

Canine Brucellosis (*Brucella canis*)

Canine brucellosis is an infectious disease caused by *Brucella canis* (*B. canis*) bacteria that can infect dogs. It can also infect humans, although the likelihood of this occurring is low. However, those in certain professions are at an increased risk of infection.

Transmission

- **Animal to Person.** 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.
 - People 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). Typically, there is a low risk of infection for pet owners.

Those at increased risk of infection include:

- **Dog breeders**
- **Veterinary staff**
- **Laboratorians in research or diagnostic laboratories**

Severe outcomes can occur, especially in people who have suppressed immune systems or those who are pregnant. People can become sick when they come into contact with

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| • Reproductive fluids | • Blood |
| • Saliva | • Urine |
| • Nasal secretions | • Feces |
| • Milk | |

People are not able to spread the disease to others through casual contact. It is unknown if lifelong immunity results from infection. Infections can persist for long periods, even years.

Symptoms

The incubation period is not well understood, but it is thought to range from one week to several months

Symptoms may include:

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| • Fever | • Tiredness |
| • Sweats | • Loss of appetite |
| • Chills | • Weight loss |
| • Muscle aches | • Vomiting |
| • Joint pain | • Diarrhea |
| • Severe/persistent headache | • Swollen liver and/or spleen |
| • Swollen lymph nodes | • Serious complication involving multiple organs or systems |

Diagnosis

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*. **Providers should consult with public health when testing for *B. canis*.**

Prevention

- **If a dog is diagnosed with *B. canis* in North Dakota, a permanent quarantine is issued by the North Dakota State Board of Animal Health**
 - **It is recommended to euthanize to prevent dog-to-dog transmission, human exposures, and the health of the pet;** *B. canis* is a progressive disease that can drastically reduce a dog's quality of life.
 - **If euthanization is declined,** the dog must remain in isolation for the remainder of its life and will not be allowed to come into contact with other dogs and people, except for its caretakers.
 - **The dog's caretakers should use appropriate PPE** when handling the dog's bodily fluids and feces.
- Biosecurity measures should be followed in veterinary clinics, [kennels](#), and grooming facilities, including
 - **Proper cleaning and disinfecting of equipment and surfaces.**

Treatment

After a diagnosis is made, a health care provider may prescribe antibiotics.

For more information about the treatment contact your health care provider or visit [B. canis | CDC](#).

Exclusion Guidance

Individuals with *B. canis* should not be excluded from work, school, or child care unless the [general exclusions apply](#).

For additional information about *B. canis*, contact the North Dakota Department of Health and Human Services', Division of Public Health, at 800.472.2180.

This disease is a reportable condition in humans. As mandated by North Dakota law, any incidence of this disease in humans shall be reported to the North Dakota Department of Health and Human Services. *B. canis* identified in dogs is reportable to North Dakota Department of Agriculture, Office of the State Veterinarian.

Resources:

1. Kimberlin, D. W., Barnett, E. D., Lynfield, R., Sawyer, M. H. (2021) Red Book: 2021- Report of the Committee on Infectious Diseases. 31st ed. American Academy of Pediatrics. [Management and Prevention of Infectious Diseases] [122-133].
2. Kimberlin, D. W., Barnett, E. D., Lynfield, R., Sawyer, M. H. (2021) Red Book: 2021- Report of the Committee on Infectious Diseases. 31st ed. American Academy of Pediatrics. [Management and Prevention of Infectious Diseases] [238-240].
3. Centers for Disease Control and Prevention. (2021, November 2). *CDC – Brucellosis*. Centers for Disease Control and Prevention. Retrieved May 26, 2023, from <https://www.cdc.gov/brucellosis/index.html>
4. Centers for Disease Control and Prevention. (2012, November 12). *CDC – Brucellosis - Veterinarians*. Centers for Disease Control and Prevention. Retrieved June 1, 2023, from <https://www.cdc.gov/brucellosis/veterinarians/index.html>
5. 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>