

Lyme Disease

Environmental Health – Factsheet

What is Lyme disease?

Lyme disease is a bacterial infection that can be transmitted to people through the bite of a tick. In Manitoba, blacklegged ticks, (deer ticks) may carry the Lyme disease bacteria (*Borrelia burgdorferi*).

What are blacklegged ticks?

Blacklegged ticks (*Ixodes scapularis*) exist in three active stages: larva, nymph and adult. The life cycle of blacklegged ticks takes at least three years to complete and each active stage usually survives for up to one year. Blood is required by the tick to move to the next stage. Unfed larvae and nymphs are light in colour and very difficult to see (Figure 1).

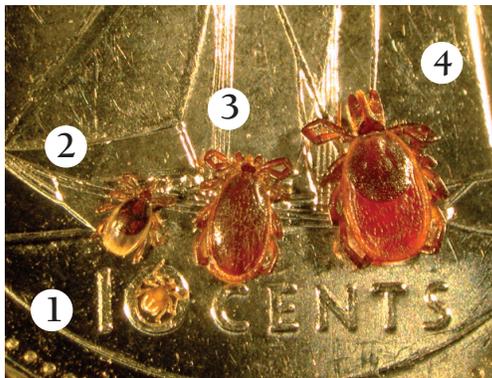


Figure 1: Life stages of the blacklegged tick (1-larva, 2-nymph, 3-adult male, 4-adult female). Sizes presented in relation to underlying 10-cent coin.

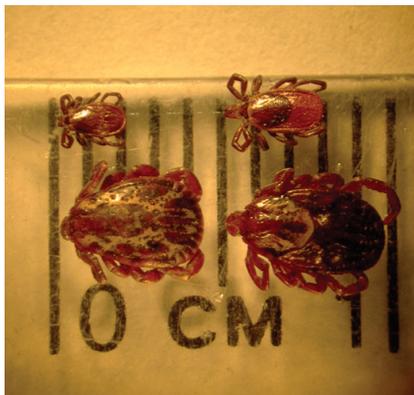


Figure 2: Adult American dog (wood) ticks (bottom row) and blacklegged (deer) ticks (top row).

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Unfed adult female blacklegged ticks are approximately 3 to 5 mm in length; and are red and brown in colour; while adult males are smaller than females and are uniformly brown in color (Figure 1). Adult blacklegged ticks are smaller than the more common American dog tick (often called wood tick). American dog ticks have white markings on their backs while blacklegged ticks do not (Figure 2). American dog ticks usually do not transmit the Lyme disease bacteria.

How do blacklegged ticks spread the infection?

Blacklegged ticks can transmit the Lyme disease bacteria by biting an animal or a person. However, not all blacklegged ticks are infected with the bacteria. Also, infected ticks must be attached for 24 hours or more before the bacteria is transmitted. Nymph and adult blacklegged ticks can transmit infection.

The Lyme disease bacteria circulates between blacklegged ticks and wild animals that can maintain an infection, such as mice, squirrels and some bird species. People and domestic animals can be exposed to the Lyme disease bacteria when they are fed upon by an infected blacklegged tick.

Where and when are blacklegged ticks found?

Blacklegged ticks have been submitted from many locations in southern Manitoba and occasionally from more northern areas as part of the Blacklegged Tick Surveillance Program. Tick submissions range from about 150 to 300 blacklegged ticks per year.

Throughout southern Manitoba, there is a chance of being exposed to the Lyme disease bacteria through contact with infected blacklegged ticks transported by birds. However, there is a greater risk in areas where there is an established blacklegged tick population. Surveillance efforts in recent years have found established blacklegged tick populations in Manitoba. Manitobans are advised to take precautions against ticks when in suitable tick habitats.

Check the Manitoba Health website for the latest information on the locations of established tick populations in Manitoba and links to where blacklegged ticks have been found in other provinces or countries.

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What is a suitable blacklegged tick habitat?

Blacklegged ticks survive best in locations that provide them with moist habitat. Wooded or forested areas are very suitable because the trees provide shade and leaf litter for ground cover to protect active ticks. These habitats also support populations of small mammals, birds and large mammals such as deer which provide the blood meal sources for the different tick life stages. Adult blacklegged ticks are most active in the spring and fall and they remain active until the first permanent snowfall or when air temperatures are consistently below 4°C. Larvae and nymphs are most active in the spring and summer months.

Blacklegged ticks cannot jump or fly. Instead, they seek hosts by climbing on vegetation such as grasses or shrubs and waiting for a host to rub against them. When this occurs, they climb onto the host's body and eventually attempt to attach and feed.

Ticks may be brought into the home on clothing or pets. Most indoor environments are too dry for blacklegged ticks to survive for more than a few days.

How do people know that they have Lyme disease?

Many people (70 to 80 per cent) will develop a rash three to 30 days after a bite from an infected tick. This rash, known as Erythema migrans (EM), is a red expanding skin rash usually more than five cm in diameter. It is not tender or itchy and usually occurs at the site of the tick bite; often the centre clears and it looks like a bull's eye.

The presence of an EM rash is enough evidence for a physician to diagnosis Lyme disease and to give treatment. The other early symptoms of Lyme disease are common to many diseases. These symptoms include: a rash other than EM, headache, fatigue, chills, fever, muscle aches, joint pain or swollen lymph nodes.

People with an untreated Lyme disease infection may continue to experience symptoms for months or years, including headaches, dizziness, difficulty concentrating, stiff neck, irregular heartbeat, or joint pain and swelling.

If you are concerned about Lyme disease, contact your doctor.

What is the treatment?

Lyme disease can be successfully treated with antibiotics. Treatment is most successful in the early stages of infection. Early stage treatment consists of a course of antibiotics for two to three weeks.

How do you protect yourself, your child and your pets from Lyme disease?

- Use trails, whenever possible, and stay to the centre of hiking trails or paths.
- Wear light-coloured clothing to make it easier to see ticks crawling on your clothing.
- Wear long pants and a long-sleeved shirt so that most exposed skin is covered.
- Tuck your shirt into your pants and your pants into your socks; this will make it more difficult for the ticks to attach to your skin.
- Apply an appropriate repellent (it should state 'for use against ticks' on the product label) on clothing and exposed skin. Always read and follow instructions for use.
- After spending time outdoors, inspect yourself and your children for ticks and remove any ticks found as soon as possible. Bathing soon after coming indoors is a good way to find ticks.
- Regularly inspect pets for ticks.

What can I do to reduce ticks around my home?

- In areas where blacklegged tick populations are established, a large number of landscape management strategies can be employed to help reduce the abundance of ticks (see http://www.gov.ns.ca/hpp/publications/Pages_from_Tick_Management_Handbook.pdf for detailed information).
- In general, tick numbers can be lowered by reducing cover and shade, through activities such as keeping grass mowed short, removing leaf litter and trimming other vegetation (shrubs and trees) to minimize shade cover in commonly used areas.
- Also consider creating 'tick unfriendly' habitats by using dryer less water-demanding materials such as mulch, gravel, decks or cement in commonly used areas.

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What should I do if I find a tick on myself, my child or my pet?

- If a tick is attached to the skin, remove it with tweezers:
 - grasp the tick close to the skin with tweezers and pull slowly upward with steady pressure; avoid twisting or crushing the tick. Other methods such as using a match, petroleum jelly, soap, etc. are not recommended.
- Cleanse the skin around the tick bite with soap and water or disinfectant.
- Mark the date and location of the tick bite on a calendar for future reference.
- If you develop a rash or other symptoms, see your doctor.

Will my pet get Lyme disease?

Most dogs and cats do not become ill when exposed to the Lyme disease bacteria. Some may develop symptoms such as fever, loss of appetite and joint pain. Tick control products such as tick collars or topical treatments are available for pets. Removal of the tick within 24 hours protects the pet from infection. Vaccines to prevent Lyme disease are also available for dogs; contact your veterinarian for more information.

What should I do with blacklegged ticks that I find?

- Manitobans can submit blacklegged ticks as part of the Blacklegged Tick Surveillance Program. Individuals are encouraged to submit ticks during the fall surveillance campaign.

- Ticks should be placed in a small crushproof bottle (ex: pill bottle) with a piece of slightly damp paper towel to help keep the tick alive.
- Firmly tape the lid shut.
- Seal the bottle in a plastic bag and then in a cardboard box labeled: *Research Specimens Fragile – Handle with Care* and send to the following address:

**Dr. Terry Galloway, Department of Entomology
Animal Science/Entomology Building, Room 214
Fort Garry Campus, University of Manitoba
Winnipeg, MB R3T 2N2**

- Include the following details: name, address and phone number, information about where, when and on whom (ex: person, dog) the tick was found, as well as any recent travel activity. A submission form can be downloaded from the Manitoba Health website: <http://www.gov.mb.ca/health/lyme/blacklegged.html>.
- Results of the testing will be provided once completed.

For more information

Talk to your health care provider, your local Public Health Unit or call Health Links-Info Santé in Winnipeg: **788-8200** toll-free (outside Winnipeg): **1-888-315-9257**. Information is also available on the Manitoba Health website at www.gov.mb.ca/health/lyme.