



# Blacklegged Ticks & Lyme Disease Moving North

The blacklegged tick, also known as the deer tick, is a small animal that feeds on the blood of birds, reptiles, amphibians, and mammals including humans. Once limited to the southern parts of Ontario, climate change is shifting where they can live and thrive. What makes them a big concern is their potential to carry the bacteria that causes Lyme disease, a potentially serious illness in humans.

## The life history of ticks and how they spread disease

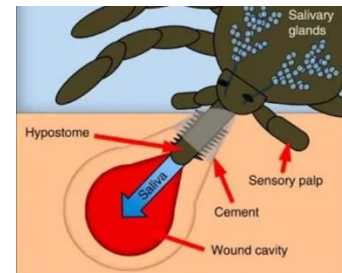
The life of a blacklegged tick (*Ixodes scapularis*) generally lasts two years. They go through four life stages: egg, larva, nymph, and adult. At each life stage except for the egg, they must have a blood meal from a new host to survive.

Ticks find their animal host by “questing”; they hang on to a short branch or blade of grass with their back legs and reach out with their front legs. When they sense an animal either by its breath, smell, body heat, moisture, or vibrations, they climb on. Then they might attach to the animal within a few minutes or wander for an hour or two looking for an area of thinner skin like in the armpit.

When they attach, they cut the skin and insert a feeding tube full of spikes and secrete cement that both serve to hold them in place. They “spit out” saliva and painkillers so the animal doesn’t notice them. The tick then sucks blood for several days. If the host animal has the bacteria that causes Lyme disease (*Borrelia burgdorferi*), the tick takes it up with the blood. After feeding, the tick will drop off and go to the next life stage where it will feed from another animal. If the tick picked up the bacteria from its first host, it can transmit it to the second host when it “spits out” saliva into the wound.



A blacklegged tick “questing” for a host on a blade of grass. CDC

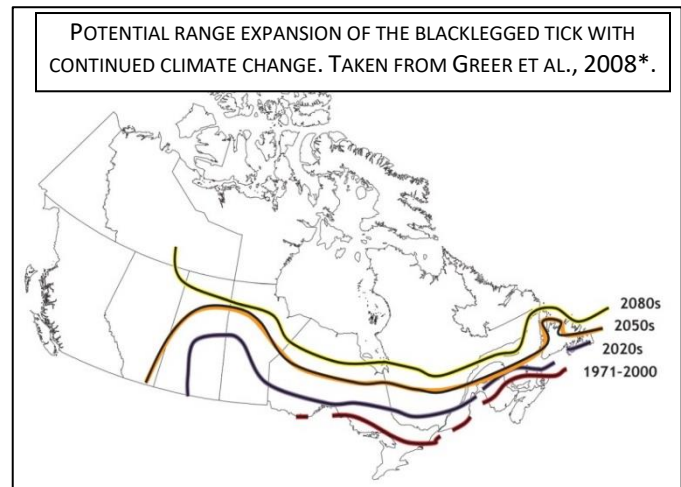


A blacklegged tick feeding <https://www.nature.com/articles/ncomms10507>

## How is climate change impacting blacklegged ticks and Lyme disease?

Changing climate conditions, such as warmer winter temperatures means ticks can now survive through the winter further north. With growing blacklegged tick populations they are being found further north than where they have been found in the past.

On the map to the right, the red line shows the northern limit of blacklegged ticks that was seen between 1971 and 2000. With predicted changes in climate, we can expect to see the edge of their range change over time. In 30 years (2050 - the orange line), blacklegged ticks could be found in more than half of Ontario and with them the risk of Lyme disease.



## What have people noticed about blacklegged ticks and Lyme disease?

Lyme disease is a growing concern, especially in the more southern areas of northwestern Ontario. Already, areas in and around Kenora, Rainy River, and Thunder Bay are considered risk areas for Lyme disease because 10% of blacklegged ticks tested were positive for *Borrelia burgdorferi*, the bacteria that causes Lyme disease.

\*Greer, A., Ng, V. & Fisman, D. Climate change and infectious diseases in North America: the road ahead. *Can. Med. Assoc. J.* 178, (2008)



## How can we prepare?

### Prevent bites

Covering your skin and using bug spray can help stop ticks and insects from biting. When in the bush, try to stay on trails if possible. Make your property less inviting for ticks by keeping your grass mowed short and removing brush and leaf litter. After being outdoors, check yourself, your children, and your pets for any ticks that may have attached.

### Tick Checks

Check for ticks on your body, paying special attention to the groin area, belly button, armpits, head and behind ears and knees. Use a mirror to check the back of your body or have someone else check for you. Don't forget to check for ticks on your children and your pets.

### Removing ticks

If you find a tick, be sure to remove it properly. The tick will have embedded its mouth parts into the skin and so it will be necessary to grab the tick near its head and pull up gently to be sure to remove the entire tick. You can submit it to your local health unit to be tested for the Lyme causing bacteria.

### Be aware of Lyme disease and its symptoms

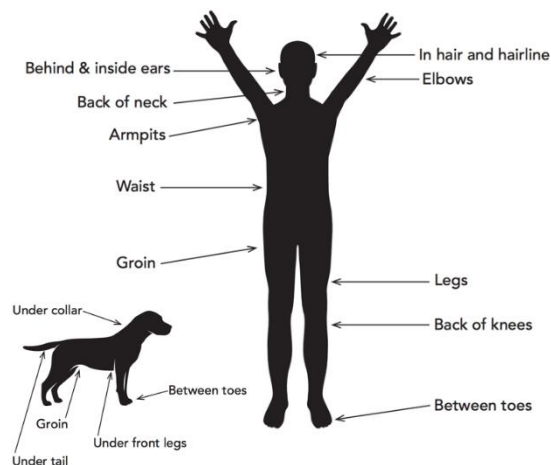
Know what the symptoms of Lyme disease are so you can seek treatment as quickly as possible. Most symptoms of Lyme disease in humans usually appear between 3 and 30 days after a bite from an infected blacklegged tick. You should contact your local public health unit or speak to a health care professional right away if you have been bitten by a blacklegged tick, or if you have been in an area that ticks might live and experience **any** of the following symptoms: rash (typically a bull's-eye rash or a bruise-like rash (usually on darker skin tones), another type of unusual rash, fever, chills, headache, stiff neck, muscle aches and joint pains, fatigue (more tired than usual), swollen lymph nodes, spasms, numbness or tingling or facial paralysis. If not treated, Lyme disease can make you feel tired and weak and, if it gets really bad, it can even harm your heart, nerves, liver and joints. Symptoms from untreated Lyme disease can last years and include recurring arthritis and neurological problems, numbness, paralysis and, in very rare cases, death.

### Monitor for ticks in your area

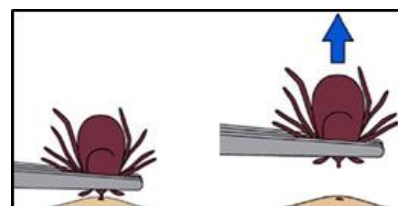
Knowing if blacklegged ticks are in your area can help you understand your risk for Lyme disease. While there are other species of tick in Ontario, only the blacklegged tick transmits Lyme disease. Consider including tick dragging to your community-based monitoring program (<https://www.youtube.com/watch?v=t7rwi0fSuKc>).

**Read more:** <https://www.tbdhu.com/health-topics/insects-rodents-other-pests/ticks-lyme-disease;>  
<https://www.ontario.ca/page/lyme-disease>

### TICK CHECK ZONES



Tick check from: [TBDHU.COM/ticks](http://TBDHU.COM/ticks)



REMOVING A TICK WITH TWEEZERS FROM  
[WWW.CDC.GOV/LYME](http://WWW.CDC.GOV/LYME)

