



Felid Taxon Advisory Group and Nutrition Advisory Group – Updated Nutritional Guidance for Managing the Risk of Infection with Highly Pathogenic Avian Influenza (HPAI) H5N1 in Felid Species

Approved by the AZA Animal Health Committee and Veterinary Scientific Advisory Group
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Increased cases of Highly Pathogenic Avian Influenza (HPAI) H5N1 strain in poultry, dairy cows, and zoo species have been reported recently, as well as continued occasional cases in humans exposed to infected animals and animal products. Fatal cases in non-domestic and domestic felids also continue to be reported. This update serves to give guidance for managing the ongoing risk of this disease to non-domestic felids in human care in zoological institutions, specifically including food sources.

Ingestion of infected food continues to be the main route of transmission for non-domestic felid species, but this can originate from multiple sources and species. Capture and ingestion of wild birds is a common mode of transmission in zoo felids. Ingestion of raw meat and other animal products from infected sources is also possible. While cooking meat to a sufficient temperature (165°F or 75°C) will kill the virus, freezing does not. Wild birds shed the virus in their feces, therefore it is important to practice biosecurity and prevent contamination of food directly or indirectly by tracking fecal material into areas housing susceptible species. Gathering appropriate information in order to perform a risk assessment at each institution and for each enclosure is paramount.

Commercial poultry is closely regulated by federal governments, and in the USA, commercial vendors will typically be part of the National Poultry Improvement Plan (NPIP). This plan includes voluntary testing for Avian Influenza and other important diseases, so in the case of an outbreak, the disease should be detected and reported quickly, leading to action by state and federal officials to prevent infected poultry from entering the food chain.

In early 2024, it became known that dairy cows can become infected with a reassortant virus termed HPAI H5N1 B3.13. Since that identification, numerous cases in dairy farms have been found across North America. In dairy cattle, a key lesion is viral mastitis, and infected dairy cows shed virus in colostrum and milk while showing mild clinical signs. The virus has also been identified in muscle meat from infected dairy cows, however at typically low levels. In the US, testing of milk and now meat is being performed in dairy cows for the presence of the H5N1 virus, however not every cow going to market is currently tested.

This updated alert serves to remind felid-holding institutions of the potential risk of HPAI H5N1 infection to felid species in your care through ingestion of infected food and to provide basic precautions and preventative measures to guide preparation and response:

- Poultry products:
 - Get in touch with your vendors and ensure that they participate in national influenza mitigation and prevention plans (NPIP in the US).
 - Ask your vendors questions about their avian influenza mitigation strategies at their farms, such as prevention of wild bird access, biosecurity of workers, monitoring of birds.
 - If eggs are fed out, they should be from commercial sources and hard-boiled before feeding.
- Beef products:
 - Feeding milk to felids is not standard practice, but some facilities do use goat milk for training. Ensure that any milk products used, even in small amounts, are pasteurized.

- It is difficult / impossible to avoid feeding raw (or supplemented) meat to felids and other zoo carnivores. However, it is likely overall a safe source. However, knowing the sources of the meat and the preventative measures of your vendors is vital.
- Ask your vendors questions about their sources:
 - Human market-grade meat is the lowest risk.
 - Beef from meat cows is lower risk than from dairy cows.
- Bones and other products likely carry the same risk as meat.
- Horsemeat products:
 - To date this does not appear to be an appreciable risk for transmission of HPAI, but stay informed as this virus changes over time.
- Wild birds:
 - Avoid feeding free-ranging avian species to zoo felids.
 - Assess enclosures for risk of felids catching and ingesting wild birds.
 - Avoid fecal contamination and contact of felid food by wild birds.

Testing recommendations:

Bird sampling:

- Cloacal swabs are the best sample for testing of birds.
- If felids predate upon wild birds, cloacal swabs can be taken from the birds for testing, if available.

Felid sampling:

- For suspected clinical cases, a nasal swab is the preferred ante-mortem sample.
- Fecal samples are **not** validated for testing in mammals.
- In the event of a felid death, brain and lung tissue are the samples accepted for testing.
- Any samples should be sent to a National Animal Health Laboratory Network (NAHLN) laboratory. All “non-negative” samples will be sent to the National Veterinary Services Laboratory (NVSL) for confirmation.

The Felid TAG and the Nutrition Advisory Group (NAG) recommend that each facility perform a risk assessment of current practices to assess the risk to HPAI H5N1 now and as the outbreak continues.

Keep in mind that this is a zoonotic disease. To date the zoonotic risk remains low, although most cases in humans have been in those with contact with infected animals, so zoo caretakers could be at an increased risk. Stay up-to-date as the virus mutates and the outbreak continues.

Please let the Felid TAG and NAG know if you have suspected or confirmed cases in the zoo felids in your care so that they can provide the most up-to-date information to the AZA community.

For further questions:

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