



# Brucellosis

Last update: 2025-06-16

## Key facts

- Brucellosis, also known as “undulating fever” or “Mediterranean fever”, is a zoonotic disease caused by bacteria of the genus *Brucella*, primarily affecting livestock like cattle, sheep, goats, and pigs. The most common species causing human infection are *Brucella melitensis* (which is the most common), *Brucella abortus*, *Brucella suis*, and *Brucella canis*.
- Brucellosis is present worldwide, especially in regions where livestock management and veterinary services are underdeveloped, including parts of Africa, the Mediterranean, the Middle East, and Latin America.
- Humans can acquire Brucellosis through direct contact with infected animals, their tissues, or by consuming contaminated animal products, such as unpasteurized milk or cheese.

## Transmission

- Consuming raw or unpasteurized dairy products, including milk, cheese, and butter, made from infected animals.
- Handling infected animal tissues, organs, blood, urine, or placentas, particularly during slaughter, veterinary procedures, or meat processing.
- Inhaling airborne bacteria, which can occur in laboratory settings, during handling of infected animals
- Environmental exposure in areas with high levels of animal waste.
- From an infected mother to her child during childbirth or through breastfeeding.
- Person-to-person is not common

## Most Vulnerable to Contracting the Disease

- Individuals working in frequent contact with animals or animal products, such as farmers, veterinarians, abattoir workers, and laboratory personnel.
- Consumers of unpasteurized dairy
- Travelers to or living in endemic areas.

## Signs and symptoms

### In animals

- Typically, the sign of the disease in animals is not evident until reproductive signs occur
- Abortion in infected pregnant female animals (sometimes) or some may give birth to give birth to weak and vulnerable animals.
- Swelling of the testicles in males (sometimes)
- Arthritis (sometimes)
- In horses, there may be a swelling of the neck or back (called fistulous withers or poll evil) Infected pregnant mares may either abort

*Note: One of the most important implications of brucellosis is that it causes poor reproductive performance, due to abortions, infertility, retention of placenta, stillbirth or birth of weak offspring. This results in huge economic losses to dairy, sheep, goat and pig farmers.*

### In humans

- Acute Phase
  - Fever, often fluctuating (undulant fever)
  - Sweating, particularly at night
  - Fatigue and general weakness
  - Muscle and joint pain
  - Headaches
- Chronic Phase
  - Persistent or recurrent fevers
  - Arthritis and joint pain
  - Swelling of the testicles and scrotum area
  - Neurological symptoms such as depression, fatigue, and headaches

## What can you do to prevent and control an epidemic?

- The most effective prevention strategy is the elimination of infection in animals.
- Monitoring the community and identifying sick people and animals
  - Detect sick people and animals quickly for referral to the appropriate health facilities
  - Monitor the community for clusters of sick or dead animals
    - Report any clusters to your supervisor, animal health and welfare authorities and/or health authorities
    - Encourage quarantining sick animals from healthy ones
      - Discourage community members from taking sick animals to markets or other places where they may encounter other animals or humans

- Encourage minimal contact between sick animals and humans
- Limit contact between sick and healthy animals, stop sick animals from reaching the market, etc.)

## Treatment and management

- Vaccination of cattle, goats and sheep is recommended in areas with high prevalence rates of the disease among the animal populations.
- Refer suspected human and animal cases for screening and treatment
  - Refer people to the appropriate health facilities
  - Notify animal health and welfare authorities and professionals or care providers (such as veterinarians) of suspected cases in animals
- If antibiotic and supportive treatment is available (for animals or people), encourage people to seek and complete treatment as directed by health care providers
- Provide psychosocial support to the sick person and their family members

## Safe animal handling

- Safe handling and slaughtering practices including supervision and meat inspection
- People working with animals or animal products should wear protective clothing and equipment and follow recommended hygiene practices

## Personal protection and hygiene

- Promote handwashing with soap
  - BEFORE: preparing food; eating; feeding a child; treating wounds; or caring for sick people
  - AFTER: using the toilet or cleaning a baby; touching garbage or waste (especially when dealing with rodent waste); touching or feeding animals; blowing nose, coughing or sneezing; treating wounds; or caring for sick people
- In agricultural work and meat-processing, workers should wear protective clothing and ensure correct handling and disposal of afterbirths, animal carcasses and internal organs

## Food and water hygiene and safety

- Cook animal products thoroughly (including meat, milk and offal).
- Boil/heat milk before drinking it to kill harmful germs and prevent disease that can spread from animals to humans.

## Social mobilisation and health promotion

- In countries where eradication in animals through vaccination or elimination of infected animals is not feasible, prevention of human infection is primarily based on raising awareness, food-safety measures, occupational hygiene and laboratory safety.
- Establish education campaigns about avoiding raw, untreated and unsafe milk products.
- Find out the specific advice being given by health and other relevant animal health authorities
  - Liaise with health professionals in both human and animal health sectors for health advice and promotion messages for best health practices.
  - Promote recommended health practices (such as safe animal handling and use of protective clothing and equipment)
- Model following this advice and inform community members of current health practice advice
- Offer support and encouragement to people to help them follow the advice
  - Try to gain understanding about if and why health advice is not being followed
  - With the advice of your supervisor and health authorities, work with communities to overcome barriers to following health advice and recommended practices

## Mapping and community assessment

- Make a map of the community.
- Mark the following information on the map:
  - How many people and animals have fallen sick with brucellosis? Where?
  - How many people have died? Where? When?
  - How many animals have died? Where? When?
  - Who and where are the vulnerable people? (where are farms, slaughterhouses, wool mills, etc?)
  - Where are the handwashing facilities in the community? (are there stations at animal markets and other areas where livestock gather?)
    - Are soap and water always available?
  - Where are the local health facilities and services? (include traditional healers)
- Record the following information on the back of the map:
  - When did people and animals start to fall sick with brucellosis?
  - How many people live in the affected community? How many are children under five years of age? How many people work with livestock regularly?
  - Do people cook meat and milk thoroughly before eating it?
  - Do any animal health agencies, veterinarians or agriculture ministry agencies work in the area?
  - What are the community's habits, practices and beliefs about caring for and feeding sick people?
  - What are the community's habits, practices and beliefs about care and slaughter of animals?
    - Are there societal, cultural or religious beliefs or perceptions about the care and slaughter of animals?

- What are the community's habits, practices and beliefs about sick or dead animals?
  - How do people dispose of animal carcasses (by burning, burying, eating, etc.)?
- Is a social mobilisation or health promotion programme in place?
- Which sources do people use/trust the most for information?
  - Are there rumours or misinformation about brucellosis? What are the rumours?
- What role do women play in livestock management (including caring for animals, gathering animal feed and selling animal products in markets)?

## Other resources

- World Health Organization (WHO); [Brucellosis](#); 2020
- World Health Organization (WHO); [Brucellosis in Humans and Animals](#); 2006
- <https://www.who.int/publications/i/item/9789241547130>
- Centers for Disease Control and Prevention (CDC); [About Brucellosis](#); 2024
- World Organisation for Animal Health (WOAH); [Brucellosis](#). (n.d.)
- World Organisation for Animal Health (WOAH); [Brucellosis](#); 2022