

## Inclusion Body Hepatitis (IBH)

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### Etiology

Inclusion body hepatitis (IBH) is caused by a species of fowl adenovirus (FAdV), a double-stranded DNA virus. There are several disease-causing viruses in the *Adenoviridae* family, each of which are classified into five species (A-E) based on genetic differences. IBH is caused by FAdV-D and FAdV-E. Within these classifications, there are nine serotypes, which are further classified into different strains that each vary in their virulence.

The temperature resistance of FAdV depends on the strain, with some strains being able to survive temperatures of 56°C for 18 hours. Generally, they can survive in a pH of 3 to 9.

### Epidemiology and Transmission

Cases of IBH have been reported globally. Chicken broilers are primarily affected.

FAdV can be readily transmitted vertically (i.e. from broiler breeder to broiler chick), or horizontally (i.e. between flock). Horizontal transmission is usually via the fecal-oral route. Flocks as young as 7 days old can show clinical signs of IBH, but typically infections occur in birds 21 to 35 days old. As chickens get older, they become more resistant to clinical infection.

### Clinical signs

- Lethargy
- Reduced feed intake
- Yellow feces
- Ruffled feathers
- High mortality

## Treatment

There is no specific treatment for IBH. Culling of any sick birds to reduce the spread of the virus is recommended.

Washing and disinfecting the barn is essential for reducing the pathogen load on the subsequent flock. Since the virus is shed in the feces at high amounts, manure should be moved as far as possible from the barn before placement of the next flock.

## Prevention

Prevention in broiler breeder flocks is crucial, as older birds may not show clinical signs of IBH but can transmit the virus to chicks, causing a clinical infection in those flocks. There are a variety of vaccines available for prevention of IBH. For broiler breeder flocks, autogenous vaccines are recommended for the best protection and least risk of vertical transmission of the virus.

## Resources

Dar, A., Gomis, S., Shirley, I., Mutwiri, G., Brownlie R., Potter, A., Gerdt, V., Tikoo, S.K. Pathotypic and molecular characterization of a fowl adenovirus associated with inclusion body hepatitis in Saskatchewan chickens. *Avian Diseases* (2012); 56: 73-81. doi: <https://doi.org/10.1637/9764-041911-Reg.1>

El-Shall, N.A., El-Hamid, H.S.A., Elkady, M.F., Ellakany, H.F., Elbstawy, A.R., Gado, A.R., Geneedy, A.M., Hasan, M.E., Jaremko, M., et al. Epidemiology, pathology, prevention, and control strategies for inclusion body hepatitis and hepatitis-hydropericardium syndrome in poultry: a comprehensive review. *Frontiers in Veterinary Science* (2022); 9: 963199. doi: <https://doi.org/10.3389/fvets.2022.963199>

Fitzgerald, S.D. Diseases of Poultry. *John Wiley & Sons Inc.* (2013). pg. 576-650. doi: <https://doi.org/10.1002/9781119371199>