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Canine Brucellosis: Information for Dog Owners

What causes canine brucellosis?

Canine brucellosis is a bacterial infection caused by *Brucella canis* (*B. canis*). However, *Brucella* bacteria associated with other animal species, such as *Brucella suis* (pigs) and *Brucella abortus* (cattle and bison), can infect dogs depending upon their exposures to livestock or feral swine.

What are the signs of canine brucellosis in infected dogs?

In female dogs, brucellosis causes abortion and infertility. Females may fail to get pregnant or may lose their litters in late pregnancy (7th to 9th gestational week). After abortion, female dogs may have a prolonged vaginal discharge. In male dogs, brucellosis infection of the reproductive organs may result in infertility, inflamed prostate, swollen or shrunken testicles, and swollen epididymis.

Other signs of infection in both males and females or neutered animals could include lethargy, swollen lymph nodes, pain in the bones or joints or non-specific signs of back pain or arthritis. Infections may also occur in the eye. Dogs may not show any outward signs of infection.

How do dogs get infected with *Brucella*?

Dogs may be infected through exposure to fluids or tissues during mating (sexually transmitted) or contact with infected fluids or tissues during birth or abortion. In addition, dogs may shed bacteria in urine, saliva, eye or nasal discharge, and feces which other dogs may ingest through licking or contact with open wounds.

Stray dogs and rescued shelter dogs are at increased risk for carrying *B. canis*. Infection with *B. suis* can occur in hunting dogs that have contact with blood, urine, saliva, organs or meat of feral pigs. Exposure to *B. abortus* may occur in roaming dogs in contact with aborted tissues or fluids of infected cattle, bison or elk in the Greater Yellowstone Area.

Can my dog be cured of brucellosis?

No treatment has proven to eliminate *B. canis* infection in dogs. The bacteria can spread through the bloodstream and hide undetected by the immune system in the prostate, eye, joints and bones. Consequently, treatment is not recommended in animals due to the contagious nature of brucellosis and the threat to human health.

Pet dogs that are infected and not euthanized may be spayed or neutered and treated with a long course of antibiotics at the discretion of the pet owner and treating veterinarian. However, in North Dakota, infected dogs must remain under permanent quarantine due to potential of relapse even under treatment.

How can I prevent canine brucellosis in my dog?

The good news is that canine brucellosis is preventable. Before breeding your dog, both the female and male dogs should be examined and tested by a veterinarian with a simple blood test. Dogs should not be bred if they are infected with canine brucellosis. Dogs known to be exposed to feral hogs should be tested periodically to detect any early infection. Stray dogs and shelter dogs should be tested if origins are unknown or if adopted from a known risk area.

If my dog has brucellosis can I get sick too?

Yes, *Brucella* bacteria can infect humans. However, the *Brucella* organisms vary in their rate of infectivity and severity of illness. *B. canis* is most often diagnosed in people that commonly come in contact with very high numbers of bacteria, such as dog breeders or those in research or diagnostic laboratories, animal shelters and veterinary staff. However, people who are immune compromised due to illness, organ transplant or cancer therapy, and children or pregnant women are more vulnerable to brucellosis. Brucellosis infections in people are rarely reported due to the lack of available testing for *B. canis* versus other *Brucella* bacteria and lack of awareness leading to failure to seek a diagnosis.

What are the symptoms of canine brucellosis in humans?

Depending upon the *Brucella* species, symptoms are often nonspecific. The most commonly reported symptoms in people are continued or intermittent fever, headache, unexplained weakness, generalized body ache, and lymph node enlargement. In more severe infections, joints, bones, or heart valves may be affected. Individuals exhibiting any of these symptoms with past contact with breeding dogs or stray dogs should seek medical attention.

How does canine brucellosis spread to humans from dogs?

The risk of acquiring canine brucellosis from a dog is low in most situations. Canine brucellosis can spread to humans by contact with reproductive fluids or tissues, such as vaginal discharge or semen, aborted puppies or placenta, urine, blood, or other secretions from infected dogs. Chronic contact with feces and saliva from infected dogs can also spread disease. Infection in people usually results when infected tissues or fluids come in contact with broken skin or are accidentally ingested.

How long after exposure would I become ill if I have become infected?

Signs of illness can occur within one week to many months after exposure. On average, signs will begin within 3-4 weeks following infection. Some people may never show symptoms of infection.

What is the treatment for brucellosis in humans?

Antibiotics are used to treat brucellosis in humans and people typically respond well to therapy. Persons infected with *Brucella* species may require antibiotic therapy for several weeks to months, and relapses can occur.

How do I prevent myself from getting canine brucellosis if my dog is infected?

Protective measures should be taken to prevent contact with reproductive fluids, urine, and tissues (such as an aborted fetus). Wear rubber or latex gloves when handling high risk materials and cleaning kennels or affected surfaces. Face masks and eye protection should be worn to prevent any material from entering the mouth or eyes when spraying or disinfecting kennel areas, especially if the person is immune compromised. Any animal suspected of infection or exposure should be kept in isolation until testing is complete. Avoid exposure to stray or feral dogs.

How do I eradicate brucellosis after my home or kennel has become contaminated?

Brucella organisms are not very hardy outside of an animal and are sensitive to sunlight and drying. Contaminated wet areas should be dried and disinfected using 1% sodium hypochlorite (bleach), 70% ethanol, iodine/alcohol solutions, or aldehydes.

How can I prevent canine brucellosis in my kennel?

Breeding dogs should be purchased from known brucellosis-free kennels. All newly acquired dogs should be isolated and tested twice, 4-6 weeks apart, before they are introduced into the breeding group. All breeding dogs in a facility should be tested yearly at the same time.

How do I control and eradicate brucellosis after my kennel is infected?

Isolation, testing, and euthanasia of infected dogs are the primary methods necessary to eliminate and prevent the spread of disease in a breeding facility. All positive tests for canine brucellosis must be reported to the Board of Animal Health or State Veterinarian.

Preventing canine brucellosis is cost effective when compared to trying to eradicate an infection. Owners of infected kennels in the U.S. have reported as much as \$30,000 in lost revenue due to quarantine with similar monetary losses from veterinary expenses, laboratory testing, and brucellosis eradication.