



## Equine Influenza

**Disease Name:** Equine Influenza (Flu)

**Disease Type:** Upper respiratory disease caused by RNA virus

**Transmission:** The most common form is airborne transmission. Infected horses release infective droplets into the air by coughing or snorting which are then inhaled by horses in close proximity. Horses can also be exposed to the virus by coming into contact with contaminated surfaces such as stalls, wash racks, stocks, water sources, feed, tack, grooming equipment such as wipe rags, and transport vehicles. Humans can spread the virus from horse to horse by contaminated hands and clothing.

**Frequency:** Sporadic - appears annually in the U.S.

**Incubation period:** As short as 24 hours and may be up to 3 days.

**Carrier status:** Horses rarely shed virus after the resolution of clinical signs.

**Shedding period:** Respiratory shedding typically lasts for 7-10 days post infection in horses who were infected for the first time or were unvaccinated. Shedding period is much shorter (~3-5 days) in partially immune horses (previously infected or vaccinated).

**Severity:** Moderate. It is very rare that equine influenza infection would result in a fatal outcome, however horses can be out of performance for 3 weeks and up to 6 months. Younger horses tend to be more severely affected compared to older horses. Secondary bacterial infections can be severe.

### Clinical signs and symptoms:

- Fever, up to 106° F (41.1° C), lethargy, anorexia (off feed), muscle pain/weakness (stiff gait).
- Dry, harsh to hacking cough usually precedes fever. Cough can last up to 6 weeks after all other clinical signs have abated. Influenza should be suspected when multiple horses in a group develop a sudden onset of hacking cough with at least some of the horses having a fever.
- Nasal discharge is initially serous (clear, watery) but occasionally may become mucopurulent (yellow or white) with secondary bacterial infections.
- Secondary bacterial infections are common in horses with influenza.
- Slightly enlarged and mildly painful lymph nodes around the head and neck area.
- May be more severe in donkeys and mules.
- Rarely, clinical signs can include distal limb edema (swelling of the lower legs) and cardiomyopathy (decreased heart function).

**Diagnoses:** Equine Influenza is diagnosed using nasal (preferably nasopharyngeal) swabs, through PCR testing by nasal swab or using an ELISA (enzyme-linked immunosorbent assay). Diagnosis using viral isolation is rare but possible. Diagnosis can also be made by serum sampling during the acute and convalescent stage of the disease to detect a four-fold increase in antibodies, if no vaccination occurred between samples.

**Treatment and management:** Supportive care and rest are the chief treatments. Non-steroidal anti-inflammatory medications, such as phenylbutazone (Bute), flunixin meglumine (Banamine) or firocoxib (Equioxx) are used to control fever, pain, inflammation and improve feed consumption. Antibiotics are



indicated if a fever lasts for more than 3-4 days or if complications such as bacterial pneumonia develop. Horses recovering from Influenza should be restricted from strenuous exercise and be kept in well-ventilated stalls and/or paddocks to reduce inhalation of dust. Wetting of the hay can reduce dust and improve palatability while horses have upper airway inflammation. If the stabling area is dusty during cleaning and re-bedding of stalls, horses should be moved out of the area during this time.

**Prognosis:** Good. Recovery time for mildly affected horses is usually 2-3 weeks. Recovery for severely affected horses can take up to 6 months. Horses affected with Influenza should be restricted from all strenuous activity for at least three weeks in order to allow healing of the respiratory epithelium (tissue that protects the respiratory tract). During that time, horses are extremely susceptible to development of secondary bacterial complications such as pneumonia. If horses are not given adequate rest and appropriate management they can develop chronic reactive airway disease which can compromise their future performance.

**Prevention:** Primary mode of prevention is vaccination. The recommendations for initial and booster vaccinations vary depending on vaccine type; consult your veterinarian. Horses with ongoing risk of exposure (horses that travel often or reside in high-traffic barns) should be vaccinated semi-annually. Equine Influenza is highly contagious and spreads rapidly; any horse showing signs of respiratory disease (cough, nasal discharge, persistent fever) should be isolated immediately until the cause can be determined by your veterinarian.

**Biosecurity:** Equine Influenza is spread via direct contact with airborne droplets from horses snorting or coughing. The virus can travel up to 50 yards (150 feet) in the air so isolation of horses showing clinical signs is imperative. The best method of prevention is to maintain high standards of hygiene in all areas where horses reside or interact and appropriate handler hygiene procedures (including hand-washing with soap) should be performed between each horse or group of horses. Additionally, the pathogen can survive on clothing, hands, equipment, brushes, water buckets, stall walls, feed troughs, and horse trailers so regular cleaning followed by disinfection and maintaining separate equipment for each horse is recommended.