Communicable Diseases Factsheet

Brucellosis

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Brucellosis is an infection that can be transmitted to humans from some animals such as cows, sheep, goats and pigs. While this disease is common in many parts of the world, it is rare in Australia. Cases in NSW usually result from contact with feral pigs or from consuming unpasteurised dairy products while overseas.

What is brucellosis?

Brucellosis is an infection caused by the bacterium *Brucella* that is spread to humans from infected animals. Although animals are infected worldwide, brucellosis is well controlled in most developed countries including Australia. Rarely, brucellosis infection occurs in humans.

Different types of *Brucella* bacteria infect different animals. There are five types of *Brucella* bacteria that are known to cause brucellosis in humans. The following three are of particular importance to Australian residents and travellers:

- *Brucella suis* usually infects pigs. *Brucella suis* was last diagnosed in NSW domestic pigs in 1968. *Brucella suis* infection is widespread in Queensland's feral pig population and it has also been detected in the feral pig population in northern New South Wales (NSW). *Brucella suis* has also been detected in dogs that have been pig-hunting or that have been fed raw feral pig meat.
- *Brucella melitensis* usually infects goats, sheep and camels. It is not found in Australia but occurs in many areas overseas, particularly in the Mediterranean, Middle East, Central Asia and Central America.
- *Brucella abortus* usually infects cattle. Bovine brucellosis (brucellosis in cattle) has been eradicated from all states of Australia, including NSW, since 1989.

Although *Brucella ovis* is present in sheep flocks across NSW, it is not known to cause human disease.

What are the symptoms?

Brucellosis typically begins with a flu-like illness. This may include fever, headache, weakness, drenching sweats, chills, weight loss, joint and muscle pain, and generalised aches. Inflammation of the liver and spleen, and gastrointestinal or respiratory symptoms may also occur. In males, the testicles may become inflamed. Rarely, the valves inside the heart may become infected and this can be fatal.

The symptoms usually start 5-60 days after a person has been infected.

Infection typically lasts for days or months but can occasionally last for a year or more and may recur. Disease may be mild and some people get no symptoms of infection

Pregnant women and their babies are at risk of developing severe disease. If left untreated, infection may cause birth defects, spontaneous abortion or fetal death.

How is it spread?

In Australia, people may become infected through:

- direct contact with tissues or body fluids of an infected animal (such as feral pigs or dogs) – the risk is greatest when a person has skin cuts or grazes that come into contact with infected tissues and body fluids like blood, urine, vaginal discharges, birth products and aborted foetuses
- eating undercooked meat from an infected animal

Additionally travellers to countries where brucellosis is more common may become infected through consuming unpasteurised dairy products (such as raw milk and unpasteurised cheeses from sheep, goats, cows or camels) or undercooked meat from an infected animal

Uncommonly, the bacteria can be inhaled and cause disease, such as in laboratory workers who work with *Brucella* cultures.

The infection is very rarely passed from one human to another.

Who is at risk?

- People who handle or otherwise come into contact with animals, their tissues or body fluids that are infected with *Brucella* bacteria. In Australia, feral pig hunters are at greatest risk of infection. Infected dogs may also be a potential source of infection for people.
- People travelling to areas where brucellosis is common and who consume raw/unpasteurised dairy products or come into contact with infected animals. These areas include Africa and Europe (especially around the Mediterranean - Portugal, Spain, Southern France, Italy, Greece and Turkey), the Middle East, Central and South America and Asia.
- Rarely people may become infected after eating imported foods (e.g. unpasteurised cheese) made from raw animal products in countries where brucellosis occurs in animals.
- People who work in microbiology laboratories handling *Brucella* cultures may be at risk
- Pregnant women and their babies who are at risk of developing severe disease.

How is it prevented?

Feral pig hunters and others who are in contact with feral pigs should follow the precautions outlined in the *Brucellosis & Feral Pig Hunting Factsheet* to protect themselves protect themselves, their family and dogs against brucellosis and other common diseases transmitted from animals

Thoroughly cook meat from feral pigs (and other game) before eating – freezing, smoking, drying and pickling do not kill the bacteria that cause brucellosis

Those vulnerable to severe disease (such as pregnant women) should avoid all contact with feral pigs, hunting activities and pig hunting dogs

If your dog has been diagnosed with brucellosis, follow the recommendations outlined in the *Brucellosis in Dogs Information Sheet* from the NSW Department of Primary Industries (DPI) to prevent spreading the infection to humans and other domestic animals

Travellers to countries where brucellosis is more common should:

- avoid eating or drinking raw/unpasteurised dairy products (such as raw milk and unpasteurised cheeses from sheep, goats, cows or camels) – raw milk can be boiled before consumption if pasteurisation is not available
- avoid eating or drinking undercooked meat
- avoid direct (bare skin) contact with animal tissues, blood and other body fluids.

How is it diagnosed?

If brucellosis is suspected, a doctor will usually collect two blood samples, two or more weeks apart to check antibodies against the bacteria. This test cannot reliably differentiate between the different *Brucella* species. The doctor may also take samples of fluid or tissue from affected body parts to culture (grow) the bacteria.

How is it treated?

Effective treatment usually involves a combination of antibiotics for at least six weeks. Occasionally, antibiotics may need to continue for months. Despite treatment, brucellosis can recur. If symptoms persist, consult your medical practitioner.

What is the public health response?

Brucellosis infection in humans is a notifiable medical condition in NSW. Local public health units will contact those infected to try and identify the likely source of infection. If brucellosis is acquired in NSW or if a domestic animal is infected, the NSW DPI may be consulted to help control the spread of infection in animal populations.

Further information

For further information about brucellosis in humans:

- See the NSW Health *Brucellosis & Feral Pig Hunting Factsheet* http://www.health.nsw.gov.au/Infectious/factsheets/Pages/brucellosis-and-pig-hunting.aspx
- Call your local Public Health Unit on 1300 066 055.

For further information about brucellosis in animals, see the NSW DPI websites on:

- *Being a responsible pig dogger: Hunt safe, hunt legal* http://www.dpi.nsw.gov.au/hunting/game-and-pests/be-a-responsible-pig-dogger
- *Brucellosis in dogs* ; http://www.dpi.nsw.gov.au/content/biosecurity/animal/humans/brucellosis-in-dogs
- *Brucellosis in pigs* http://www.dpi.nsw.gov.au/content/agriculture/livestock/pigs/health/brucellosis