



Australian endemic tick-borne diseases – Australian spotted fever

Important! Watch this video about how to safely remove a tick¹

<https://www.allergy.org.au/patients/insect-allergy-bites-and-stings>

What is Australian spotted fever?

Australian spotted fever (ASF) is a bacterial infection transmitted to humans in Australia through the bite of an infected tick. The bacterium that causes ASF is called *Rickettsia honei* subsp. *marmionii*. ASF is a similar illness to Flinders Island spotted fever (FISF). It is a recently recognised disease in Australia, with seven cases identified and described, and has been found in the eastern half of Australia.

ASF is part of a group of illnesses caused by *Rickettsia* bacteria, which includes other spotted fever infections such as Queensland tick typhus (QTT), FISF (see other factsheets on these topics), and typhus infections. As a recently described disease in Australia, less is known about ASF than the other Australian tick-borne rickettsial diseases, QTT and FISF.

What are the symptoms?

From the seven reported cases of ASF, the symptoms people experienced were relatively mild and were consistent with rickettsial spotted fever group disease in Australia. The most common acute (immediate) symptoms of ASF experienced by the people included fever and headache, followed by joint pain (arthralgia), muscle pain (myalgia), cough, and rash. Less common symptoms included nausea, sore throat (pharyngitis), swollen glands (lymphadenopathy) and a scab at the site of the tick bite (eschar).

While ASF is similar to FISF, in the people who have been infected with the bacteria that cause ASF the rash did not appear on the palms of their hands or the soles of their feet, unlike in FISF infection.

How is it spread?

ASF is transmitted to humans by a bite from a tick infected with the bacterium that causes ASF. The only known tick that can host the bacterium that causes ASF is called *Haemaphysalis novaeguineae*. This tick does not have a common name. *H. novaeguineae* is known to bite numerous animals, as well as humans, and is found in both northern Australia and Papua New Guinea. These ticks are not known to live in southern Australia. While *H. novaeguineae* was not recognised as a transmitter of human pathogens this tick was removed from a patient from Queensland who developed ASF.

¹ An allergy project supported by the National Allergy Strategy, Australasian Society of Clinical Immunology and Allergy, Allergy & Anaphylaxis Australia, and Tick-induced Allergies Research and Awareness.

Researchers advise further research is needed to find out exactly where the tick *H. novaeguineae* lives in northern Australia and how abundant it is there.

ASF is not spread from person to person and people do not need to isolate if they have ASF.

How do people know if they have been bitten by a tick?

A tick bite usually looks like a small dark freckle with a scab, or mole, on the skin. A magnifying glass may be helpful to confirm a tick is present.

As ticks are very small and their bites do not usually hurt, ticks can easily be overlooked on the body, especially if the tick is in a sheltered spot. Ticks prefer soft skin and hairy areas. People may be unaware when they are bitten by a tick as the tick can inject small amounts of saliva with anaesthetic properties so that the person cannot feel that the tick has attached itself. In addition to the bite being painless, often the person will not sense a tick moving on their skin. However, once it starts to feed, it becomes noticeable, enlarging as it becomes filled with blood and eggs.

Who is at risk?

Rickettsial infections such as ASF are typically seen in residents of areas where the infected ticks are regularly found (endemic), as well as in campers, travellers, and hikers to these areas. In the seven reported cases of ASF, adults and children were affected with people aged from 9 years to 55 years of age. Little is known about ASF and there is no available information on activities that put people at risk of becoming infected with ASF.

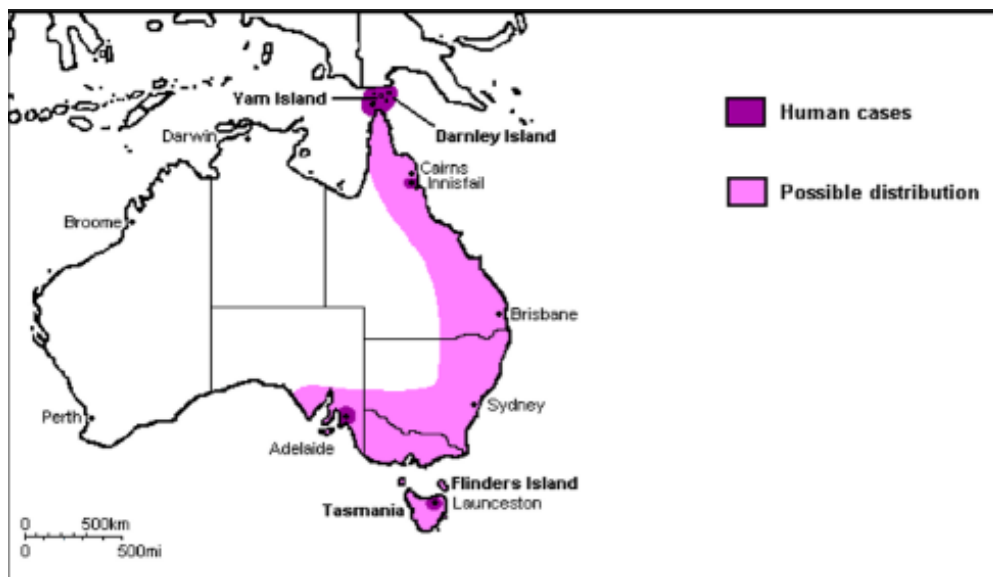
People who have had a rickettsial infection probably develop long lasting immunity, which is likely to be the case with ASF. People of all ages, genders, and ethnicities who are not immune to ASF (through having previously had the infection) are susceptible to the infection if bitten by an infected tick. Nonimmune people are at risk of infection for as long as they remain in areas where infected ticks are regularly found.

Risk areas for ASF infection in Australia

The seven cases of ASF that have been reported and described were widely distributed throughout eastern Australia (see Figure 1 overleaf), including cases on the eastern seaboard of Australia (including the Torres Strait), Tasmania and South Australia. The specific locations of the cases were:

- Port Willunga, South Australia
- Darnley Island, Queensland (two patients)
- Yam Island, Queensland
- Innisfail, Queensland
- Iron Range, Queensland
- Launceston, Tasmania.

Figure 1: Distribution of Australian spotted fever (Public domain)



Public domain: Graves, S. (n.d.). Update on Australian Rickettsial infections.

Risk seasons for ASF infection

From the seven reported cases of ASF, cases most commonly occurred in autumn. The reported cases of ASF occurred between February and June (late summer and early winter). While ASF is similar to the other rickettsial diseases FISF and QTT, the seasonal onset of ASF is different to cases of FISF which have their peak onset in summer, and is different to QTT which has its peak onset in late winter. However, little is known about ASF and the available information on risk seasons for ASF infection is based on seven reported cases. Therefore, until more information is available, it should be assumed that people can be at risk of ASF infection at any time of the year.

How is it prevented?

There is no vaccine available for ASF. Follow the guidance and advice in the *Prevention of tick bites in Australia* factsheet for information on personal preventive strategies to prevent tick bites on people and pets, and preventing tick bites around the home.

See the *Management of tick bites in Australia* factsheet for information about safely managing tick bites.

How is it diagnosed?

If you think you have ASF, please see your GP or a doctor. ASF can be difficult to diagnose as early symptoms can be non-specific and may overlap with other diseases that are transmitted by organisms other than ticks, as well as a number of chronic diseases.

Further information about the diagnosis of ASF can be found in the Debilitating Symptom Complexes Attributed to Ticks (DSCATT) Clinical Pathway (which is available on the Australian Government Department of Health and Aged Care website at www.health.gov.au using the search term 'DSCATT clinical pathway').

How is it treated?

ASF is treated with specific antibiotics. The DSCATT Clinical Pathway has further information on the treatment of ASF.