

Tularaemia

Tularaemia is a rare bacterial disease that is usually acquired from handling infected animals, bites of infected ticks or deer flies or from contaminated food or water. In Australia, ringtail possums have been associated with human infection and other wildlife may carry the disease. Using insect repellent and wearing long sleeves, pants and socks and wearing gloves when handling dead animals can help prevent infection.

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What is tularaemia?

Tularaemia is a rare disease caused by *Francisella tularensis* bacteria. Infections usually occur through handling of infected animals, bites of an infected ticks, consumption of contaminated food, or contact with contaminated water. Most infections are reported from the northern hemisphere.

To date there have been four locally acquired cases of tularaemia reported in Australia. Three infections have been linked to bites/scratches from infected possums: two confirmed cases in Tasmania (one linked to a ringtail and the other to an unidentified species of possum) and a probable case in NSW (linked to a ringtail possum). The fourth infection is believed to have been acquired in a laboratory setting, and the implicated species of Australian animal has not been identified.

What are the symptoms?

Symptoms usually appear suddenly and include high fever, chills, fatigue, general body aches, headache and nausea. Other symptoms depend on where the bacteria entered the body. The infection can cause the following:

- a skin ulcer at the site of the bite or skin exposure, and swelling of the nearby lymph glands (armpit or groin)
- irritation and swelling of the eye and swelling of the lymph glands in front of the ear
- sore throat, mouth ulcers, tonsillitis and swelling of the lymph glands in the neck
- cough, chest pain and difficulty breathing.

Symptoms usually develop between 3 and 5 days after being infected but can be delayed up to 14 days. Most infected people recover fully with the appropriate treatment.

How is it spread?

The bacteria can enter the body through the skin, eyes, mouth, throat or lungs. Infection can be acquired by:

- Skin contact with sick or dead *infected* animals, including bites/scratches
- Bites of infected blood-feeding arthropods, such as tick and deer fly
- Drinking contaminated water or eating undercooked meat of an infected animal

- Contact of broken skin with natural water bodies, such as lakes or rivers, contaminated by infected animals
- Laboratory exposure
- Inhalation of contaminated dusts or aerosols.

In Australia, contact with an *infected* ringtail possum (including bites and scratches) can transmit the disease. While no other Australian mammals or insects have been found to be infected with tularaemia, one case in NSW was likely exposed during necropsy of Australian wildlife, which did not include possum species. As a result, other potential animal sources in Australia are suspected but have not been clearly identified.

People could potentially be exposed as a result of bioterrorism. It is not spread from person to person.

Who is at risk?

Anyone who comes into contact with the bacteria are at risk of infection. Tularaemia occurs in parts of North America, Europe, Russia, China and Japan. People who are bitten by tick or deer flies, drink untreated water or hunt or skin animals in affected areas may be at risk.

In Australia, persons who have had contact with sick or dead ringtail possums, including being bitten or scratched, may be at increased risk of getting the disease. Risk from other sick or dead mammals cannot be excluded.

How is it prevented?

Travellers to affected countries should avoid contact with tick and deer flies by using insect repellent and wearing long sleeves and pants and socks, drinking only treated water and eating well cooked meat. In Australia, special care should be taken when dealing with handling sick or dead ringtail possums.

Gloves should be worn when hunting or skinning animals especially possums, rabbits, hares, muskrats and prairie dogs. Care should be taken when mowing or landscaping not to mow over sick or dead animals. Dust masks can reduce the risk of inhaling the bacteria.

If you develop symptoms or think you have been exposed, consult your GP as early as possible.

How is it diagnosed?

Your doctor will diagnose the infection based on the symptoms and a sample from the affected area. However the diagnosis can only be confirmed through specialised laboratory testing.

How is it treated?

Antibiotics are required to treat the infection.

What is the public health response?

Laboratories are required to notify cases of tularaemia on diagnosis. The public health unit will follow up with infected individuals to identify the source. Should it appear that the infection was acquired in Australia a public health investigation will take place to prevent further cases.

For further information please call your local Public Health Unit on **1300 066 055** or visit the New South Wales Health website www.health.nsw.gov.au.