



# Bird flu

Bird flu (avian influenza) has been an important topic in the news since it was first seen in humans. Although there have been lots of reports about the illness, do you know what causes it, how it spreads to humans and whether we are at risk?

## What is flu?

“Flu”, or influenza, is caused by the influenza virus. Outbreaks occur in humans every winter. It is spread by breathing in droplets of water in the air containing the virus that have been coughed or sneezed out by another person. The usual symptoms in adults are fever, muscle aches and cough, and are usually bad enough to make you stay in bed for 2 or 3 days.

## What are the different types of flu?

There are many flu viruses, which can be type A, B or C. Within these three types, there are many different subtypes depending on what is on the surface of the virus. The things found on the surface are proteins, and these can be a protein called haemagglutinin (H) or a type called neuraminidase (N). Different types of H and N are given different numbers, and these numbers are what give the types of flu their names (e.g. H5N1).

## What is bird flu?

Many animals can get the flu. The illness caused in birds, “bird flu”, is also called “avian influenza”. While all birds can be infected with bird flu, many wild birds can have a virus without any signs of being ill. Other birds, including chickens, ducks and geese, become sick when infected with the same bird flu viruses. In poultry, bird flu viruses can cause two different types of disease. One is fairly common and is a mild illness, and the other is rare and deadly.

## Can humans catch bird flu?

Flu viruses normally only infect one species and do not cause infection in other species. However, human cases of bird flu have now been seen. Out of the very many different types of bird flu, only four have infected humans. These are called H5N1, H7N3, H7N7 and H9N2.

## What is the H5N1 virus?

The H5N1 virus is the one you hear most about on the news. This is because:

- It is causing a worldwide outbreak in birds at the moment
- It has infected humans on many occasions in recent years
- Up until 2012, it has caused more than 600 human cases of very severe disease and more than 350 deaths
- When people catch H5N1 virus there is a high chance that they will die

## How can the H5N1 virus pass from birds to humans?

From what has been seen so far, it is difficult for humans to catch the H5N1 virus. Although tens of millions of poultry over huge areas have been infected since 2003, fewer than approximately 600 human cases have been confirmed in 2012.

As far as we know, the way that humans get infected with the H5N1 bird flu virus is only by very close contact with dead or sick birds (for example butchering and preparation of infected birds for eating, or playing in an area with waste from free-ranging poultry).

Most cases of human bird flu have occurred in rural households where small flocks of poultry are kept and very few cases have been detected in the groups thought to be at high risk (for example commercial poultry workers and vets). No direct human to human spread has been confirmed. Many scientists are now doing research into the factors that might increase the chances of humans being infected.

**What are the signs and symptoms of H5N1 bird flu in humans?**

In many patients, the disease caused by the H5N1 virus makes the patient ill very rapidly. Initial symptoms include:

- high fever (usually higher than 38°C)
- severe aches and pains all over the body And possibly:
- breathlessness
- diarrhoea
- vomiting
- abdominal pain
- chest pain

Almost all patients eventually develop pneumonia and many of their organs may stop working properly. There may be more symptoms than those listed and not all patients have the symptoms above.

**What can be done to prevent or treat H5N1 bird flu?**

Unfortunately, the current flu vaccine that many people take each year does not protect against bird flu and there is no vaccine currently available for bird flu. Anti-viral drugs can be used for bird flu, for example oseltamivir (known as Tamiflu®). Anti-virals may be given to help prevent infection with bird flu if taken before a person is infected or to help improve survival from bird flu if given within 48 hours of the first symptoms. In the absence of a vaccine, anti-virals are the only medical intervention for prevention and treatment.

**Why is bird flu such a worry?**

Scientists fear that the H5N1 bird flu virus could change into a form that can easily infect and spread between people, which would result in an extremely contagious and lethal disease. If this were to happen, the resulting virus would probably be something humans have never been exposed to before. With no immune defences, the infection could cause terrible illness, such as occurred in the 1918–1919 Spanish flu pandemic, which killed an estimated 40–50 million people worldwide.

**What is a pandemic?**

A pandemic is an outbreak of an infectious disease that spreads worldwide, or at least across a large region. Looking at our history, flu pandemics can be expected to occur three to four times each century, when new virus types emerge and are easily passed from person to person.

However, the occurrence of flu pandemics is unpredictable and when the next one does occur it may be nothing to do with the current H5N1 bird flu virus.

**How can we prevent a pandemic?**

H5N1 avian flu in humans is still a rare disease, but actions must to be taken to try and prevent it from being capable of producing a pandemic.

However, as a pandemic is likely to happen at some point in the future it is essential that people are prepared.

The following actions should be taken:

- Scientists must closely watch and study bird flu viruses to learn more about them.
- Wild bird populations need to be monitored.
- Organisations such as the World Health Organization (WHO), the Food and Agriculture Organization (FAO) and the World Organisation for Animal Health (OIE) need to work together to help the world to prepare for a possible pandemic.
- The European Union and its Member States need to work together on research and preparedness plans, as flu viruses will pass all borders.
- All countries and all their citizens need to be involved.



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The ELF was founded by the European Respiratory Society (ERS), with the aim of bringing together patients, the public and respiratory professionals to positively influence respiratory medicine. The ELF is dedicated to lung health throughout Europe, and draws together the leading European medical experts to provide patient information and raise public awareness



**ERS** EUROPEAN RESPIRATORY SOCIETY

every breath counts

This material was compiled with the help of ERS expert, Mark Woodhead.