

Diseases, Disorders and Injuries

Avian Influenza

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What is avian influenza?

Influenza, commonly called "the flu", is a contagious disease caused by viruses that infect the respiratory tract, including the nose, throat, and lungs. Many varieties of influenza viruses exist. Some viruses infect only humans, others only birds, pigs or dogs. Some can infect more than one animal (called "cross-species"). In birds, this disease is called avian influenza or the "bird flu".

Avian influenza has been around for over 100 years. It was first reported as "fowl plague" in 1878 when it caused a lot of deaths in chickens in Italy.

Avian flu can affect the respiratory, gastrointestinal, reproductive, or nervous systems (or combinations of these) in many kinds of birds. The earliest signs of infection in chickens are a loss of appetite and a decrease in egg production. Symptoms of avian flu can range widely from mild illness to a highly infectious disease with up to 100% mortality. Some wild birds and waterfowl (like ducks and geese) can carry the virus without showing signs of infection. Domestic chickens are very susceptible to influenza infections which can easily spread to other chickens and quickly turn into epidemics (in poultry).

NOTE: For information about the common flu in humans, please see the OSH Answers [Influenza](#).

How is avian flu spread between birds?

Avian influenza is mainly spread by direct contact between infected birds and healthy birds. It can also be transmitted when birds come in contact with surfaces, equipment, or materials (including water and feed) that have been contaminated with feces or secretions from the nostrils (nares) or mouth of infected birds.

People can also spread the disease indirectly from farm to farm by carrying the virus on their clothing, boots or vehicle wheels.

Wild birds can carry the many avian influenza viruses without getting ill themselves. However, there have been a few rare situations where wild flocks became ill or where migratory birds infected local poultry flocks along their flight routes.

For more information on how to protect birds from bird flu, see the Canadian Food Inspection Agency's "[Protect your flock from bird flu](#)" document.

Are all avian influenza viruses equally dangerous?

No. Avian influenza viruses can be classified as low pathogenic avian influenza viruses and high pathogenic avian influenza viruses.

Low pathogenic avian influenza (LPAI) means that the virus causes a mild disease like ruffled feathers and decreased egg production.

High pathogenic avian influenza (HPAI) causes severe disease and is extremely contagious. HPAI can cause up to 100% of an infected flock to die.

Low pathogenic avian influenza (LPAI) viruses can change into high pathogenic avian influenza (HPAI) viruses. Precautions are therefore recommended regardless of the virus' severity.

What causes avian influenza?

Influenza A viruses cause avian influenza.

Is there more than one kind of influenza virus?

Yes. The influenza virus belongs to the family of orthomyxoviruses which has four types of influenza viruses: A, B, C and D.

Only influenza A viruses cause flu in birds. Influenza A viruses have been found in wild and domestic birds from around the world. The majority of viruses have been found in waterfowl (e.g., ducks, geese, gulls, and terns) and domestic birds (e.g., chickens, turkeys, ducks, geese, pheasants and quail). There are many distinct varieties of avian influenza A viruses but most do not cause any disease symptoms.

Influenza A viruses can also infect people, pigs, hogs, dogs, horses, seals, whales, otters, skunks, coyotes, bears, foxes, and mink. New influenza A viruses may cause epidemics and pandemics.

Influenza B viruses are usually only found in humans. Influenza type B viruses can cause human epidemics but they have not caused pandemics.

Influenza C viruses cause mild symptoms in humans and do not cause epidemics or pandemics. Influenza C viruses have also been found in pigs and dogs.

Influenza D viruses affect cattle and are not known to cause illness in people.

What is meant by the H5N1 or H7N9 virus?

Influenza A viruses are classified into subtypes, and each subtype is further divided into strains.

The H and N letters refer to the different kinds of proteins found on the outside surface of the influenza virus. The various subtypes of the influenza A virus depend on the kinds of proteins that stick out from the surface of the virus – the haemagglutinin or HA protein and the neuraminidase or the NA protein. The body's immune system can make antibodies that can recognize these specific virus proteins (antigens) and, therefore can fight that specific influenza virus.

Researchers have found 18 kinds of HA proteins and 11 NA proteins in many combinations in bird flu viruses. These combinations are reported as subtypes of the influenza virus H(number) N(number). For example: H7N1, H9N2, H5N1, H7N9, etc. Small changes to the surface proteins create the different subtypes.

Can people get avian influenza?

Avian influenza viruses do not usually infect people. Most cases of infection in people are believed to be the result of direct contact with infected poultry or contaminated surfaces. Two types – H5N1 and H7N9 – have been responsible for most human illnesses worldwide to date.

Among all the avian influenza viruses that have caused illness in people, the subtype H5N1 has been associated with very serious illnesses and death. The [Public Health Agency of Canada](#) states that although human infections with this virus are rare, people who do become infected can become seriously ill and may die.

How does avian flu spread to humans?

While rare, avian influenza in humans is mainly caused by contact with:

- Infected chickens or other birds,
- Droppings, manure, and litter having high concentrations of avian influenza virus,
- Contaminated surfaces,
- Contaminated air (e.g., from droplets, dust, feathers, etc.)
- Contaminated vehicles, equipment, clothing and footwear at farms where there are infected birds, and
- Other infected animals or people (extremely rare).

The virus does not spread easily from birds to humans or from human to human. However, there have been very rare cases when the avian virus has spread from one ill person to another, but the transmission beyond that person has been limited.

What precautions can workers take?

People working or in contact with animals or people suspected of being infected with avian influenza (e.g., poultry workers, individuals culling birds, health care workers, etc.) should use appropriate control measures.

- Work outdoors or in well-ventilated indoor environments whenever possible.
 - Wash hands with soap and water for at least 20 seconds after working with the birds, touching shared equipment or high-touch surfaces, coughing or sneezing, removing personal protective equipment (PPE), and at the end of the shift. If soap and water are not available, use hand sanitizer containing at least 60% alcohol.
 - Wash all clothes and shower after the work shift.
 - Avoid touching the face, especially with unwashed hands.
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- Wear appropriate personal protective equipment (PPE) (e.g., respirators or masks, goggles, face shields, impervious gloves, coveralls, gowns, and boots). N95 respirators or other masks that offer equal or greater protection are recommended in heavily contaminated environments (i.e., when the risk of exposure is high), and wearers must be fit tested.
 - Consider situations when 2 layers of protection decrease exposure risk (e.g., double gloves, boot covers over boots).
 - Appropriately dispose of or adequately disinfect PPE after use and do not share these items. If reusing PPE, wash immediately after use.
 - Do not use PPE from one farm or work site at another farm or work site.
 - Do not reuse disposable gloves. Dispose of used PPE in designated sealed plastic bags.
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What are the symptoms of avian flu in people?

The symptoms are similar to those of human influenza and can include fever, cough, aching muscles, headache, sore throat, eye infections (conjunctivitis), and serious respiratory infections, including pneumonia.

Some people can be infected by an influenza virus but experience no symptoms or develop only mild symptoms. Some infections result in severe symptoms and can lead to death.

Can people get avian influenza from eating poultry infected with influenza?

No. Avian influenza is not spread by cooked food. There is no evidence to suggest that eating cooked poultry or eggs could transmit the virus to humans. While the World Health Organization recommends proper cooking as a good general practice, it is even more important in countries that have a current outbreak of avian influenza. The virus can be killed by heat so poultry should be cooked to an internal temperature of 75 °C (165 °F) to make sure they are safe to eat. Eggs should also be thoroughly cooked (no runny yolks).

[Food and kitchen hygiene](#) are also important. Be sure that juices from raw poultry or poultry products do not touch or mix with other foods that will be eaten raw. Always wash your hands thoroughly and disinfect surfaces after touching poultry products.

Can the avian influenza turn into a human flu pandemic?

Typically, an influenza [pandemic](#) occurs when a new influenza A virus appears. As noted earlier, avian influenza does not spread easily or rapidly among humans. This characteristic does not lead to favourable conditions for a pandemic. Health officials monitor avian influenza outbreaks closely.

Bird owners in Canada have a responsibility to report any bird diseases to their veterinarian and to the Canadian Food Inspection Agency (CFIA) Animal Health office.

What are my options for vaccination or antiviral medication?

There is not an avian flu vaccine available in Canada for public use.

A vaccine for H5N1 is authorized in special use cases (e.g., first responders). Seasonal influenza vaccines do not offer protection against avian flu but can reduce the likelihood of dual infection with avian and human influenza viruses (which may help prevent the emergence of a novel pandemic strain). The National Advisory Committee on Immunization (NACI) recommends the seasonal influenza vaccine for workers in direct contact with poultry infected with avian influenza during culling operations.

Some antiviral agents may be useful in the treatment of illness. Individuals who are at high risk of exposure may be able to receive antivirals before exposure occurs (pre-exposure prophylaxis). Never self-diagnose or self-prescribe medication.

See the OSH Answers [Hand Washing - Reducing the Risk of Common Infections](#) for more details.

Other steps you can take for personal hygiene are listed in [Good Hygiene Practices - Reducing the Spread of Infections and Viruses](#).

What to do if I become sick with avian flu?

If experiencing symptoms of avian flu, take time away from work, follow steps to avoid spreading the virus to others (e.g., wear a well-constructed, well-fitting mask when around others in indoor settings), and seek medical care. Follow the advice from your healthcare professional and local public health authority.

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