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## What is brucellosis?

Brucellosis is a disease caused by the bacterium *Brucella* that affects many types of animals, including sheep, goats, cattle, deer, elk, pigs, and dogs. People can become infected after coming into contact with infected animals or consuming unpasteurized (raw) milk or cheese.

## Who gets brucellosis?

Brucellosis is found throughout the world, but is more common in certain areas, including the Mediterranean Basin (Portugal, Spain, Southern France, Italy, Greece, Turkey, North Africa), Mexico, South and Central America, Eastern Europe, Asia, Africa, the Caribbean, and the Middle East. In the United States, brucellosis is uncommon, with 100–200 cases occurring each year. In Virginia, an average of one case of brucellosis is reported each year and cases are usually associated with eating unpasteurized, imported dairy products (such as cheeses). Certain groups of people are at higher risk of getting brucellosis, including people who work in slaughterhouses or the meat-packing industry, veterinarians, laboratory workers, and hunters.

## How is brucellosis spread?

People can become infected by eating or drinking unpasteurized milk or milk products (such as cheeses), having the bacteria enter the body through a skin wound, eye, nose or mouth after close contact with body fluids or tissues from an infected animal, or breathing in the organism (uncommon, but can occur among laboratory workers). Person-to-person spread of *Brucella* is extremely rare, but can occur through sexual contact with an infected person, by having infected tissues transplanted into the body, or by the bacteria passing from an infected mother to her infant during breastfeeding.

## What are the symptoms of brucellosis?

Brucellosis initially causes a flu-like illness with fever, chills, headache, fatigue, and pain in the muscles, joints, or back. The fever might go up and down over a 24-hour period (another name for brucellosis is ‘undulant fever’). Other symptoms can include loss of appetite and weight loss. Brucellosis can also cause long-lasting (chronic) symptoms including fever, chronic tiredness, and swelling in other body parts, such as the joints, testicle and scrotum area, lining of the heart, liver, spleen, brain, or spinal cord. Although rare, death can occur.

## How soon after exposure do symptoms appear?

Symptoms usually appear 2–4 weeks after exposure, with a range of 5 days–6 months.

## **How is brucellosis diagnosed?**

Brucellosis is diagnosed by identifying the bacteria in blood, bone marrow, or other body fluids or by identifying antibodies against the bacteria in acute and convalescent serum samples that are collected at least two weeks apart. Knowing information about an ill person's exposure to animals or

animal products can also help the healthcare provider make the diagnosis. If culture is performed, the laboratory should be notified that brucellosis is suspected because laboratory workers need to take special precautions to avoid getting brucellosis.

## What is the treatment for brucellosis?

Brucellosis is treated with a combination of antibiotics. It is very important to take the medications as directed by the healthcare provider and for the whole time, even if the symptoms go away. Otherwise, patients might experience a relapse that might be harder to treat. Depending on the timing of treatment and severity of illness, recovery might take a few weeks to several months.

## How can brucellosis be prevented?

Make sure that all milk and milk products (e.g., butter, cream, cheese, ice cream) that you consume have been pasteurized. Meat should be cooked thoroughly. If handling sick or dead animals or animal tissues or if assisting an animal giving birth, wear protective clothing (glove and eye protection). If working in a laboratory, wear protective clothing (gloves, gown, and eye protection) and take special safety precautions. When traveling to areas where brucellosis is common, avoid contact with livestock and consumption of unpasteurized (raw) milk or milk products. For accidental exposures to *Brucella*, such as those involving laboratory workers or veterinarians who are exposed while vaccinating cattle, antibiotics might be prescribed to prevent infection. There is no vaccine available for humans.

## Could *Brucella* be used for bioterrorism?

*Brucella* is classified as a Category B bioterrorism agent by the Centers for Disease Control and Prevention (CDC). Category B agents are the second highest priority agents for bioterrorism (behind Category A agents) because they could be relatively easy to disperse and could cause many people to become seriously ill or die. If *Brucella* were used as a bioterrorism agent, it might be released in the air or through contaminated food.

## How can I get more information about brucellosis?

- If you have concerns about brucellosis, contact your healthcare provider.
- Call your local health department. A directory of local health departments is located at the [VDH Local Health Districts page](#).
- Visit the Centers for Disease Control and Prevention website at [the CDC's page on brucellosis](#).

### [Brucellosis: Overview for Health Care Providers](#) (Updated August 2023)

Two page summary of: Organism, Reporting, Infectious Dose, Occurrence, Natural Reservoir, Route of Infection, Communicability, Case-fatality Rate, Risk Factors, Incubation Period, Clinical Manifestations, Differential Diagnosis, Laboratory Tests/Sample Collection, Treatment, Vaccine

**Brucellosis: Guidance for Health Care Providers (Updated August 2023)**

Key Medical and Public Health Interventions After Identification of a Suspected Case

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