MINNESOTA
BOARD OF ANIMAL HEALTH

Canine Brucellosis: Frequently Asked Questions

What is Canine Brucellosis? How is it different from other strains/types?

Brucellosis is the name of the disease caused by the bacteria of the genus *Brucella*. There are many different *Brucella* species and each has an affinity for a specific species it primarily infects. However, there are some *Brucella* species that crossover and can infect multiple species like humans who are susceptible to multiple strains.

How does it spread?

Brucellosis spreads most often via reproduction through contact with vaginal discharges, semen, birthing fluids, and urine. Contact with an infected dog's blood, milk, saliva, and feces can also cause infection.

What are the clinical signs of canine brucellosis?

In female dogs, the most common symptoms are aborted pregnancies, stillbirth, and inability to become pregnant. However, female dogs with brucellosis can deliver infected puppies that outwardly appear healthy. In males, the primary symptom is the inability to sire puppies. All dogs, including those that are spayed/neutered can show signs in other body systems including swollen lymph nodes, eye disease, and infections of the spine causing waxing and waning back pain. Unfortunately, most infected dogs appear normal and show no symptoms.

What can prospective pet owners do about it?

When considering adopting a pet, it is important for prospective owners to know the animal's history. Ask questions about the animal's health:

- Is the dog's vaccine status appropriate for its age?
- Has it had any anti-parasitic treatments?
- Where was it born, raised, or imported from?
- Were the proper import requirements followed before the animal was brought into the state and put up for adoption?
- Does it have any health concerns, or has it been tested for any infectious diseases that it may be at higher risk for due to where it was imported from or if it was part of a breeding program?

Most importantly, inform your veterinarian about any new pets you are considering adding to your family and see if they have any recommendations or questions you should ask the seller, or if they have any concerns about the health history or the source of the animal you may be adopting.

Why are rescue dogs a higher risk category?

Most rescue organizations make an honest effort to screen and import animals legally. However, adherence to Minnesota's import requirements is a bare minimum and there are currently no regulations many rescues are legally required to follow. Any health screenings, vaccinations, or medical treatments provided by rescues are done so strictly voluntarily. This emphasizes the importance of asking questions about the animal's history and seeking your veterinarian's advice before adopting or purchasing a new pet.

Are dogs from breeders, shelters or other avenues also at higher risk of having canine brucellosis?

Dogs used in a breeding program are at a higher risk for brucellosis than those who weren't. The risk associated with dogs obtained from a shelter is dependent on the dog's origin. Many shelters have screening programs in place to reduce the risk of brucellosis. It's still important to ask the same questions of a breeder or a shelter that you would a rescue, and to make sure your veterinarian knows your dog's history.

What should pet owners do if they suspect their dog is sick?

Always contact your veterinarian right away when you have concerns about your pet's health. Make sure they are aware of where your pet was adopted or purchased from and provide any up-to-date and historical medical records for your dog.

How do infected dogs pass screening tests and are they accurate?

Not all infectious diseases are the same, and not all tests are created equal. Tests for some infectious diseases look for antibodies in the blood against the organism in question. In early stages of an infection there may not be enough antibodies present in the animal's system to be detectable by a test. This can lead to a false negative result if an animal was recently infected. Conversely, antibodies can remain in an animal's system for months to years after an infection has been cleared, which can lead to a false positive result. To complicate matters further, some bacteria may stimulate an initial antibody response from the animal but then work their way to different organs or tissues in the body (such as the uterus) where they can hide dormant for years and no longer stimulate an antibody response. In such cases, the animal is still carrying the bacteria and can spread it but is no longer producing detectable antibodies.

Other tests look for the organism itself, either by trying to grow it in a laboratory from blood or potentially infected tissue, or by trying to detect its DNA. A positive result in such cases is very reliable, but false negatives can be very common, depending on the organism and whether or not the animal happens to be actively shedding it at the time of testing.

In many situations the most accurate results are obtained by running more than one type of test and conducting repeated tests.

What are the Board's recommended screening tests and procedures for testing?

For most asymptomatic pets, screening for brucellosis is not recommended, unless the animal was originally obtained from an area or a situation at higher-than-average risk for the infection.

For dogs showing clinical signs, the recommendation is to start with a screening test which looks for antibodies against the bacteria. Tests such as the Rapid Slide Agglutination Test (RSAT), Tube Agglutination Test (TAT), Brucella Multiplex Assay, or an Indirect Fluorescent Antibody test (IFA) are good screening tests for average-risk dogs. Negative results can be trusted to be negative, but false positives are common as the test can cross-react with another common, less harmful, bacteria that can infect dogs. Follow up tests such as the Agar Gel Immunodiffusion (AGID) test should be performed to confirm any positive test results.

Screening dogs at higher risk of brucellosis is recommended. Performing multiple tests over a period of time is the best way to detect infected animals. However, testing dogs under 6 months of age is of questionable use, as false negatives are common in these animals. The false sense of security that might be provided by getting a negative test result in animals under 6 months of age may be worse than not testing at all. Therefore, we recommend first testing at 6 months of age and then repeat again 12 weeks after the last known exposure. For someone who adopts a puppy at a higher risk of infection, testing at 6 months and again at 1 year is a good rule of thumb to follow.

What happens if my dog tests positive?

Per Board of Animal Health rules, any dog that tests positive must either be humanely euthanized or they are put on a life-long quarantine on the owner's property. Quarantined dogs may only leave for veterinary care and must obtain a movement permit from the Board of Animal Health.

Is there a cure or effective treatment?

Dogs infected with brucellosis are considered infected for life. Prolonged treatment (months) with multiple antibiotics may improve signs in clinically ill animals, but clearing the bacteria from the animal is not possible, reoccurrence of clinical signs is likely, and asymptomatic dogs can still shed the bacteria and will continue to be a potential source of infection for other dogs.

What's the risk to people?

People can become infected with brucellosis. Clinical signs vary from mild or undetectable to life threatening. Given the range of clinical signs and the fact there are not sufficient tests for brucellosis in humans the true incidence of infection in humans is difficult to ascertain.

What is the Board's role in preventing canine brucellosis?

The Board's role is to investigate animals that test positive for brucellosis and trace them to their source. Once a source is discovered the Board determines what other animals it may have potentially exposed. Lastly, the Board works to ensure the infected animal cannot spread the infection to other animals or people. It is also the Board's responsibility to take proactive steps to educate the public on the disease and what steps individuals can take to help ensure the animal they are considering adopting or purchasing is healthy.

What is my veterinarian's role in preventing canine brucellosis?

Veterinarians should be aware of the clinical signs of brucellosis, the difficulties inherent in diagnosing and treating the infection, and educate themselves on what animals are at a higher risk of infection. Educating themselves on the disease will make sure they can help their clients make informed decisions on where they get their next pet.