



## Brucellosis

**Disease Name:** Equine Brucellosis is caused by the bacteria *Brucella abortus* or *Brucella suis*. *Brucella melitensis* is common outside of the United States. In horses, the *Brucella* bacteria causes infection of synovial structures including the poll, withers, and joints which often rupture and drain thick, purulent fluid (pus). Diagnosis of Brucellosis is reportable in the United States.

**Disease Type:** Bacterial

**Transmission:** Infection in horses is often associated with contact with cattle. Transmission occurs via ingestion, inhalation, or direct contact with feces, urine, or aborted tissues from infected cattle or other livestock. Brucellosis is present worldwide and poses a significant ZONOTIC risk as the organism can infect people.

**Frequency:** Frequency of infection varies by region. Within the United States, Brucellosis is rare in horses.

**Incubation period:** Incubation period varies but can last up to 30 months.

**Carrier status:** Horses exposed to the organism may become carriers of the bacteria with no clinical signs. Alternatively, horses may develop chronic infection and intermittently shed the bacteria.

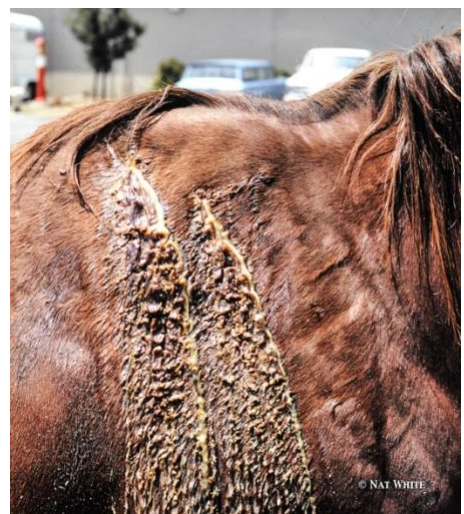
**Shedding period:** Unknown

**Latency:** Latency varies significantly and can last up to 30 months, with reappearance of infection (often swelling and draining wounds) common after apparent resolution or treatment.

**Severity:** Varies significantly by strain, horse health status, and location of the infection.

### Clinical signs:

- Many exposed horses do not exhibit clinical signs.
- Brucellosis most commonly causes fever and poor appetite associated with infection of a joint, synovial structure, or vertebrae.
- Localized areas of heat, swelling, and pain may precede drainage of fluid.
- Infection of the supraspinous bursa at the withers ("fistulous withers" – see image) or infection of the cranial or caudal bursa at the poll ("poll evil") is most common.
- Areas with drainage may heal and reopen.
- Spontaneous abortion or placentitis may occur





**Diagnosis:** Brucellosis should be suspected in horses that have draining lesions and live with livestock. Definitive diagnosis is via PCR or bacterial culture of purulent fluid, vaginal discharge, or aborted tissue. A negative bacterial culture does not rule out Brucellosis as the organism is difficult to culture, and growth may be hampered by prior antibiotic therapy. Serologic testing using various methods is available, but none of the tests are validated for horses.

**Treatment:** Proper biosecurity and personal protective equipment (PPE; gloves, boots, face shield, N95 mask) is important when treating horses with confirmed or suspected Brucellosis to reduce risk of human exposure. If treatment is attempted, systemic antimicrobials, surgical removal of infected tissues, and wound lavage is recommended. Prolonged treatment is generally necessary.

**Prognosis:** Prognosis for return to full work is generally poor, given the chronic nature of the disease and limited response to treatment.

**Prevention:** Horses should not be housed with livestock or on pastures that have contained livestock that are seropositive for *Brucella* spp. Proper fitting tack and equipment reduces trauma to the skin and withers, reducing the risk of disease.

No vaccine for the prevention of infection from *Brucella* spp. organisms is approved for horses. Off-label use of the cattle *Brucella* vaccine by a veterinarian may be effective in some cases but has severe side effects, including death.

**Biosecurity:** Biosecurity practices for Brucellosis focus on minimizing exposure of horses to carriers of disease and bacteria in the environment. New animals should be quarantined for a minimum of 2 weeks and livestock may be screened for *Brucella* spp. antibodies. Brucellosis is zoonotic. Specific focus should be placed on reducing human exposure by appropriate personal protective equipment PPE. Consumption of raw milk and dairy products should be avoided as these can serve as a source of *Brucella* exposure. Prevalence of Brucellosis is higher in the Middle East, Central Asia, India, and Central and South America. Those working around horses from endemic areas should be especially diligent regarding PPE.