



Canine Brucellosis- Q&A for Dog Owners

What is canine brucellosis?

Canine brucellosis is an infectious disease caused by a bacterium called *Brucella canis* (*B. canis*). It is the most common type of *Brucella* species found in dogs. The disease is endemic in areas with large populations of stray, intact (not spayed or neutered) dogs. Montana is beginning to see a broader distribution of dogs testing positive for *B. canis* throughout the state. *B. canis* infection in dogs is not caused by exposure to brucellosis found in wildlife.

What are the signs of brucellosis in dogs?

Many dogs with *B. canis* are asymptomatic. In female dogs, brucellosis may cause abortion between the 45th and 59th day of pregnancy. Other common reproductive symptoms include failure to conceive in an otherwise healthy dog, infertile males with abnormal semen quality and enlarged testicles that subsequently decrease in size. Non-specific symptoms for both sexes include severe back pain, lameness, lethargy (decrease in activity, depressed), loss of libido, premature aging, and generalized lymph node enlargement. Pups infected prior to whelping may be born weak or appear normal but develop symptoms later.

How do dogs become infected?

This disease is mainly transmitted through reproduction and by nose/mouth contact with vaginal discharge or birthing fluids from an infected female. Semen, urine, feces, blood, saliva, and nasal secretions can also contain the bacteria and are potential risks for transmission to people and other dogs. Furthermore, puppies can become infected from their mother during pregnancy. Neutered and spayed dogs can still transmit the disease to other dogs and to humans.

Can my dog be cured of brucellosis?

Unfortunately, the primary recommendation for dogs that test positive for *B. canis* is euthanasia. *B. canis* infection is not curable in dogs, not a benign disease for the dog, and transmission to humans is possible in certain circumstances. Sterilization (if not spayed or neutered), lifelong antibiotic treatment, isolation in the home, and routine testing are offered as a second management option, though treating *B. canis* cases is not curative. The bacteria can hide in organs, such as the prostate, making it difficult for antibiotics to penetrate and impossible to eliminate all the organisms.

Can I prevent my dog from contracting canine brucellosis?

No vaccine is available to prevent brucellosis in dogs. If you introduce a new dog to your family, consider testing the new addition for disease, especially if the dog is pregnant or if it is coming from a breeding kennel or rescue program.

Before breeding your dog, both the male and female dog should be examined by a veterinarian and tested for the disease with a simple blood test. Breeding facilities should test all new additions for brucellosis before bringing them on to the premises. These dogs should also remain isolated until a second negative test is obtained 4-6 weeks later. Dogs should not be bred unless they test negative for brucellosis.



If my dog has canine brucellosis, can I get sick too?

Yes. *B. canis* can infect humans, although it is very rare.

How does canine brucellosis spread from dogs to humans?

People who are exposed to large numbers of bacteria are at highest risk for becoming sick. The most common way humans become infected is through direct contact with birthing fluids, canine abortion products, or vaginal discharge from an infected dog, since large amounts of *B. canis* bacteria are found in these substances. *B. canis* can be transmitted if these infectious materials contact a person's mucous membranes (e.g., mouth, eyes), scratched skin, or any open wounds.

The *B. canis* bacterium can survive in areas with high humidity and low temperatures with no sunlight for long periods of time. Exposure to canine respiratory secretions, urine, dust and dirt, water, clothing, and other inanimate objects may pose a transmission risk, although this risk is likely low.

What is the risk that I will become ill?

As mentioned above, people must be exposed to large amounts of *B. canis* bacteria to become infected. Those at highest risk are those assisting with birthing or whelping and have direct contact with the bodily fluids from an infected dog. The risk of contracting brucellosis in a household setting from simply touching a dog bowl or toy is low, especially if you practice good hand hygiene afterwards. People who have a weakened immune system, including pregnant women or persons with artificial heart valves, are at higher risk of acquiring the infection. Infants and children have a slightly higher risk due to having an immature immune system and being unaware of proper hygiene practices, such as good hand washing and avoiding mouthing.



Can I be tested for canine brucellosis after I was exposed to a positive dog?

MTDPHHS cannot test for canine brucellosis in asymptomatic humans. Notify local public health and your healthcare provider after a potential exposure and monitor for any symptoms indicative of infection.

What are signs and symptoms of canine brucellosis in humans?

Persons who believe they have been exposed to *B. canis* should be aware of the signs and symptoms of brucellosis and consult with a healthcare provider if they become ill. Symptoms are often mild and nonspecific, so it is important to tell your provider of any exposure. The most common signs and symptoms of human infection include a continued, intermittent, or irregular fever accompanied by headache, weakness, generalized aches and lymph node enlargement. People who have a weakened immune system, including young children, pregnant women, or persons with artificial heart valves are at higher risk of severe symptoms if they acquire the infection. In more severe infections, joints, bones, or heart valves may be affected.

How long after an exposure does it take for symptoms to show?

Signs of illness can occur within one week to several months after exposure. On average, signs will begin within 3-4 weeks following infection.



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How can I prevent other dogs and humans from becoming sick if my dog is infected?

- MTPHHS recommends that owners of positive dogs follow the State Veterinarian's guidance for humane euthanasia of *B. canis* infected dogs due to risk of transmission to humans and other dogs. We understand that this is a difficult situation for you because your dog is a loved family member. If you have any questions or concerns about fulfilling these responsibilities, please call your veterinarian or local health department.
- Any newly acquired animal or dog suspected of being infected should be placed in quarantine or other isolated facility until testing is complete.
- In general, all animal caretakers, especially those in contact with breeding dogs, newborn puppies, or aborted fetuses, should wear latex or rubber gloves when handling bodily fluids (e.g., birthing or reproductive secretions, urine, saliva, and tissues) from an animal. Consider using eye protection and covering any scratched skin and open wounds to prevent splash exposures. Do not administer mouth-to-mouth resuscitation on stillborn pups.
- Wash your hands for at least 20 seconds with soap and water after interacting with an animal, even if they are not suspected of having brucellosis and even if you were wearing gloves. Dry your hands with a clean disposable towel or napkin.
- When disinfecting kennel areas and runs, face masks and eye protection should be worn to prevent any material from entering the mouth, nose, or eyes.
- Disinfect potentially contaminated areas with one of the following options:
 - Household bleach (1:32 dilution for routine disinfection, 1:10 dilution after following brucellosis diagnosis)
 - Phenolic disinfectants (e.g., Lysol)
 - Quaternary ammonia compounds (e.g., Roccal D, Parvosol)
 - ****NOTE:** Disinfectant is required to remain wet on the surface for the required contact time to be effective against the bacteria.

Helpful Resources

- Montana Department of Public Health and Human Services: <https://dphhs.mt.gov/publichealth/cdepi/diseases/Zoonotic>
- Montana Department of Livestock: <https://liv.mt.gov/Animal-Health/Reportable-Animal-Diseases/Brucella-canis>
- Additional resources for veterinarians/dog caretakers: http://www.aphis.usda.gov/animal_welfare/downloads/brucella_canis_prevention.pdf
- CDC: <https://www.cdc.gov/brucellosis/index.html>