

## Avian Pneumovirus/Avian Rhinotracheitis

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### Etiology

Avian pneumovirus (APV), avian rhinotracheitis (ART), or swollen head syndrome (SHS) are clinical diseases caused by the avian metapneumovirus (aMPV), a single-stranded RNA virus in the *Paramyxoviridae* family. aMPV is classified into 4 subtypes (A, B, C, D) based on differences in the genetic code due to regular viral recombination and replication. Subtypes A and B cause disease in chickens and turkeys, and Subtype C primarily effects turkeys.

aMPV is more stable at lower temperatures than high temperatures, with it remaining stable for 12 weeks at 4°C compared to 6 hours at 56°C. aMPV remains virulent at a pH of 3 to 9. It is susceptible to most disinfectants.

### Epidemiology and Transmission

Avian pneumovirus and avian rhinotracheitis infections have been reported worldwide, with different subtypes being more prevalent in certain areas. aMPV-B is most commonly isolated from poultry flocks in Ontario. Migration of wild birds may have a role in global aMPV spread. In Ontario, approximately 44% of waterfowl are seropositive for aMPV-C.

The only route of transmission that has been confirmed in research is horizontally via direct contact with contaminated material (e.g. consuming of contaminated drinking water, inhalation of aerosol particles, etc.). Wild birds can introduce the virus to the environment.

### Clinical signs

- Nasal discharge
- Snicking, coughing
- Open-mouth breathing
- Conjunctivitis

- Swelling of sinuses
- Torticollis
- Opisthotonus
- Reduced egg production
- Increased mortality

## Treatment

Evaluation of birds by a veterinarian is necessary to rule out other respiratory illnesses, and ensure appropriate steps are taken. An aMPV infection allows for secondary infections that may require additional treatment.

Good barn management can reduce the severity of an aMPV infection. If you have questions about how to manage your barn after an aMPV breakout, reach out to speak to a veterinarian.

## Prevention

There are currently no commercial aMPV vaccines approved for use by the CFIA. There are live attenuated and inactivated vaccines for aMPV-A and aMPV-B licensed for use in Europe. CFIA began accepting applications for emergency importation of these vaccines in March 2025, vaccines are likely to be available by Q3.

Biosecurity measures are crucial for preventing spread of this highly contagious virus. This includes preventing interaction of wild birds with commercial flocks, controlled access points to farm/barn, and mortality and manure management. Barn management, such as ventilation, temperature, litter quality, water quality, and stocking density are also important in preventing disease.

## Resources

Graziosi, G., Lupini, C., Catelli, E. Disentangling the role of wild birds in avian metapneumovirus (aMPV) epidemiology: a systematic review and meta-analysis. *Transboundary and Emerging Diseases*. (2022); 69: 3285-3299. doi: <https://doi.org/10.1111/tbed.14680>

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Kaboudi, K., Lachheb, J. Avian metapneumovirus infection in turkeys: a review on turkey rhinotracheitis. *Journal of Applied Poultry Research*. (2021); 30: 100211. doi: <https://doi.org/10.1016/j.japr.2021.100211>

Mo, J., Mo, J. Infectious laryngotracheitis virus and avian metapneumovirus: a comprehensive review. *Pathogens* (2025); 14: 55. doi: <https://doi.org/10.3390/pathogens14010055>