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# Influenza (flu)

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## Overview

Flu, also called influenza, is an infection of the nose, throat and lungs, which are part of the respiratory system. The flu is caused by a virus. Influenza viruses are different from the "stomach flu" viruses that cause diarrhea and vomiting.

Most people with the flu get better on their own. But sometimes, influenza and its complications can be deadly. To help protect against seasonal flu, you can get an annual flu shot. Although the vaccine isn't 100% effective, it lowers the chances of having severe complications from the flu. This is especially true for people who are at high risk of flu complications.

Aside from the vaccine, you can take other steps to help prevent infection with the flu. You can clean and disinfect surfaces, wash hands, and keep the air around you moving.



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[A Book: Mayo Clinic Guide to Home Remedies](#)

## Symptoms

The viruses that cause flu spread at high levels during certain times of the year in the Northern and Southern hemispheres. These are called flu seasons. In North America, flu season usually runs between October and May.

Symptoms of the flu such as a sore throat and a runny or stuffy nose are common. You may also get these symptoms with other illness such as a cold. But colds tend to start slowly, and the flu tends to come on quickly, within two or three days after you come in contact with the virus. And while a cold can be miserable, you usually feel much worse with the flu.

Other common flu symptoms include:

- Fever.
- Cough.
- Headache.
- Muscle aches.
- Feeling very tired.
- Sweating and chills.

In children, these symptoms may show up more generally as being fussy or irritable. Children also are more likely than adults to have ear pain, feel sick to the stomach, vomit or have diarrhea with the flu.

In some cases, people have eye pain, watery eyes or find that light hurts their eyes.

## Related information

- [COVID-19 vs. flu: Similarities and differences](#)
- [COVID-19, cold, allergies and the flu: What are the differences?](#)

## When to see a doctor

Most people who get the flu can manage it at home and often don't need to see a healthcare professional.

If you have flu symptoms and are at risk of complications, see your healthcare professional right away. Starting antiviral medicine within two days after your symptoms show up may shorten the length of your illness and help prevent more-serious problems.

If you have emergency symptoms of the flu, get medical care right away. For adults, emergency symptoms can include:

- Trouble breathing or shortness of breath.
- Chest pain or pressure.
- Ongoing dizziness.
- Hard to wake up or confusion.
- Dehydration.
- Seizures.
- Worsening of existing medical conditions.
- Severe weakness or muscle pain.

Emergency symptoms in children include all the symptoms seen in adults, as well as:

- Fast breathing or ribs that pull in with each breath.
- Gray or blue lips or nail beds.
- No tears when crying and a dry mouth, along with not needing to urinate.
- Symptoms, such as fever or cough, that get better but then come back or get worse.

### **More Information**

[Flu: When to see a doctor?](#)

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## Causes

Influenza is caused by viruses. These viruses travel through the air in droplets when someone with the infection coughs, sneezes or talks. You can inhale the droplets directly. Or you can pick up the virus from touching an object, such as a computer keyboard, and then touching your eyes, nose or mouth.

It's possible to spread the virus to others from about a day before symptoms appear until about 5 to 7 days after they start. This is called being contagious. Children and people with weakened immune systems may be contagious for a slightly longer time.

Influenza viruses are constantly changing, with new strains appearing often.

A person's first flu infection gives some long-term protection against similar strains of flu. But the vaccines offered each year are made to match the flu virus strains that are most likely to spread that season. The protection these vaccines offer lasts for months in most people.

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## Risk factors

There are a range of factors that may raise your risk of catching a flu virus or having complications from a flu infection.

## **Older and younger age**

Seasonal influenza tends to have worse outcomes in young children, especially those age 2 years and younger. Adults older than age 65 also tend to have worse outcomes.

## **Living conditions**

People who live in facilities with many other residents, such as nursing homes, are more likely to get the flu.

## **Weakened immune system**

An immune system that doesn't quickly clear out flu virus may raise the risk of getting the flu or getting flu complications. People may have a weakened immune system response from birth, due to illness, or due to disease treatment or medicine.

## **Chronic illnesses**

Chronic conditions may increase the risk of influenza complications. Examples include asthma and other lung diseases, diabetes, heart disease, nervous system diseases, previous history of stroke, metabolic disorders, problems with the airway, and kidney, liver or blood disease.

## **Race or ethnicity**

In the United States, people who are Native American or Alaska Native, Black, or Latino may have a higher risk of needing care in the hospital for influenza.

## **Aspirin therapy**

Young people on long-term aspirin therapy are at risk of developing Reye's syndrome if infected with the influenza virus.

## **Pregnancy**

Pregnant people are more likely to develop influenza complications, particularly in the second and third trimesters.

## **Obesity**

People with a body mass index (BMI) of 40 or higher have an increased risk of flu complications.

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# **Complications**

If you're young and healthy, the flu usually isn't serious. Although you may feel awful while you have it, the flu usually goes away in a week or two with no lasting effects.

But people at high risk may develop other health problems after the flu, called complications.

Getting another infection can be a complication of getting the flu. That includes illnesses such as croup and sinus or ear infections. Lung infections are another complication. Infection of the heart muscle or heart lining may happen after getting the flu. And in some cases, people may have infection of the central nervous system.

Other complications may be:

- Acute respiratory distress syndrome.
- Muscle damage, called rhabdomyolysis, or muscle swelling, called myositis.
- Toxic shock syndrome.

- Worsening of a chronic illness, such as asthma or kidney disease.
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# Prevention

## **Flu vaccines at Mayo Clinic**

Mayo Clinic offers flu shots in Arizona, Florida and Minnesota.

[Learn more about how to get your flu shot at Mayo Clinic.](#)

The U.S. Centers for Disease Control and Prevention (CDC) recommends annual flu vaccination for people age 6 months and older who do not have a medical reason to avoid the vaccine.

Getting a flu vaccine lowers:

- The risk of getting the flu. If the vaccine is given later in pregnancy, the flu vaccine helps protect a newborn from the flu too.
- The risk of having serious illness from the flu and needing to stay in the hospital due to the flu.
- The risk of dying of the flu.

The 2024-2025 seasonal flu vaccines each provide protection against three influenza viruses that researchers expect to be the most common this flu season.

The vaccine is available as a shot, a jet injector and a nasal spray.

For older children and adults, the flu shot is usually given in a muscle in the arm. Younger children may get the flu shot in a thigh muscle.



If you are an adult under the age of 65, you can choose to get your vaccine with a jet injector. Instead of a needle, this device uses a high-pressure, narrow stream of fluid to go through the skin.

The nasal spray is approved for people between ages 2 and 49 years old. It isn't recommended for some groups, such as:

- People who had a severe allergic reaction to a flu vaccine in the past.
- Pregnant people.
- Young people who take aspirin or a salicylate-containing medicine.
- People with weakened immune systems and people who are caregivers or close contacts of people with weakened immune systems.
- Children between ages 2 and 4 years old diagnosed with asthma or wheezing in the past 12 months.
- People who recently took antiviral medicine for the flu.
- People with a cerebrospinal fluid leak or the potential for a leak, as with a cochlear implant.

Check with your healthcare team to see if you need to be cautious about getting a nasal spray flu vaccine. If you can take the nasal spray flu vaccine, you may be able to do so, or give it to an eligible child, without seeing a healthcare professional.

There also are vaccines offered called high-dose or adjuvanted flu vaccines. These vaccines may help some people avoid the need for care in the hospital due to influenza. People over age 65 can get these vaccines. These vaccines also are recommended for people age 18 and older who have a solid organ transplant and take medicine to weaken their immune response.

If you have an egg allergy, you can still get a flu vaccine.

The first time children between 6 months and 8 years get a flu vaccine, they may need two doses given at least four weeks apart. After that, they can receive single annual doses of the flu vaccine. Check with your child's healthcare professional.

Also, check with your healthcare team before receiving a flu vaccine if you had a serious reaction to a previous flu vaccine. People who have had Guillain-Barre syndrome also should check with a healthcare professional before getting the flu vaccine. And if you feel sick when you go to get the shot, check with your healthcare team to see if you should delay getting the vaccine.

## Controlling the spread of infection

The influenza vaccine isn't 100% effective. So it's important to take steps to lower the spread of infection, including:

- **Wash your hands.** Wash your hands well and often with soap and water for at least 20 seconds. If soap and water aren't available, use an alcohol-based hand sanitizer with at least 60% alcohol. Make sure friends and family that you're around regularly, especially kids, know the importance of hand-washing.
- **Avoid touching your face.** Keeping your hands away from your eyes, nose and mouth helps keep germs away from those places.
- **Cover your coughs and sneezes.** Cough or sneeze into a tissue or your elbow. Then wash your hands.
- **Clean surfaces.** Regularly clean often-touched surfaces to prevent spread of infection from touching a surface with the virus on it and then your face.
- **Avoid crowds.** The flu spreads easily wherever people gather — in child care centers, schools, office buildings and auditoriums and on public transportation. By avoiding crowds during peak flu season, you lower your chances of infection.

Also avoid anyone who is sick.

If you're sick, stay home until you feel better and have had no fever for a full 24 hours, and you haven't taken medicine for fever during that time. If your fever returns or you start to feel worse, stay apart from others until your symptoms improve and you are fever-free without medicine for 24 hours. Doing so will lower your chance of infecting others.

## More Information

[Flu shots](#)

[Cold and flu viruses: How long can they live outside the body?](#)

[High-dose flu vaccines: How are they different from other flu vaccines?](#)

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