may include:

- Runny nose
- Headache
- Sore throat
- Cough

If these problems occur, they begin soon after vaccination and usually are mild and short-lived. A flu shot, like other injections, can occasionally cause fainting.

## Serious Side Effects

There may be a small increased risk of Guillain-Barré Syndrome (GBS), which is a rare neurological disorder after a flu vaccine. As with any medicine, there is a very remote chance of a vaccine causing a severe allergic

reaction, other serious injury, or death. People who think that they have been injured by a flu vaccine should contact their healthcare provider and seek medical care; they can also file a report with the Vaccine Adverse Event Reporting System (VAERS).

Source:

[https://www.cdc.gov/flu/vaccines/keyfacts.html?CDC\\_AAref\\_Val=https://www.cdc.gov/flu/prevent/keyfacts.htm](https://www.cdc.gov/flu/vaccines/keyfacts.html?CDC_AAref_Val=https://www.cdc.gov/flu/prevent/keyfacts.htm)