

# AVIAN INFLUENZA



## What is Avian Influenza?

The avian influenza viruses (AIVs) belong to the family Orthomyxoviridae and are highly contagious viral diseases of birds. Avian influenza viruses are classified as high pathogenicity (HPAI) or low pathogenicity (LPAI) based on the ability of the strain to produce disease and death in chickens. Natural infections of LPAI typically cause no symptoms or tissue lesions in wild birds. In poultry, LPAI infections can be asymptomatic or cause mild symptoms. Several subtypes of avian influenza viruses can mutate or evolve into HPAI. The current 2021 H5N1 outbreak is the deadliest AIV outbreak in USA and European history.

## What Are the Natural Hosts of Avian Influenza?

AIVs infect over 100 different bird species globally. Natural reservoirs of the viruses include ducks, swans, geese, terns, shorebirds (including storks, plovers, and sandpipers), and gulls. Wild birds, especially dabbling ducks (mallards, pintails, and widgeons) may be infected in the gastrointestinal and respiratory tracts with no symptoms. AIVs spread rapidly through populations of wild waterfowl as they congregate prior to migration annually.

## Does Avian Influenza Affect Other Species?

Since LPAI naturally circulates in wild birds, spillover can occur into atypical hosts in contact with these birds or their feces. Aberrant hosts include poultry (chickens, turkeys, pheasants, quail, domestic ducks, geese, and guinea fowl), pigs, wild mammals, and humans. After transmission to poultry, LPAI may lose its adaptation to wild birds preventing reinfection. However, in some cases (as in the current 2021 outbreak), infections in poultry can spill back into wild birds resulting in further geographic spread as the birds migrate.

## How is Avian Influenza Transmitted?

Shedding occurs primarily in the feces, as well as through oral and nasal secretions. Transmission is through the oral-fecal route and can occur from direct contact with infected birds or indirectly through contaminated feed, water, clothing, and equipment.



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*Immediately isolate any birds with signs of illness, such as this hen having difficulty breathing.*

## What Are the Symptoms of Avian Influenza in Birds?

LPAI infections can be asymptomatic or cause mild symptoms in poultry and are most commonly associated with a mild primary respiratory disease, fluffed feathers, reduced egg production, and low death rates. HPAI, on the other hand, can cause acute high death rates (up to 90-100% in chickens, often within 48 hours). Symptoms of HPAI in poultry include sudden death, severe depression, anorexia, neurologic disease (twisted neck, swimming in circles, tremors), corneal edema, lethargy, reduced appetite, decreased egg production, irregular eggs (e.g. soft, thin shelled, misshapen), difficulty breathing, nasal discharge, coughing, sneezing, diarrhea, and swelling (head, comb, eyelids, wattles, legs) with purple discoloration.

Symptoms in parrots and wild birds are similar and can include lethargy, depression, neurologic deficits (imbalance, wobbly gait, twisted neck), corneal edema, dark green feces, diarrhea, upper respiratory discharge, difficulty breathing, and death.



*Wash hands before and after contacting poultry.*



*Sick chicken in isolation.*

## What Preventive Measures Can be Taken for Backyard Flocks?

Basic biosecurity principles should be followed for backyard poultry flocks to help prevent infection with avian influenza. This includes:

- Quarantine of newly acquired birds: New birds should be housed separately from the general population with no contact or shared equipment for at least 6 weeks.
- Monitoring for signs of illness: Isolate sick birds and seek veterinary care and testing.
- Clean and disinfect enclosures and equipment regularly.
- Limit visitors: Only allow people caring for the flock (e.g. family, friends) to interact with the birds. Make sure all participants follow biosecurity principles. Avoid having people with separate flocks interact with your flock.
- Prevent movement of birds: Avoid exhibitions/fairs, poultry swaps, poultry shows, and other poultry events.
- Wash hands before and after contacting poultry.
- Consider a foot bath OR dedicated pair of shoes for working in the poultry area.
- Change clothes or wear protective outer garments when working with the birds.



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The two biggest risks to the backyard flock are from waterfowl and other poultry. Waterfowl are less likely to encounter backyard flocks unless there is a pond or large amount of acreage. Songbirds and other visitors to the backyard (crows, pigeons/doves) are less likely to be infected with AIVs including HPAI. However, due to the variety of species that can be infected by AIVs, including wild mammals, care should be taken to avoid contact of all wild animals with the flock. Specific measures to protect the backyard flock from avian influenza include:

## 1. Prevent cross-contamination with other flocks:

- Avoid having people with separate flocks interact with your backyard flock.
- Do not share equipment.
- Avoid use of soiled egg cases and do not reuse cardboard egg cases between different flocks.
- Do not acquire new birds from various sources: Avoid purchasing or adopting new birds from feed stores, local farms, or other backyard flocks. Only purchase young birds from a hatchery that is certified “avian influenza clean” through the USDA National Poultry Improvement Plan.
- Avoid going to places with other poultry (e.g. feed stores, fairs, poultry shows, livestock auctions, etc).
- Don’t handle birds from other flocks.

## 2. Prevent contact with free-ranging wild birds/animals:

- Prevent nesting/shelter seeking
  - Build structures with shorter eaves or no overhangs/ ledges.
  - Fill small burrows, tunnels, or holes with gravel.
  - Repair any holes or tears in barn/coop walls.
  - Set-up exclusionary screens/netting: Small gauge is preferred; 1” openings excludes most bird species.
- Reduce water access
  - Remove standing water (even small pools) through proper grading or filling areas where water stands for more than 24-48 hours after rain.
  - Ponds: If present, consider using a boat, bird deterrent balls, noise makers, or predator decoys to discourage wild birds.
  - Do not offer bird baths around the coop/run.



*Prevent contact with free-ranging wild birds/animals.*



*Neighbor's chickens near your flock could easily expose them to infectious disease.*



*Only purchase young birds from a hatchery that is certified “avian influenza clean” through the USDA National Poultry Improvement Plan.*

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- Reduce food sources
  - Mow grass frequently to less than 3 inches.
  - Keep fruit trees and other edible plants farther away from the coop/run.
  - Remove fallen fruit.
  - Avoid grass, weeds, and shrubbery next to the run to prevent wildlife seeking shelter.
  - Do not feed wild birds/wildlife near poultry (i.e. no bird seed, suet, corn, etc.)
  - Prevent access of wildlife to stored feed: Store feed in a lidded container, and sweep up feed spills immediately.
  - Keep compost and garbage away from poultry and prevent wildlife access: Secure composting material with bird wire and gates.
- Reduce fecal contamination
  - Shade cloth over the top of the run can prevent wild bird droppings from falling into the run area.
  - If covering the entire area is not desirable, place food/ waterers under cover to prevent fecal contamination from wild birds.
  - Do not store extra equipment outside: Cleaned equipment should be stored in a garage/barn/basement until needed.
  - Cover large troughs/swimming pools used for domestic waterfowl: Cover these areas with a tarp/lid when not in use. Drain and refill frequently to keep swimming sites clean.

- Keep backyard flocks confined in the coop/run
  - Keep poultry away from ponds and ditch water.
  - Avoid free range foraging in areas where wild birds, especially waterfowl, have access.

Vaccination of poultry is not allowed in the USA at this time due to impacts on international trade, as vaccinated birds cannot be distinguished from infected birds through testing. There are no effective treatments against high pathogenicity avian influenza, so prevention is essential for this disease!

## What Preventive Measures Can be Taken for Pet Birds?

Preventive measures are similar for pet birds spending time in outdoor aviaries. Prevent contact with wild birds and mammals by cleaning food spills, not encouraging feeding of wildlife nearby (e.g. no bird feeders), not offering wild bird baths, avoiding high grass/shrubbery around the aviary, and covering the top with shade cloth or a solid cover to prevent contamination within the aviary with wild bird feces.

## What Should You Do if You Suspect Avian Influenza in Your Bird?

If your birds are sick, contact an avian veterinarian. For backyard poultry, if there is a high suspicion for avian influenza, the state veterinarian may be contacted to conduct testing. If HPAI is diagnosed, your physician should be contacted to determine the risk to you and your family.



*Demonstration of covered food option to reduce potential of contamination with wild bird feces.*



*Set-up exclusionary screens/netting: Small gauge is preferred; 1" openings excludes most bird species.*



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## AAV: Setting a Standard in Avian Care Since 1980

Avian medicine is a distinct and very specialized field that requires extensive training, advanced skills, and facilities specifically designed and equipped to treat and hospitalize birds. The Association of Avian Veterinarians was established to provide veterinarians with this special education, and to keep them up to date with the latest information on bird health. The AAV holds an annual conference on avian medicine and publishes the peer-reviewed *Journal of Avian Medicine and Surgery*. AAV also makes annual contributions toward avian conservation and sponsors studies advancing the understanding of avian medicine.

## For More Information

For more information on birds, ask your veterinarian for copies of the following AAV Client Education Brochures:

- Avian Chlamydiosis and Psittacosis
- Veterinary Care for Your Pet Bird
- Basic Care for Companion Birds
- Behavior: Normal and Abnormal
- Caring for Backyard Chickens
- Caring for Ducks
- Digital Scales
- Feather Loss
- Feeding Birds
- Foraging for Parrots
- Injury Prevention and Emergency Care
- Managing Chronic Egg-laying in Your Pet Bird
- Signs of Illness in Companion Birds
- Ultraviolet Lighting for Companion Birds
- When Should I Take My Bird to a Veterinarian?
- Zoonotic Diseases in Backyard Poultry

Scan to view AAV's Bird Owner Resources web page!



## Online Resources

Visit AAV's web page on Avian Influenza for more great resources and information: [https://www.aav.org/avian\\_influenza](https://www.aav.org/avian_influenza)

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Our website, [www.aav.org](https://www.aav.org), offers a Find-a-Vet tool to help pet bird owners locate avian veterinarians around the world. We also offer a variety of resources such as basic bird care instructions and more. Visit the website today!

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Scan to view AAV's Avian Influenza Resource page!



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Association of Avian Veterinarians

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