

## Could Your Dog Be a Carrier of This Hidden Disease?

Discover the crucial test every dog breeder must know about to ensure their pets and families stay safe from this silent and potentially dangerous infection. Protect your breeding plans and beloved companions by staying informed and proactive.

### STORY AT-A-GLANCE

- Brucellosis is a venereal disease in which bacteria invade the reproductive organs; in dogs, the bacteria involved is usually *Brucella canis*. Any dog that will be bred should be tested for brucellosis
- Brucellosis is transmitted from dog to dog in bodily fluids, typically through sexual activity; brucellosis is a zoonotic condition, which means it can be transmitted to humans, though the chances of infection are quite low
- Many dogs infected with brucella show no symptoms initially; others may develop enlarged lymph nodes or inflammation of the liver or spleen. Left untreated, brucellosis can result in a number of serious secondary diseases
- The most common method for diagnosing brucellosis is a test called the rapid slide agglutination test, but it has a few drawbacks; a version of the agar-gel immunodiffusion test is considered the most accurate test for the disease
- No dependable treatment is currently available for brucellosis; affected dogs are considered positive for the disease for the rest of their lives. Integrative vets often use immune supportive herbs, nutraceuticals, and homeopathics to help bolster a dog's positive immune system response

Brucellosis is an important canine venereal disease you've likely never heard of. It affects many species but isn't often seen in family dogs because most aren't bred. However, if you plan to breed your dog, you should know about this zoonotic disease that can be transmitted to humans.

*"All dogs to be bred should have a brucellosis test," says veterinarian Wendy Brooks, writing for Veterinary Partner. "Active stud dogs should be tested every 6 months. If you are planning to breed your dog, test your dog and insist that the owner of your dog's mate produce results of a recent test for your inspection."<sup>1</sup>*

Brucellosis is a venereal disease caused by bacteria that invade the reproductive organs. It occurs in a variety of animals through infection with several species of *Brucella* bacteria. In dogs, the bacterial culprit is usually *Brucella canis* (*B. canis*). After exposure, it takes the bacteria about three weeks to show up in the bloodstream, and then it sets up shop in the reproductive or urinary tract, and also continues to feed into the bloodstream.

Dogs can also become infected with *Brucella abortus* from cattle; *Brucella melitensis* from goats; and *Brucella suis* from pigs, but this is much less common. Other *Brucella* species are *Brucella ovis*, which affects only rams, *Brucella neotomae*, which affects desert mice, *Brucella microti*, which affects rodents and voles, *Brucella ceti* and *Brucella pinnipedialis*, which affect marine mammals, and *Brucella inopinata*, which has only been found once in a human breast implant infection.

Fortunately, *Brucella canis* causes much less serious disease in humans than do the livestock *Brucella*.

## How Transmission Occurs

Brucellosis affects both male and female dogs and is passed from dog to dog in bodily fluids. The main route of transmission is through sexual activity. But the infection can also be transmitted through inhalation of contaminated urine or fetal membranes, through the eyes or the oral cavity, or ingestion of contaminated fluids such as urine or vaginal discharge. Airborne transmission is very rare but has been reported.

Brucellosis spreads fastest among dogs living in close quarters, especially during breeding, whelping, or when a female dog aborts a pregnancy due to a brucella infection. In the latter situation, the female will continue to secrete contaminated fluids for four to six weeks, making every dog that comes in contact with her susceptible to infection.

*Brucella* bacteria can exist in the environment for a long time. In moist, cool, dark conditions, it can survive for months.

## Signs of a Brucella Infection

Most adult dogs with brucellosis don't appear sick initially; others develop symptoms like enlarged lymph nodes and/or inflammation of the spleen or liver. Left untreated, chronic immune stimulation by the brucella bacteria can result in inflammation of the discs of the spine (a condition known as discospondylitis), uveitis (deep eye inflammation), glomerulonephritis (inflammation of the kidneys that results in protein loss), and multiple joint arthritis (polyarthritis).

However, most of the time, the only sign of a brucellosis infection in female dogs is an aborted pregnancy that occurs late term. Less common variations are a pregnancy that is lost early term rather than late, stillborn puppies, or the birth of live puppies that are infected. In male dogs, there can be swollen scrotal sacs that signal infection, shrinkage of the testicles, and/or infertility.

## Testing and Diagnostics

For purposes of breeding, the RSAT (rapid slide agglutination test) is a test that can readily identify negative dogs. If the test is negative, the dog can be considered negative. If the test is positive, further testing is needed. Up to 60% false positives occur, according to Brooks. A test kit is available for use by veterinary clinics and some facilities can perform the test while you wait.

The IFA (Immunofluorescent Antibody) test is a similar screening diagnostic, but it must be sent to the reference laboratory. The same guidelines apply — negative means negative, positive means do further tests. Of course, if there is a classic history (such as an aborted litter of puppies) along with a positive IFA test, it may not be necessary to go further, as the situation is clear.

There are two additional tests for RSAT or IFA positive dogs. The most specific is the AGID (agar gel immunodiffusion) test. A version of the test called the CPAGID is the most accurate of all.

Another test is called a TAT (tube agglutination test). It looks for antibodies against *Brucella canis*. Antibiotic treatment with tetracyclines can drop antibody levels low enough for the TAT to be negative but this does not necessarily indicate that the infection has cleared. At this time the CPAGID is favored over TAT.

If a dog is to travel to Australia, a TAT test is required as part of the travel documentation. If a dog is to travel to New Zealand, an AGID test is required as part of the travel documentation.

## Treatment Options

Unfortunately, there's no dependable treatment available for brucellosis. Long-term antibiotic therapy is sometimes used. But in most cases, the drug only reduces the level of bacteria in the bloodstream; it doesn't successfully destroy all the brucella bacteria present in the dog's body. Dogs diagnosed with brucella are considered positive for the disease for the rest of their lives.

Interestingly, dogs have been known to recover from brucellosis naturally. However, it can take as long as five years for their immune system to clear the infection completely. Dogs who naturally recover from this disease can't be re-infected, whereas dogs treated with antibiotics can acquire the infection again.

Animals that have been infected with brucella should never be bred. Infected dogs should be separated to prevent transmission to healthy animals. Per Brooks:

*"The dog should be confined to the owner's property for life. This means that veterinary services should be provided by a house call veterinary service and grooming services should be provided by a mobile service. Obviously, these service providers should be warned about the dog's condition so that proper protective gear can be employed."*<sup>2</sup>

Because brucellosis is zoonotic, people with weakened immune systems or those who have had autoimmune disorders should not be exposed to an animal that is positive for brucella.

Integrative veterinarians often use immune supportive herbs, nutraceuticals, and homeopathics to help bolster a dog's positive immune system response. And of course there is always a focus on excellent nutrition, including whole fresh foods that nourish the immune system.

## Sources and References

<sup>1,2</sup> [Veterinary Partner, March 13, 2024](#)

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