

Canine Brucellosis Guidance for Rescue Organizations

VETERINARY PUBLIC HEALTH PROGRAM



What is Canine Brucellosis?

Canine brucellosis is an infectious disease caused by the bacteria *Brucella canis*. Infected dogs can spread the disease to other dogs and in some cases also to people. There is no reliable cure for the disease in dogs. It is considered a life-long infection that can lead to devastating health consequences resulting in a poor quality of life in infected dogs. Dogs at higher risk of brucellosis include those that have not been spayed or neutered, are free roaming, stray, or involved in breeding programs.

How is Canine Brucellosis Spread?

Transmission to dogs and humans occurs when infectious material comes into contact with skin wounds or mucous membranes. Puppies may become infected before, during, or after birth from an infected mother. The highest concentrations of *Brucella canis* bacteria are found in reproductive and birthing fluids and tissues, including fetuses, vaginal discharge and semen. Urine, blood, saliva, milk, and feces from an infected dog can also contain bacteria and is capable of transmitting the infection. Materials contaminated with these fluids, including clothing, shoes, veterinary or animal husbandry equipment, crates, bedding, and towels, can also serve as a source to spread the bacteria.

Clinical signs of canine brucellosis in dogs:

In female dogs, the most common symptoms are reproductive problems, including stillborn or aborted (i.e miscarried) puppies. The disease is transmitted from mother to puppies and the resulting litters may include dead puppies or infected puppies that may appear sick or even normal. In male dogs, the bacteria can cause infertility and inflammation of the prostate gland, testicles, and epididymis. Both male and female infected dogs may also have inflammation inside the eye (uveitis), lameness, enlarged lymph nodes, and lethargy. Dogs often develop diskospondylitis, which is infection and inflammation of the spinal discs and bones of the spine. Diskospondylitis causes back pain and discomfort and can also involve fever, and problems with walking and long-term poor quality of life. Some infected dogs may have no obvious clinical signs but can still spread the disease.

How do you test for brucellosis in dogs?

There are a variety of tests available for brucellosis testing in dogs. Initial screening tests detect antibodies against *Brucella canis* and should be done first. Any dog with a positive screening test should undergo confirmatory testing. Using a combination of screening tests will yield the most accurate results, but if this is not possible, the rapid slide agglutination test (RSAT) and/or Tube Agglutination (TAT) are good screening tests to start with. All testing should be conducted through a veterinary diagnostic laboratory; in-house veterinary tests (those done in the veterinary clinic) are less accurate and therefore are not recommended.

If a screening test is positive, confirmation testing with Agar Gel Immunodiffusion (AGID) and either a blood culture or PCR test should be done. Dogs should be tested 12 weeks after their last potential exposure, and no earlier than 6 months of age to reduce the risk of false negative results. Rescue organizations and dog owners should work closely with their veterinarians to determine appropriate testing protocols.

Is Canine Brucellosis treatable in dogs?

Canine brucellosis is difficult to treat, and there is no reliable cure for infected dogs. Even with antibiotics therapy, relapse is common and infected dogs may continue to periodically shed the bacteria, posing an ongoing disease risk to humans and other dogs. For these reasons, and due to welfare concerns with quality-of-life, euthanasia is strongly recommended for dogs infected with brucellosis.

However, if treatment is attempted, strict precautions are necessary. Dogs must be spayed or neutered. They also need to remain isolated away from other dogs and people for life. Humans at higher risk for infection, including children under 5 years of age, people over 65 years of age, immunocompromised persons, and pregnant women, should not be in the same household as a dog with brucellosis. Owners should work with their veterinarians regarding quality of life considerations, treatment options and lifelong care costs.

***Brucella canis* infection in humans**

People who handle infected dogs, their tissues, or contaminated materials are at increased risk of exposure and infection with brucellosis. This includes veterinary staff, laboratory workers, dog breeders, kennel staff, and people who work with stray or imported animals from countries where canine brucellosis is more common, such as Mexico. Symptoms in humans may include fever, headache, fatigue, weight loss, muscle and joint pain, meningitis or organ involvement (e.g., heart, spleen, liver). Some infected people may also show no symptoms.

People at higher risk for severe disease include children, pregnant people, individuals with co-morbidities and those that are 65 years of age or older.

Diagnosis of people that may have been infected with *Brucella canis* is challenging. There are no tests available for humans to determine if an exposure has occurred (i.e. no serologic tests to check for antibodies). Diagnosis is most commonly made by blood culture, and a negative culture does not guarantee the infection is not there. Treatment in humans involves taking long-term antibiotics and, in some cases, surgery. Post exposure prophylaxis with antibiotics may be indicated for certain people.

Animal Diseases & Regulatory Requirements

The importation of dogs into the U.S. from other countries is regulated by the Centers for Disease Control and Prevention (CDC) and the United States Department of Agriculture (USDA), which require that imported dogs be healthy. Additionally, Los Angeles County Municipal Code (Title 10, link below) prohibits the importation or transport of infectious disease in animals is unlawful (with limited exceptions). Any person who suspects or has knowledge of the presence of an infectious disease in animals is required to report to Public Health. **For more information on Title 10:**

https://library.municode.com/ca/los_angeles_county/codes/code_of_ordinances?nodeId=TIT10AN_DIV2ANHE

RECOMMENDATIONS FOR RESCUE ORGANIZATIONS

To reduce the risk of canine brucellosis transmission and protect both human and animal health, rescue organizations should implement the following practices:

- Ensure that each dog is examined by a licensed veterinarian in the country of origin prior to transport. Dogs should be free from infectious diseases, including brucellosis. Pregnant dogs especially, should be tested for infection with *Brucella canis*.
- Dogs that test positive for *Brucella canis* **must not be imported into the US**. Dogs diagnosed with treatable infectious diseases should receive appropriate treatment prior to importation.
- Rescue organization should provide staff and volunteers with training on infectious diseases in dogs, particularly diseases that can be transmitted to humans (zoonotic diseases). Staff should be provided with and trained on proper use of personal protection equipment (PPE) including disposable gloves, N95 masks, eye protection, and disposable gowns.
- Train staff and volunteers on appropriate cleaning and disinfection protocols to prevent disease spread. Pet waste should be cleaned up appropriately and immediately. Gloves should always be worn when cleaning up pet waste, followed by thorough handwashing with soap and water.
- Staff and volunteers (including those who foster dogs) who are at higher risk, or who have people in their household at higher risk of contracting brucellosis should not work with or foster dogs suspected of having brucellosis or who are too young to be tested.
 - Higher risk groups include: children younger than 5 years of age, people older than 65 years of age, pregnant women, and immunocompromised individuals.
- Any staff or volunteers experiencing symptoms consistent with brucellosis (such as fever, headache, fatigue, etc.) should seek prompt medical care and inform their healthcare provider of exposure or potential exposure to a dog with brucellosis.
- Rescue organizations must keep detailed, accurate, and organized records for each dog. This should include both the city and country of origin as well as a clear description of the circumstances the dog lived in (i.e. stray, had former owner, etc). It should also include the names of all individuals who handled the dog, and information about the foster or new owner, to ensure that information is promptly available for any public health disease investigation if it is needed later.
- Rescue organizations should establish and maintain a client relationship with a local, U.S.-based licensed veterinarian who will examine all imported dogs. The rescue organization should provide the veterinarian information about each dog's city and country of origin, and should follow the medical recommendations of the presiding veterinarian.
- Fosters and owners adopting dogs from your organization should be informed of the city and country or region of origin of the dog and be given all available medical records and ensure the adopter have the current contact information for the rescue organization.
- If a dog infected with *Brucella canis* is imported into Los Angeles County and adopted out, the rescue organization must:
 - Notify Public Health (213-288-7060 or vet@ph.lacounty.gov). Confirmed and possible cases must be reported to Public Health.
 - Notify the new owner (adopter or foster) of the dog's diagnosis, and discuss recommendations with the new owner. Provide the new owner with the attached Canine Brucellosis, Frequently Asked Questions (FAQ) handout.
 - Direct the new owner to consult with their veterinarian and share the diagnosis with them.
 - Direct the owner's veterinarian to consult with Public Health.