



## FAQ: Zoonotic risk of avian influenza

### **What is avian influenza?**

Also known as bird flu, avian influenza is a contagious viral disease affecting poultry and wild birds, often resulting in severe animal health and economic consequences. While avian influenza viruses are highly species-specific, on certain occasions they have crossed the species barrier and have been isolated from mammalian species, including humans.

These viruses are classified into subtypes based on two surface proteins, the hemagglutinin (HA) and neuraminidase (NA). For example, a virus that has HA 7 protein and NA 9 protein is designated as subtype H7N9. At least 16 hemagglutinins (H1 to H16), and 9 neuraminidases (N1 to N9) subtypes have been found in viruses from birds.

The different viral strains are categorised as High Pathogenic Avian Influenza (HPAI) strains or as Low Pathogenic Avian Influenza (LPAI). Infections caused by a HPAI virus can lead to high mortality in poultry, while infections with a LPAI virus are usually mild or even inapparent in birds.

Infection usually occurs due to direct contact between birds and/or exposure to saliva, mucous, or faeces from infected birds. Wild bird migration plays an important role in the geographic dispersal of the virus. In the past, the presence of the HPAI virus in Europe usually followed a seasonal pattern: the number of outbreaks was typically lowest in September, began to rise in October, and peaked in February. Several factors can drive these dynamics, such as the wild bird migration patterns, (unregulated) trade, farming systems, biosecurity and immunity status. However, since 2021, an epidemic of HPAI is ongoing in the European Union, both in poultry and in wild birds. The avian influenza virus seems to have become endemic (i.e. constantly present) in wild bird populations in Europe. This implies that in the current situation the health risk for poultry and avifauna remains present all year round.

### **What is the current situation in Belgium in wild birds?**

During the summer of 2022, numerous outbreaks of HPAI in wild birds were detected in Flanders, mainly on the coast, but also on other European coastal regions, mainly affecting populations of black-headed gulls, great black-backed gulls and sandwich terns. In autumn 2022, an upsurge in cases was observed in Wallonia. The most striking events affected three municipalities where populations of released pheasants were infected. The presence of a high density of released pheasants susceptible to infection may have served as a virus amplifier. These outbreaks have led to a local ban on hunting to limit the spread of the virus, in addition to an increased surveillance. Since January 2023, the epidemic continued to progress in wild bird populations in Belgium. Many black-headed gulls are found dead near the Meuse and the Schelde. Other bird species are also infected with avian influenza, such as waterfowl (e.g. mallards and Canada geese) and raptors (e.g. peregrine falcons).



Detailed figures about the avian influenza cases in Belgium can be found on the following website:  
<https://www.sciensano.be/en/health-topics/avian-influenza/numbers>

### **What is the current situation in Belgium in kept birds?**

There have been a relatively large number of infections of HPAI in the poultry sector in Belgium during the season 2022-2023: between September 2022 and 23/02/23 this has amounted up to 32 holdings, including 18 professional farms, 13 private owners and 1 zoological park.

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### **Who is responsible for the monitoring of avian influenza virus in BE?**

The FASFC is responsible for the monitoring of poultry and captive birds in Belgium. More information about the current situation and measures can be found on the following website: :  
<https://www.fasfc.be/animalsanimal-healthanimal-diseasesavian-diseasesavian-influenza/situation-belgium>

The monitoring of wildlife is a regional competence in Belgium.

More information for the Flemish region can be found on the following website:  
<https://www.natuurenbos.be/vogelgriep>

More information for the Walloon region can be found on the following website:  
<https://www.wallonie.be/fr/actualites/vigilance-face-la-grippe-aviaire>

More information for the Brussels Capital Region can be found on the following website:  
<https://leefmilieu.brussels/burgers/het-milieu-brussel/dierenwelzijn-garanderen/vogelgriep-gezondheidsvoorschriften>

### **Can the avian influenza virus infect other animal species than birds?**

Yes, the avian influenza virus causing the current concerns can infect other animal species (humans included) although this is rather uncommon. Since the beginning of the pandemic of HPAI in wild birds, individuals from several mammal species have been found positive for HPAI in Europe. Most cases appeared in wildlife species such as red fox, European polecat, Eurasian otter, lynx, dolphins, seal, etc, while fewer events were observed in domestic species such as ferret, cat, American mink and dogs. It is known that felids and mustelids are particularly susceptible to HPAI infection. Also in Belgium some avian influenza infections in mammals have been found, namely in wild foxes, wild European polecats and domestic ferrets. In all cases, this was probably due to close contact with large amounts of virus, either by eating infected bird carcasses or following intense contact with infected hobby poultry. The closer and more frequent the contacts are between the two hosts, the more likely it is that



transmission between different species will effectively occur. This occurrence, named spill-over infection, can be facilitated by the rapid genetic evolution of influenza viruses. Whether a virus circulating in one species can infect another species depends, among other things, on the extent to which that virus will adapt to receptors in the new host.

Spill-over infections are not that common. However, the probability of this occurrence could be higher at present due to the intense circulation of avian influenza viruses in wild birds and poultry farms worldwide. In most cases, such an infection passes without symptoms, but severe disease cases may be present, and there is no further spread among the new host-species.

In June 2023 Poland has detected numerous cases of HPAI infection in cats. As these cases have appeared throughout many different regions of Poland, in cats with or without outdoor access, and as no further transmission events to cats living in proximity of the infected ones have been reported, one single origin can be suspected. Investigations are currently underway by Polish authorities to understand the outbreak, determine the links between cases, identify routes of exposure, conduct additional testing, and characterize the detected viruses. Initial reports suggest that direct transmission from infected wild birds may not be the primary source. Further analyses are currently carried out to clarify the role of the feed. In any case, raw meat (especially raw poultry meat) should be avoided as feed, as it can be contaminated by several different pathogens. Instead, thoroughly cooked meat remains safe.

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### **Can the avian influenza virus be passed on between mammals?**

Possibly. In Spain there was recently a case of avian influenza infection on a mink farm where the clinical signs and epidemiological investigation were indicative for virus circulation between minks. Genetic analysis of the virus strain confirmed virus adaptations to his new host possibly allowing transmission from mink to mink.

Yet it needs to be noted that mink is a more susceptible host species to avian influenza viruses than most other mammal species. Moreover, mink farms provide ideal conditions for the virus to adapt to a new host because of the huge density of animals in a limited space. Currently, there are no professional mink farms in Belgium.

Also, recent reports of mass death in seals in Peru and in the Caspian Sea due to a proven infection with avian influenza are indicative of a possible virus circulation between seals. The infection from seal to seal is not yet proven, but the scale of deaths is, however, a strong suggestion of it.

Importantly, recent scientific research conducted by Sciensano and the Wageningen Bioveterinary Research Institute (the Netherlands) has shown that the avian influenza viruses, currently circulating in Europe, do not yet have all the genetic adaptations needed to allow sustainable transmission



between mammals (including humans, see below). This is an indication that the probability of efficient and massive transmission among mammals stays currently rather low.

Possible adaptation of the virus to mammals is mainly depending on the efficiency of virus replication in the new host and the frequency of contacts of this host with other individuals. Considering this, the probability of adaptation to mammals in Belgium is currently low because of the fact that most infections occurred in wild carnivores (mainly foxes) which have a predominantly solitary social behaviour.

In short, constant vigilance is needed, but so far there is no reason for serious concern in Belgium.

Contact between pets (dog, cats and ferrets) and wild bird cadavers should be avoided. Pet owners who find dead or sick wild birds are urged not to touch them, to avoid contact with their pets, and to notify the competent institutions (Influenza call centre 080099777 or for Wallonia on 1718 (FR) or 1719 (DE)). People who find a sick or dead seal can report that on telephone number 0477345890.

### **Can the avian influenza virus infect humans?**

Similar as described for mammals, also humans can occasionally be infected with avian influenza viruses. Worldwide, there are some rare examples of this phenomenon (see <https://www.ecdc.europa.eu/en/avian-influenza-humans/facts>). Again, this infection occurred during an intense contact between humans and infected birds or heavily contaminated environments. Until now there is no evidence of adaptation of the avian influenza virus to humans, which means that the virus is not specifically targeting human cell receptors. Infection of humans with avian influenza must always be taken seriously and must be accompanied by strict isolation and biosecurity measures until clearance of the virus.

Adaptation of the avian influenza virus to other mammals, as it was possibly the case in minks in Spain, is a major risk factor for adaptation of the virus to humans and must be taken seriously. Humans are genetically closer to other mammals than to birds, usually allowing an easier spread from other mammal species to humans.

People who find dead or sick wild birds are urged not to touch them and to notify the competent institutions for the appropriate instructions by telephone to the Influenza call centre 080099777 in Flanders and Brussels Capital Region or for Wallonia to 1718 (FR) or 1719 (DE). See also FAQ '**How to handle carcasses of wild birds?**'

People who find a sick or dead seal can report that on telephone number 0477345890.

For further information on possible human infections with avian influenza and the recommendations for public health, we advise to also consult the website of the following competent institutions:

- ECDC: <https://www.ecdc.europa.eu/en/avian-influenza>
- WOA: <https://www.woah.org/en/disease/avian-influenza/#ui-id-5>
- Sciensano: <https://www.sciensano.be/en/health-topics/avian-influenza#avian-flu-and-humans>



### **Can animals be vaccinated against avian influenza?**

Yes, some vaccines against avian influenza for use in poultry have recently been developed. In the European Union there is currently only 1 licensed vaccine for use in birds. However, this inactivated vaccine is based on an old strain, and it is not clear if it confers sufficient protection against the strains circulating at present. However, clinical trials in poultry are currently being conducted with different types of vaccines developed from currently circulating HPAI strains. Also, vaccination has some limitations. The main one is that, while vaccination protects poultry well against disease, it presumably does not prevent virus transmission. Vaccinated poultry could therefore still transmit the virus among themselves, without any symptoms. As a result, the virus could continue to circulate under the radar in farms, thereby increasing the risk of its spread to animals and humans. Furthermore, influenza viruses tend to evolve rather rapidly. This would demand regular monitoring of the circulating strains and frequent adaptation of the vaccines to assure constant protection against them (as it is already done for flu in humans).

### **Is it safe to consume poultry meat and eggs?**

Yes. People cannot contract an infection by avian influenza virus from eating poultry meat or eggs that has been cooked properly. However, as a general precautionary measure, animals that are sick or have been culled as a result of the implementation of control measures in response to an avian influenza outbreak and their products are not allowed to enter the human food and animal feed chain.

Likewise, poultry vaccinated against avian influenza and their eggs can be safely consumed. The withdrawal period of the current vaccines is zero days, which means that the vaccines do not contain any ingredients that are likely to pose a risk for consumers of vaccinated birds.

### **How to handle sick birds and carcasses of wild birds?**

Bird carcasses must be reported in Flanders and Brussels Capital Region to the influenza call center 080099777, and in Wallonia to 1718 (FR) or 1719 (DE). The telephone service will transmit the information provided to the competent authorities, which will collect the carcasses if a laboratory analysis is necessary.

Carcasses that are not collected for examination, have to be removed by the owner or manager of the site via a rendering company (Rendac). It is necessary to evacuate the carcasses, for two reasons, to reduce the risk of contamination of other birds and mammals (mainly ornithophilous birds of prey) but also for public health reasons.

As an occasional human infection is possible when close contact with a large amount of virus particles occurs, it is important that appropriate protection measures are taken by all persons who come into contact with sick and dead wild birds. Predators (such as foxes and mustelids) can also be infected with bird flu by eating infected birds, so the same precautions apply here.

- ✓ Try to minimize handling of sick or dead birds
- ✓ Never allow children to handle sick or dead birds



- ✓ Always wear disposable gloves and a mouth mask when handling carcasses and sick birds.
- ✓ Persons with reduced immunity are advised not to not manipulate sick or dead birds.
- ✓ If transport of carcasses is necessary, pack the carcasses in a sturdy, closed plastic bag and transport the carcasses in a trailer, top box or trunk (so not in the car itself), and clean the trailer/top box/trunk after use.
- ✓ If transport of sick birds is necessary, they can be transported in a plastic container with air inlet or cardboard box. Preferably place the box in the trunk of the car, a trailer or top box during transport. If that is not possible, wear a mouth mask during the car ride. Cardboard boxes can be disposed of via paper waste. A plastic container must be cleaned and disinfected for reuse.
- ✓ Always wash hands, forearms and nails with soap or disinfectant and water after each manipulation and certainly before handling food.
- ✓ Wash your clothes, dispose the gloves and disinfect your boots or shoe soles.
- ✓ People who feel sick after having a risk contact are advised to contact a general physician.

#### **What about feeding birds when bird flu is circulating in wild birds?**

Even though the bird flu virus is circulating in birds living in the wild in Belgium, you can continue to feed garden birds via e.g. a feeding table or silo. However, by offering food you naturally increase the risk that an infected bird can infect other birds.

Please make sure that any domesticated birds such as kept chickens, ducks or geese cannot come into contact with the feeding places and faeces that are located around these feeding places!

#### **What about waterfowl hunting when avian influenza is circulating in wild birds?**

When the federal government declares the confinement obligation for kept birds, hunting with birds of prey is de facto not allowed. Waterfowl hunting with a rifle remains possible within the demarcated hunting opening times.

Because bird populations are under pressure due to the highly pathogenic bird flu outbreak, it is important that the hobby hunter adjusts his shooting. A reduction in hunting pressure not only results in less additional mortality in the bird populations, but also less disturbance for the birds. This also results in reduced contact between humans and other mammals (e.g. hunting dogs, etc.) and wild birds, which is also strongly recommended in the event of an outbreak of highly pathogenic avian influenza.

If waterfowl is still being hunted, follow the following biosecurity measures:

- ✓ Wear gloves and a mouth mask when handling carcasses.
- ✓ Disinfect the material used.
- ✓ Avoid contact with domestic poultry or birds for up to 4 days after handling wild bird carcasses.



During a period of confinement due to high pathogenic avian influenza and when the circulation of the virus among wild birds remains high, hunters are recommended to avoid releasing birds for hunting purposes. After all, the release of a large number of birds in the same place during the same hunting season leads to a high density of individuals, thus increasing the risk of transmission of the avian influenza virus.