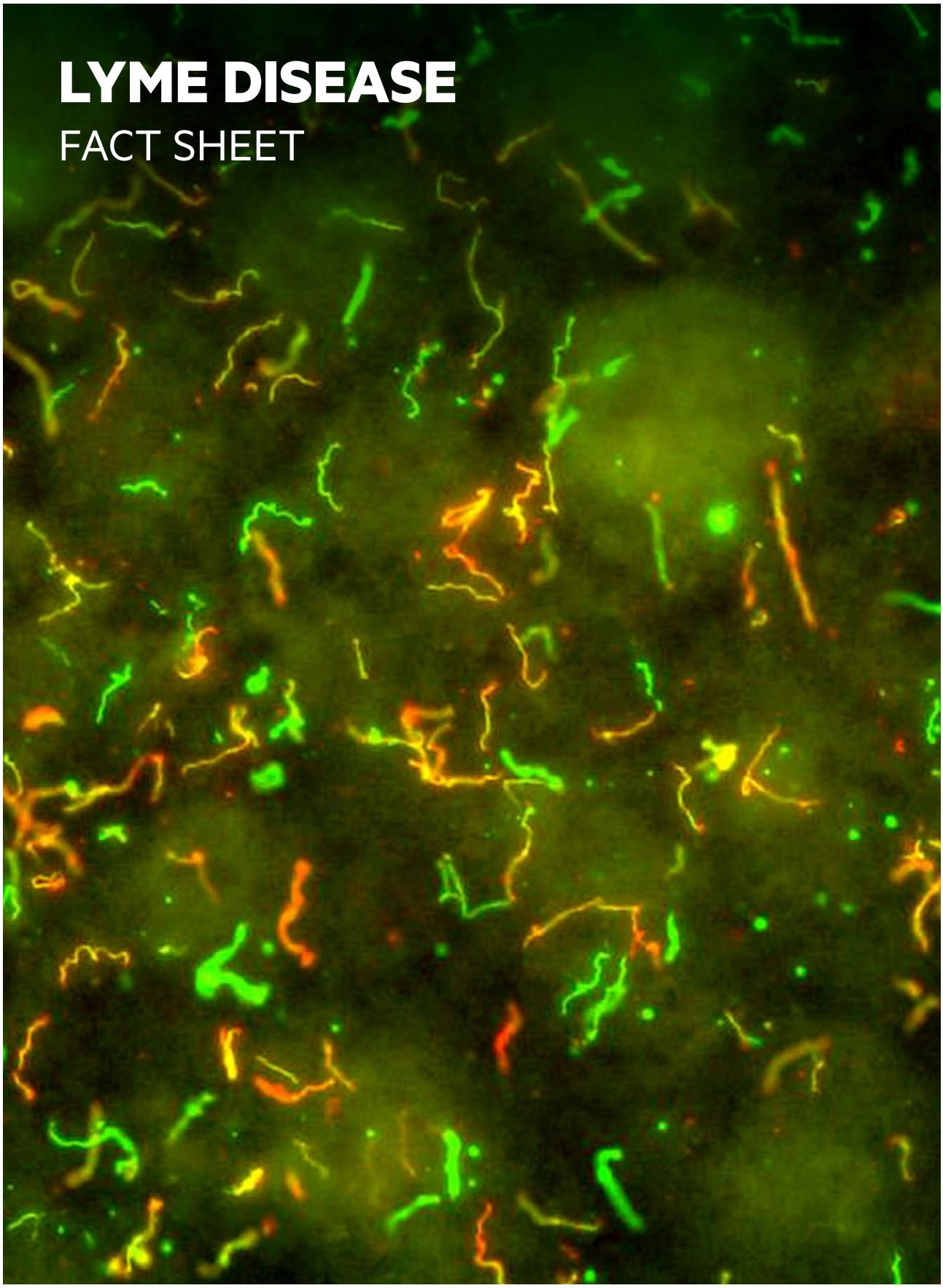
QUEENSLAND MUSEUM

LYME DISEASE

FACT SHEET



Q26-027

Queensland Government

WHAT IS LYME DISEASE?

Lyme disease is a zoonotic disease caused by *Borrelia burgdorferi* bacteria. It is a vector-borne disease transmitted to humans through the bite of infected ticks.

Lyme disease is considered endemic in North America and Europe but not in Australia. *B. burgdorferi* has not been found in Australian ticks or animals.

Natural hosts

Rodents are the natural reservoir hosts for *B. burgdorferi*. Deer are not reservoir hosts for the bacteria but are vector reservoir hosts and maintain tick populations.

How is it spread?

Infection is spread to humans through the bite of infected ticks. Only some species of ticks are capable of being infected by, and carrying, *B. burgdorferi* bacteria, and only these ticks can spread Lyme disease.

Exposure for Australians occurs during overseas travel to regions with endemic Lyme disease.

Lyme disease cannot be transmitted directly from animal to human or from human to human.

Only the tick vector is capable of transmitting the disease between animals or between humans. Ticks become infected when feeding on a viraemic host, primarily rodents.

Dogs and cats can get Lyme disease and carry infected ticks, but they don't spread the bacteria directly to you.

Who is at risk?

- Anyone outdoors for work or recreation, particularly bushwalking, in regions where Lyme disease is endemic.
- People who come into contact with wild or domestic small mammals, especially rodents, in regions where Lyme disease is endemic.

Similar tick-borne illnesses do occur in Australia, but not Lyme disease.



What are the symptoms?

In animals

There is little or no clinical effect on wildlife. Many infected animals show no signs at all. Lyme disease symptoms in dogs often appear months after a tick bite and may include:

- fever
- lethargy
- loss of appetite
- shifting lameness/joint pain
- swollen lymph nodes
- increased thirst/urination
- behavioural changes
- severe kidney issues (nephritis) or neurological problems.

In humans

The first symptom is usually a pink or red rash that starts as a small red spot and gradually spreads to a much larger circle with a characteristic bullseye appearance called *erythema migrans*. This normally happens 3–32 days after being bitten by an infected tick. Not everyone with Lyme disease gets the rash.

A flu-like illness follows, that, if left untreated, can cause infection in the brain and membranes surrounding the brain (meningoencephalitis), and infection in or around the heart (endocarditis, myocarditis or pericarditis).

Symptoms may include:

- fever
- fatigue
- headache
- joint pain
- rash
- neurological symptoms.

⚠ Symptoms can become chronic if left untreated.

How can I prevent infection?

Currently, there is no vaccine available. Prevention of tick-borne diseases, including Lyme disease, is primarily achieved through minimising tick bite exposure and prompt removal of any attached ticks.

Prevention measures include:

- Avoid areas where Lyme disease is endemic when travelling overseas.
- Use insect repellent (DEET or picaridin; spray clothes and hats).
- Wear protective clothing outdoors (long pants tucked into socks, a wide-brimmed hat and a long-sleeved shirt).
- When returning from an area known to have ticks, remove clothing and search for ticks, especially behind the ears, on the back of the head, in the groin, armpits and backs of the knees.

ⓘ The best prevention measure is tick avoidance. If you do get bitten, carefully remove the whole tick using tweezers with a fine point after applying an ether-containing spray like Tick Off. Trying to suffocate it with petroleum jelly or poison it with nail polish will likely make it burrow deeper.

What treatments are available?

Most cases of Lyme disease can be treated successfully with a few weeks of an appropriate antibiotic. These are more effective when given early in the infection.

ⓘ Lyme disease treatment outcomes are usually good.

If you think you may have been exposed to Lyme disease, please contact your doctor or public health agency for further advice.



Cover: *Borrelia burgdorferi*, the bacteria that causes Lyme disease. Courtesy: Alamy/BSIP
Page 2: An *Ixodes scapularis* tick (commonly known as a deer tick), found in North America. Courtesy: Alamy/Jason Ondreicka
Page 3: Use insect repellent to avoid being bitten by ticks. It is a good idea to spray clothing and hats as well as exposed skin. Courtesy: Alamy/Zbynek Pospisil

Last updated: June 2026

Disclaimer

This fact sheet is managed by Queensland Museum for information purposes only. It includes information drawn from a variety of sources external to Queensland Museum. Although reasonable care has been taken in its preparation, Queensland Museum does not guarantee or warrant the accuracy, reliability, completeness or currency of the information. This fact sheet should not be relied on in place of professional veterinary or medical consultation. Queensland Museum is not liable for any loss, damage, cost or expense incurred by or arising from any person relying on information in this fact sheet. Individuals should accordingly make their own assessments and enquiries to verify the accuracy of the information provided.