

Canine Brucellosis

(*Brucella canis*)

What is canine brucellosis?

Canine brucellosis is an infectious disease caused by *Brucella canis* (*B. canis*) bacteria that can affect dogs and humans. However, few cases of *B. canis* infection in humans have been documented.

Who is at risk for *B. canis* infection?

People who are in close contact with dogs infected with *B. canis* may be at risk. Infected dogs may intermittently shed the bacteria for the remainder of their lives. Those at increased risk of infection include dog breeders, veterinary staff, animal caretakers, and laboratorians in research or diagnostic laboratories. Typically, there is a lower risk of infection for pet owners. Severe outcomes can occur, especially in people who have suppressed immune systems or those who are pregnant.

What are the symptoms of *B. canis* infection?

Signs and symptoms of *B. canis* infection can vary and may include fever, sweats, chills, muscle aches, joint pain, severe/persistent headache, swollen lymph nodes, tiredness, loss of appetite, weight loss, vomiting, diarrhea, and swollen liver and/or spleen. Serious complications can occur involving multiple organs or systems.

How soon do symptoms appear?

The period between exposure and onset of illness is not well understood. It is thought to be variable and may range from one week to several months.

How is canine brucellosis spread?

Reproductive fluids and tissues of dogs infected with *B. canis* are considered most infectious. Other potentially infectious materials can include saliva, nasal secretions, milk, blood, urine, and feces. People can become infected if the bacteria is ingested or enters the body through a break in the skin or direct contact with mucous membranes (i.e., eyes, nose, or mouth).

When and for how long is a person able to spread the disease?

People are not able to spread the disease to others through casual contact.

How is a person diagnosed?

B. canis infections can be difficult to diagnose. If a medical provider suspects *B. canis* infection, laboratory testing should include blood cultures. Commercially available screening tests will not detect *B. canis*.

What is the treatment?

Antibiotics prescribed by a health care provider are used to treat *B. canis* infections.

Does past infection make a person immune?

It is unknown if lifelong immunity results from infection. Infections can persist for long periods of time, even years.

Should children or others be excluded from child care, school, work, or other activities if infected with *B. canis*?

No. Infants, toddlers, and school-aged children should not be excluded unless the staff determines the child is unwilling or unable to participate in activities. They should be excluded if the staff determines that they cannot care for the child without compromising their ability to care for the health and safety of the other children in the group.

All others can attend work and other functions as long as they are well enough to do so.

What can be done to prevent the spread of canine brucellosis?

Biosecurity procedures should be followed in veterinary clinics, kennels, and grooming facilities, including proper cleaning and disinfection of equipment and surfaces. Biosafety measures, including the use of appropriate personal protective equipment (PPE), are important in veterinary and laboratory settings. If a dog is diagnosed with *B. canis* infection in North Dakota, a permanent quarantine is issued by the North Dakota State Board of Animal Health. The dog must remain in isolation for the remainder of its life and will not be allowed to come into contact with people and other animals, with the exception of its designated caretakers. The dog's caretakers should use appropriate PPE when handling potentially infectious materials, including bodily fluids and feces.

Additional Information

Additional information is available by calling the North Dakota Department of Health at 800.472.2180.

This disease is a reportable condition. As mandated by North Dakota law, any incidence of this disease shall be reported to the North Dakota Department of Health.

Resources:

1. American Academy of Pediatrics. [Children in Out-Of-Home Child Care]. In: Kimberlin DW, Brady MT, Jackson MA, Long SS, eds. *Red Book: 2018 Report of the Committee on Infectious Diseases*. 31st ed. Itasca, IL: American Academy of Pediatrics; 2018:[pages 122-136].
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3. Heymann, D. L. (2015). *Control of Communicable Diseases Manual, 20th Edition*. Brucellosis. American Public Health Association. 2015: 78-81.
4. Centers for Disease Control and Prevention. (2021). Brucellosis. www.cdc.gov/brucellosis/index.html
5. Centers for Disease Control and Prevention. (2017). *Brucellosis reference guide: exposures, testing, and prevention* [PDF file]. Retrieved from <https://www.cdc.gov/brucellosis/pdf/brucellosis-reference-guide.pdf>
6. United States Department of Agriculture. (2015). Best practices for brucella canis prevention and control in dog breeding facilities [PDF file]. Retrieved from https://www.aphis.usda.gov/animal_welfare/downloads/brucella_canis_prevention.pdf
7. National Association of State Public Health Veterinarians. (2012). Public health implications of brucella canis infections in humans [PDF file]. Retrieved from <http://www.nasphv.org/Documents/BrucellaCanisInHumans.pdf>
8. Iowa State University College of Veterinary Medicine. (2021). Brucella canis. <http://www.cfsph.iastate.edu/DiseaseInfo/disease.php?name=brucella-canis&lang=en>
9. Iowa State University College of Veterinary Medicine. (2018). Brucellosis: brucella canis [PDF file]. Retrieved from http://www.cfsph.iastate.edu/Factsheets/pdfs/brucellosis_canis.pdf