Patient information from the BMJ Group

Flu

In this section

Flu

If you catch flu, you don't just catch a cold. You'll probably feel very ill with a headache, fever, chills, body aches, and a cough.

Some people need hospital treatment. But most people recover without it.

We've brought together the best research about flu and weighed up the evidence about how to treat it. You can use our information to talk to your doctor and decide which treatments are best for you.

What is flu?

Flu is an infection of your airways. It's caused by the flu virus. Flu is normally worse than a cold, and it can make you feel very ill.

Flu stands for **influenza**. There are three types of influenza virus: A, B, and C. Types A and B can make you very ill. [1] Type A is the world's most common flu virus. [2] It usually makes you more ill than type B. [3] Type C isn't normally very serious.

If you get the flu, it can make you feel very ill.

Doctors diagnose flu by looking at your symptoms. They only test for a particular virus if they are monitoring a type of flu that could spread to lots of people.

The flu virus lives in your nose, your throat, and the air passages leading to your lungs. You usually get a fever, body aches, chills, and a dry cough. The flu virus can also cause more serious problems, such as pneumonia. [1]

When you're infected with a virus, your immune system tries to fight it. If you've recovered from a virus before, your body will know how to deal with it in the future. This means that you won't get ill if you come into contact with the same virus again. But the influenza virus changes all the time. [1] This is called **mutation**. So you can catch the flu even if you've had it the year before.

Flu spreads very easily from person to person. You can get it from people who cough, sneeze, or talk near you. [3] You can get the flu from someone while they are ill or a few days before they have any symptoms.

Some people in Asia, Russia, and Turkey have caught a more serious type of flu from close contact with birds. It's called **bird flu** or **avian flu**. To read more, see Bird flu .

Flu vaccines might help prevent some types of flu. To read more, see Flu vaccines .

What are the symptoms of flu?

Flu symptoms usually come on quickly. They can make you feel very ill.

They include: [21]

- Fever (about 38°C to 40°C)
- Shivering
- A dry cough
- Muscle aches
- Headache
- Sore throat
- Feeling extremely tired.

Young children and older people may not have all of these symptoms. But they're more likely to become very ill. [22]

Your doctor will probably decide whether you have flu based on your symptoms. Your doctor can find out for certain if you have flu by testing a sample of fluid from your nose or your blood. But most people won't need these tests. [23]

Most people don't need to see a doctor if they have flu. The best thing to do is to stay at home, rest, and drink plenty of fluids. Paracetamol can help with aches or fever.

However, you should speak to a doctor if you:

- Are elderly
- Are pregnant
- Have a medical condition (such as heart failure or asthma)
- Have a young child who has flu
- Have symptoms lasting more than a few days.

How common is flu?

Flu is most common during cold months (between December and March in the northern hemisphere).

Every year in the UK: [24] [25]

- About 1 in 5 adults catch flu
- About 1 in 20 children get flu
- About 1 in 100 people are treated for flu in hospital
- About 300 to 400 die of flu. About 9 in 10 people who die because of the flu are aged over 65.

Most people who go to hospital because of flu have pneumonia or another complication. [26] Children under 1 year old are also more likely to need to go to hospital with flu. [24]

What treatments work for flu?

Most people recover from flu without needing treatment. But flu can cause serious problems in babies, older people, or people with other medical problems.

- Drugs that fight the flu virus are called **antiviral medicines**. They're normally only for people who could become seriously ill from flu. But there isn't enough good research about how well they work.
- People who use antiviral medicines need to start taking them within 48 hours of the first symptoms. However, children have to start taking a medicine called zanamivir within 36 hours of getting symptoms.

- Antiviral drugs might shorten the time your symptoms last, but only by about one day. But much of the early research was incomplete. So it's hard to even say this for sure.

- Research has not found that antiviral drugs help prevent extra problems (**complications**), such as pneumonia .

- A **flu vaccine** may help you avoid flu. (For more information, see Flu vaccines .)

Which treatments work best? We've looked at the best research and given a rating for each treatment according to how well it works.

Treatment Group 1

Treatments for flu

Treatments that need further study

- Oseltamivir (Tamiflu)

- Zanamivir (Relenza)

Treatments that are likely to be ineffective or harmful

- Amantadine (for influenza A)

What will happen to me?

Most people get better from the flu in about one week.

You should rest, drink plenty of fluids, and take an over-the-counter medicine such as paracetamol. Children under 16 shouldn't take aspirin, because it can be dangerous.

You may still be tired and cough for one or two weeks after other symptoms go away. [27]

For some people, flu is more serious. They get more serious problems (**complications**). This is more likely to happen if you are very young, older than 65, or have another medical problem, such as heart disease. [28]

Flu complications include: [27] [29]

- Trouble breathing

- Pneumonia , caused by bacteria or a virus

- Ear infection

- Sinus infection
- Worsening of an existing problem such as diabetes or asthma.

If you get a complication caused by bacteria, your doctor will prescribe antibiotics, although antibiotics won't treat flu, which is caused by a virus. Should you get very ill, you may need to be treated in hospital. [28]

Taking a flu vaccine can help prevent the flu. To read more, see Flu vaccines.

Treatments:

Oseltamivir (Tamiflu)

In this section

Oseltamivir is an antiviral medicine. Its brand name is Tamiflu. It is for use against influenza type A and type B (see What is flu?). You take it as a capsule or liquid, and when using it to treat flu you need to take it within 48 hours of getting the first symptoms.

Some researchers who have examined studies of oseltamivir warn that many of them are poor quality. This is because they don't provide enough information about what they found, or because they report some findings but not others. So it's not clear how reliable the research about this medicine is. [30]

In the UK, oseltamivir is normally used by people over 65 or those who have medical problems such as asthma, chronic obstructive pulmonary disease (COPD), heart disease, kidney disease, a weak immune system, liver disease, a disease affecting their nervous system, or diabetes. [31] It isn't recommended for children under 12 months old.

To treat flu, you must take oseltamivir for five days. To prevent flu, you usually take it for 10 days. [32] A large review of studies found some evidence that people who took oseltamivir to prevent flu were less likely to get flu symptoms. [30]

Research has found that oseltamivir might shorten the time adults and children have flu symptoms. One review looked at evidence from 20 studies of adults who were normally healthy.

Adults recovered about half a day earlier than they would have anyway. Children got better about a day earlier than they would have anyway. [30]

Also, taking oseltamivir probably doesn't stop people from getting complications from flu, such as bronchitis or pneumonia. [30]

The side effects of oseltamivir include nausea and vomiting. [30]

The European Medicines Agency, which checks the safety of medicines used in Europe, has warned that some people taking oseltamivir may be at risk of injuring themselves, or having accidents after having taken it. Children and teenagers are especially at risk. Some people taking the drug have experienced convulsions (fits), unusual behaviour, and confused feelings (becoming delirious). If you are caring for someone taking oseltamivir, keep a close watch on them and contact a doctor at once if they show any sign of unusual behaviour. [33]

Doctors have also tried to use oseltamivir to treat people who have bird flu (avian flu). [34] It's not clear whether it helps. In some people with bird flu who were treated with oseltamivir, the virus became resistant. This means that oseltamivir couldn't fight the virus. Doctors don't know yet whether giving higher doses or using it for longer might work better.

Zanamivir (Relenza)

In this section

Zanamivir (Relenza) is a spray that's used to treat influenza type A and type B (for more information, see What is flu?) It comes as a dry powder that you breathe in through your mouth using a device called a Diskhaler. [35] Adults have to take it within 48 hours of their first flu symptoms. Children need to take it within 36 hours of getting symptoms.

Some researchers who have examined studies of zanamivir warn that many of them are poor quality. This is because they don't provide enough information about what they found, or because they report some findings but not others. So it's not clear how reliable the research about this medicine is. [30]

In the UK, zanamivir is normally used only by people over 65 or those who have medical problems such as asthma , chronic obstructive pulmonary disease (COPD) , heart disease , kidney disease , a weak immune system , liver disease, a disease affecting their nervous system, or diabetes . [31]

Zanamivir isn't recommended for children under 12. [35]

This medicine is normally taken for about five days. [35]

One large review of studies (called a systematic review) found that adults who took zanamivir to treat flu symptoms got better about half a day earlier than they would have anyway. Zanamivir didn't help children recover any sooner. [30]

There is some evidence from studies that people who took zanamivir to prevent flu were less likely to get flu symptoms. [30]

Older people may have trouble using zanamivir spray. [36] And it may cause breathing problems in people who have asthma or lung problems. [37] But zanamivir seems to cause fewer side effects than a similar medicine called oseltamivir . [30]

There have been some reports of people becoming delirious and confused and injuring themselves while taking zanamivir. [38] Children have been mainly affected and the symptoms subside quickly. It's not known if zanamivir causes these symptoms, as they often happen with the flu. But doctors say to look out for signs of unusual behaviour and to seek advice if you're worried.

Amantadine (for influenza A)

In this section

Amantadine is not recommended in the UK to treat or prevent flu. This is because there's not enough research to show that it helps older people or people with another medical condition. And these are the people who most need treatment for flu. [32] [39] Also, some types of flu virus have become resistant to amantadine. That means it can no longer kill these viruses.

Amantadine (brand name Lysovir, Symmetrel) fights only influenza A, not influenza B. (For more information, see What is flu?) You take it as a capsule or syrup. [35] It can also be used to prevent flu for people who have recently come into contact with the virus.

There's some evidence that this drug is likely to help with flu symptoms. We found a summary of eight good studies. [40] Amantadine shortened the time that people had fever by about one day. But it didn't prevent flu for people who took it after coming into contact with someone who was ill.

One big review of the research found that amantadine didn't help prevent fever in children. And the review found no studies looking at amantadine for older people. [41]

There hasn't been any good research about whether amantadine helps prevent complications of the flu, such as pneumonia. And there isn't good research about whether amantadine is safe to take if you're pregnant, over 65, have other medical problems, or have a weakened immune system.

Possible side effects include nausea, dizziness, and insomnia. [35]

Further informations:

Bird flu

Birds can be affected by flu, just like humans. There are several types of bird flu (also called **avian flu**). Some types don't harm birds that much. Other types kill whole flocks in just a few days.

A severe strain of bird flu emerged in 2003, called H5N1. It has spread widely among birds in several Asian countries. There have been more limited outbreaks in flocks of birds in some European countries.

Can humans catch it?

H5N1 sometimes passes to humans who have very close contact with infected birds. For example, some poultry workers have caught bird flu. But H5N1 doesn't pass easily from birds to humans.

Many millions of birds have been affected by H5N1, but in March 2009 there had only been 411 confirmed human cases worldwide. [4] Although this is worrying, it's a small number of people overall, considering how many people across the world come into contact with birds.

Most human cases of H5N1 have happened in countries where people are in regular contact with birds and keep small flocks close to their homes. The biggest risk comes from contact with bird droppings.

Although H5N1 is hard for people to catch, if someone does get it, the virus can make them dangerously ill.

There have been outbreaks of bird flu among birds in the UK. So far, no humans have been affected. [5]

Can bird flu pass from person to person?

It's impossible to rule out one-off cases of H5N1 being passed from person to person. However, H5N1 can't pass easily between humans. For most people, this limits the danger, as the infection almost always comes from direct contact with infected birds.

Why are scientists worried?

H5N1 isn't a big danger for most people at the moment, but scientists are worried because flu viruses can easily change. If someone caught bird flu at the same time as having human flu, the two viruses could mix. This might create a new strain of flu that spreads easily from person to person.

A new strain of human flu could be dangerous because people's immune systems wouldn't have had time to learn how to fight it. It could quickly infect millions of people around the world (this is called a **pandemic**).

Can bird flu be treated?

Drugs that fight viruses can be used to treat bird flu in humans. These drugs may increase people's chances of survival if they are given quickly. The government has stockpiled enough doses of an antiviral drug called oseltamivir (brand name Tamiflu) to treat one-quarter of the people in Britain.

Scientists have also developed a vaccine to prevent H5N1. [6] It's not known whether this vaccine would help if H5N1 changed into a form that passed easily between humans. It would depend on how similar the new human flu virus was to the bird flu virus.

If a flu pandemic happened, vaccines could be developed to treat the virus, but it would take time. The government is making arrangements that will allow millions of doses of the flu vaccine to be manufactured as quickly as possible if a strain of pandemic flu is identified.

Some companies have advertised vitamin pills or food supplements that they claim will help to prevent or treat bird flu. The Food and Drug Administration in the United States says it's extremely unlikely that these products work. [7]

Can I still eat poultry?

According to the Food Standards Agency, in the UK, there's no danger from eating turkey, chicken, or other poultry. [8] Birds from farms affected by H5N1 in the UK are destroyed, and poultry imports are banned from other countries affected by H5N1. [9]

Even if infected birds did enter the food supply, cooking would kill the virus. You should cook poultry thoroughly, until there's no pink visible and the juices run clear. Eggs should be cooked until the white is solid.

Should I travel to countries where there is bird flu?

The Foreign and Commonwealth Office says that the risk of catching bird flu in countries affected by it is very small. There's no reason to avoid them. But the Foreign and Commonwealth Office does advise that you: [10]

- Avoid live animal markets and poultry farms
- Do not eat or handle raw or undercooked poultry
- Avoid areas contaminated with animal droppings
- Wash your hands regularly.

Even in a country reporting cases of bird flu, no danger comes from eating thoroughly cooked poultry or eggs. Raw or undercooked poultry is risky. But heat kills the virus. [11]

Is there anything I should do?

There's little reason to worry about any immediate danger from bird flu. But if you want to avoid normal human flu, you may be able to get a flu vaccine from your GP.

Flu vaccines

How vaccines work

Your body's immune system fights off infections.

Vaccines help your body make antibodies before it is infected by a virus. Flu vaccines contain dead or weakened flu viruses. These help your body make antibodies. So when you come into contact with the live flu virus, your body already knows how to fight it.

The flu virus

Flu viruses mutate (change) from year to year. Every year, scientists try to work out which strains of flu are most likely to be around the following winter. Then they make a vaccine to fight those types of flu.

There are two types of flu vaccine.

- One type you take by **injection**. It's made from dead flu viruses that can't hurt you. [12] One or two weeks after you have this jab, your body builds up immunity against flu. This lasts about one year. [13]
- The other type of flu vaccine is a **nasal spray**. This spray contains flu virus that is alive but very weak. It helps you build up immunity without getting ill.

Usually you take a flu vaccine in the autumn. That way, you are protected when flu comes around in winter.

The flu virus changes from year to year, and the vaccine wears off. So if you need a flu vaccine, you'll need a new one every year. [12]

The flu vaccine is made in eggs. If you are allergic to eggs, talk to your doctor before having the vaccine. You may need to have it in hospital.

Who should have a flu vaccine?

Not everyone needs a flu vaccine. For most healthy people flu isn't serious, although it can be unpleasant. If you're elderly or have other health problems flu can be more dangerous.

In the UK, a flu vaccine is recommended if you: [14]

- Are aged 65 or older
- Have lung problems, such as asthma or chronic obstructive pulmonary disease (COPD)
- Have a heart problem, such as heart failure
- Have had a stroke or mini-stroke (a transient ischaemic attack [TIA])
- Have long-term kidney or liver problems
- Have multiple sclerosis (MS), cerebral palsy, or another neurological condition that stops your nerves working well
- A problem with your spleen, such as sickle cell disease, or you have had your spleen removed
- Have a weakened immune system, for example if you are having chemotherapy or have HIV (human immunodeficiency virus) infection or AIDS
- Have diabetes
- Are a health care worker or a social care worker
- Live in a residential or nursing home
- Are looking after someone who is elderly or disabled
- Are pregnant.

It's also important that children over the age of 6 months get an annual flu vaccine if they have a long-term health condition that could get worse if they catch flu. The NHS has also started offering an annual flu vaccine to all children age 2. [15] This is gradually being expanded to include all children aged 2 to 16. [16] This vaccine is given as a nasal spray, not a jab.

If you don't fall into one of these groups but think you need a flu jab, talk to your doctor.

One large summary of the research, called a systematic review, found that about 10 in 100 vaccinated adults got flu symptoms, while about 16 in 100 unvaccinated adults got flu symptoms. [17] However, this study also warned that many studies into flu vaccines are of poor quality, and that they might over-estimate how well vaccines work.

One systematic review looked at children aged between 2 and 16. About 8 in 100 children who had the vaccine got flu. This compared with about 26 in 100 children who didn't have the vaccine. [18]

The review found that having any type of flu vaccine reduced the chances of children needing to be absent from school because of illness from 37 in 100 to 5 in 100. [18]

The vaccine doesn't seem to work as well in older people. In fact, a large, good-quality systematic review found it was not possible to say whether vaccines really work at all in older people, because the quality of the studies in not good enough. [19] However, the government still recommends flu vaccines for people over 65. [14]

For people with a lung disease called COPD (chronic obstructive pulmonary disease), having the vaccine means they are less likely to have a bad attack of symptoms (an exacerbation) because of infection. [20]

The flu vaccine only protects against the flu virus. It's still possible to get a bad cold or another illness that's similar to flu, even after you've had the flu vaccine. [18] But flu is usually more serious than these other illnesses, so it makes sense to get protected.

Side effects

Having a flu vaccine can't give you flu. The viruses in the vaccine are dead and can't cause you any harm. [13]

But the injection may cause a sore arm. [17] Some people have muscle aches or a mild fever after their jab. [13]

The nasal spray flu vaccine may cause a sore throat or a runny nose. [17]

Glossary:

pneumonia
Pneumonia is an infection in your lungs. Anything that causes infections (bacteria, viruses or fungi, for example) can give you pneumonia.

immune system
Your immune system is made up of the parts of your body that fight infection. When bacteria or viruses get into your body, it's your immune system that kills them. Antibodies and white blood cells are part of your immune system. They travel in your blood and attack bacteria, viruses and other things that could damage your body.

infection
You get an infection when bacteria, a fungus, or a virus get into a part of your body where it shouldn't be. For example, an infection in your nose and airways causes the common cold. An infection in your skin can cause rashes such as athlete's foot. The organisms that cause infections are so tiny that you can't see them without a microscope.

asthma
Asthma is a disease of the lungs. It makes you wheeze, cough and feel short of breath. Asthma attacks are caused by inflammation and narrowing of your airways, which makes it hard for air to pass in and out of your lungs.

chronic obstructive pulmonary disease (COPD)
Chronic obstructive pulmonary disease (COPD) is an illness that causes coughing and difficulty breathing. Most of the people who get it have smoked for a long time. COPD can include both emphysema, which is the breakdown of air sacs (alveoli) in your lungs, and chronic bronchitis, which is a recurrent, long-lasting cough that brings up phlegm.

heart failure
When the heart loses its ability to push enough blood through the blood vessels, it is called heart failure.

stroke
You have a stroke when the blood supply to a part of your brain is cut off. This damages your brain and can cause symptoms like weakness or numbness on one side of your body. You may also find it hard to speak if you've had a stroke.

mini-stroke
When the supply of blood to a part of your brain is blocked off for a short time, but not long enough to cause permanent damage, it's called a mini-stroke. Doctors call it a transient ischaemic attack (or TIA for short). A mini-stroke can make you lose control of one side of your body, or you may lose the sight in one eye. But these problems go away within 24 hours.

multiple sclerosis
Multiple sclerosis (MS) is a disease that damages the walls of your nerves. No one knows for sure what causes it. If you have multiple sclerosis, you may lose feeling in certain parts of your body. You may also have trouble with your vision or problems controlling your movements.

cerebral palsy
Children with cerebral palsy have disabilities because they were injured while they were in the womb or during birth. They often have trouble moving some or all of their limbs. They may also have learning difficulties or seizures.

spleen
Your spleen is an organ that sits on the left side of your body just below your ribs. It helps your body fight infections.

sickle cell disease
Sickle cell disease is a blood disorder that runs in families. Under certain conditions, the red blood cells of people with this disease change shape to look like a sickle. This causes a lot of pain and a range of other symptoms, including infections in the lungs.

HIV
HIV stands for human immunodeficiency virus. It's the virus that causes AIDS. It makes you ill by damaging cells called CD4 cells. Your body needs these cells to fight infections. You can get HIV by sharing needles for injecting drugs, or by having sex without a condom with someone who has the virus.

AIDS
AIDS stands for acquired immunodeficiency syndrome. People who are infected with the human immunodeficiency virus (HIV) get AIDS when the virus has destroyed most of their immune system. When people have AIDS, their body isn't able to fight infections. So even common infections, such as colds, can cause serious problems.

diabetes
Diabetes is a condition that causes too much sugar (glucose) to circulate in the blood. It happens when the body stops making a hormone called insulin (type 1 diabetes) or when insulin stops working (type 2 diabetes).

systematic reviews
A systematic review is a thorough look through published research on a particular topic. Only studies that have been carried out to a high standard are included. A systematic review may or may not include a meta-analysis, which is when the results from individual studies are put together.

bacteria
Bacteria are tiny organisms. There are lots of different types. Some are harmful and can cause disease. But some bacteria live in your body without causing any harm.

antibiotics
These medicines are used to help your immune system fight infection. There are a number of different types of antibiotics that work in different ways to get rid of bacteria, parasites, and other infectious agents. Antibiotics do not work against viruses.

heart disease
You get heart disease when your heart isn't able to pump blood as well as it should. This can happen for a variety of reasons.

kidney disease

Your kidneys are the organs in your body that make urine. Kidney diseases are diseases in which your kidneys have been damaged. Kidney disease can be caused by several things, including high blood pressure (hypertension).

bronchitis
Bronchitis is inflammation of one or both of the major airways (called bronchi) that lead in and out of your lungs.

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