

## Diseases Transmitted by Horses

Our topics for this week are:

- Zoonotic diseases of horses
- Sanitary practices for preventing zoonotic diseases

Apparently healthy horses pose little risk of transmitting disease to healthy adult handlers who practice conventional personal hygiene. The risks of physical injury are greater than the risks of acquiring an infectious disease.

### Systemic Disease

Tetanus is the most important zoonotic threat from healthy appearing horses. The horse colon is the ideal habitat for *Clostridium tetani*, the bacterium that causes tetanus. Horse manure or objects contaminated with its dust is an excellent source of tetanus infection if the bacterial spores gain entrance to a puncture wound. The spores can remain infective for more than 40 years. Untreated, tetanus kills by paralyzing the respiratory muscles of the chest.

Anthrax (*Bacillus anthracis*) is a spore-forming bacterium that can cause blackened skin infection or death in humans. Horses with anthrax can transmit the disease to humans by body secretions or contaminating soil with anthrax spores, which can remain infective for at least 70 years. The disease in humans is variable, depending on the route of infection. Anthrax is very dangerous, but rare in the U.S. Transmission does not occur from normal appearing horses to humans.

*Rhodococcus equi* is a bacterial infection of foals that can be transmitted to humans, but the risk not increased by being around adult horses.

Brucellosis (*Brucella* spp.), the cause of abscesses on the withers (“fistulous withers”) or poll (“poll evil”) in horses, can cause systemic infection in humans. Transmission could occur while treating the disease in horses, but does not occur from a horse without signs of disease.

Vesicular stomatitis virus causes blisters in the mouth and nostrils and on the feet and teats of horses. Handlers of horses with vesicular stomatitis blisters in their mouth can become infected from contact with the blister fluid and develop a rash.

Leptospirosis a bacterial disease in horses causes eye inflammation or less commonly, abortions. The eye inflammation, equine recurrent uveitis or “moon blindness,” occurs after the bacterial disease has subsided. Leptospirosis in humans causes flu-like symptoms and signs and inflammation of the kidneys. Zoonotic leptospirosis in humans is usually acquired from contaminated water by ingestion or by the water infecting mucous membranes or breaks in the skin.

Rabies is a fatal disease in horses and humans. Transmission from the carrier occurs after signs of disease appear. The incidence of rabies in horses has been increasing. As a result, antirabies vaccine is now considered a portion of the core annual vaccines recommended for all horses.

### **Digestive Tract Disease**

Salmonellosis is a problem that often develops in horses confined to stalls and under stress. Humans can possibly acquire salmonellosis from horses with *Salmonella* infections and from carriers shedding the bacteria in their feces without clinical signs, but based on the general lack of reported human cases from horses in the U.S., the risks are extremely low.

Cryptosporidiosis (*Cryptosporidium* spp.) is a microscopic parasite that can cause diarrhea and abdominal discomfort in horses and humans. Normal-appearing horses without diarrhea can carry and transmit the parasite in their feces.

### **Skin Disease**

Some mange mites, such as the straw and hay itch mites, can be transiently transmitted from infested horses to humans. Transmission of the mites is from horses with manifestations of the mite skin disease.

Ringworm (*Trichophyton* and *Microsporum* spp.) is a fungal infection of the skin of horses that can be transmitted to humans when treating the disease in horses. The risk is greatest from horses stabled together for long periods in winter.

Dermatophilosis (*Dermatophilus congolensis*), a bacterial disease of the skin called “rain rot,” is transmitted by contact or by stable flies. There is no risk of transmission to humans from normal-appearing horses, but transmission may occur when handling exuding or crusting skin sores in horses.

### **Vector-Borne**

Equine encephalomyelitis viruses (eastern, western, St. Louis, and West Nile) can affect humans causing brain damage and death, but the viruses are not acquired directly from horses. The viruses are spread over wide distances by passerine birds (blackbirds, sparrows, and jays) and transmitted by mosquitoes.

*Anaplasma phagocytophilum* (formerly *Ehrlichia equi* and *E. phagocytophilia*) is a form of ehrlichiosis affecting horses and humans that is transmitted by black-legged ticks. Anaplasmosis in humans causes influenza-like symptoms.

### **Sanitary Practices**

A handler of horses should wear appropriate dress to protect against skin contamination with hair and skin scales or saliva, nasal, or other body secretions. Basic sanitary practices should be practiced, such as keeping hands away from eyes, nose, and mouth when handling horses and washing hands after handling them. Horse handlers should be vaccinated against tetanus every 10 years and horses should be vaccinated annually against rabies and encephalitis viruses, including West Nile Virus.

Mosquito, tick, and fly control measures should be implemented. Purposeless standing water should be eliminated. Water in stock tanks, pet bowls, and bird baths should be changed at least once per week. Handlers should wear mosquito repellent during mosquito seasons. Cutting or grazing pastures short aid in controlling ticks. Manure should be composted at least 150 ft from barns. Fly traps and sprays should be considered.

Means of controlling of rodents and birds should include sealing any holes more than ½ in diameter in rooms with grain with steel wool. Grain rooms should be constructed of gnaw- and peck-resistant materials. There should be less than ½ inch gaps between doors and

thresholds and grain should be stored in sealed, rodent proof bins. Grates on floor drains should have less than ½ inch gaps. Hay and equipment should be stored on pallets so that rodent presence can be monitored. Lightly sprinkling flour on the floors can aid in tracking rodent activity. One inch gravel, 6 inches deep, and 3 feet out from buildings can be an effective rodent barrier. Sufficient water should be maintained in water troughs that birds cannot stand on the bottom and bathe in the drinking water. Bird netting should be considered for use in rafters.

Rodent baits can be dangerous to children, dogs, cats, and birds. The rodenticide remaining in dead rodents can be poisonous to dogs or cats that consume them. Gentle, rabies vaccinated barn cats are good barn guardians against rodents, snakes, and undesirable birds. Rabies vaccinated yard dogs are a deterrent to raccoons, skunks, foxes, and opossums.

Grooming tools, halters, hay nets, waterers, and feeders should be thoroughly cleaned and disinfected whenever they will be used for new horse on the premises. Stall bedding should be discarded and stall walls, ceiling, and floor cleaned and disinfected for new horses. An effective disinfectant is 1 cup of household bleach in 5 gallons of water.

When handling more than one horse from different origins, proper sanitation is required to prevent the spread of disease from horses that have little to no signs of disease. Horses from different origins should preferably not be confined in the same barn or adjacent pens or pastures for 3 weeks. Special precautions are needed if sick horses are handled, and sick horses should be isolated from apparently normal horses.

Now, let's recap the key points to remember from today's episode:

- **Tetanus is the most dangerous zoonotic disease from horses. Anyone around horses or their stalls and pens should maintain current tetanus vaccinations.**
- **The incidence of rabies in horses has been increasing. Rabies vaccinations are part of the core annual vaccinations that every horse should receive.**
- **Equine encephalitis viruses are not transmitted to humans by contact with horses, but they are by mosquitoes that have bitten infected horses.**
- **Horses should be vaccinated annually against equine encephalitis viruses for their health and to eliminate a reservoir for transmission to humans by mosquitoes.**

Abby says it is time to wrap up this episode.

More information on animal handling is available in my book, *Animal Handling and Physical Restraint* published by CRC Press. It is also available on Amazon and from many other fine book supply sources.

Additional information is available at [www.betteranimalhandling.com](http://www.betteranimalhandling.com)

Don't forget serious injury or death can result from handling and restraining some animals. Safe and effective handling and restraint requires experience and continual practice. Acquisition of the needed skills should be under the supervision of an experienced animal handler.