

disease. In rare instances, even if you do not display symptoms, antibiotics may still be recommended if your exposure history is supportive of Lyme Disease.

Tick Habitat

In Ontario, blacklegged ticks are more commonly found in areas along the north shores of Lake Erie, Lake Ontario, and the St. Lawrence River. Locations with established blacklegged tick populations infected with the Lyme disease agent, include:

Long Point, Turkey Point, Rondeau Provincial Park, Point Pelee National Park, Prince Edward Point National Wildlife Area, Rainy River, Pinery Provincial Park, Rouge Valley, Wainfleet Bog Conservation Area, and in the St. Lawrence Islands National Park area. The

precise boundaries of these established tick populations are difficult to define but it is anticipated that some of these populations will continue to expand into neighbouring areas. Blacklegged ticks are also known to feed on migratory birds and as a result, they can be transported throughout the province. Therefore, while the potential is low, it is possible for people to encounter blacklegged ticks, or to be infected with Lyme disease from the bite of an infected blacklegged tick, almost anywhere in the province.

Tick Avoidance Tips

For yourself:

- Don't walk barelegged in tall grass, wooded areas or marshlands.
- Try to stay in the centre of a cleared trail to avoid contact with overgrown grass, brush, and leaf litter.
- Wear long sleeves, slacks and fully-closed boots or shoes when walking in grassy or wooded

areas.

- Tuck your pant legs into your socks.
- Conduct a "tick check" on yourself, your family and your pets after exposure to tick habitat.
- Wear light-coloured clothing to make the ticks easier to find.
- Insect repellents containing DEET (N,N-diethyl-meta-toluamide) are useful and can be sprayed onto clothing, especially pants and socks. Please read the label when using any repellents, in particular when using them on young children. For safety tips on using personal insect repellents containing DEET, visit the following website: www.hc-sc.gc.ca and search "insect repellents."

For your pets:

- Check your pets for ticks daily, especially after they spend time outdoors.
- If you find a tick on your pet, remove it right away.
- Ask your veterinarian to conduct a tick check at each exam.
- Talk to your veterinarian about tickborne diseases in your area.
- Reduce tick habitat in your yard.
- Talk with your veterinarian about using tick preventive products on your pet.

For your yard:

- Remove ideal tick habitat from your property, such as brush and leaf litter.
- Keep your lawn short (<16cm).
- Place a 3-ft wide barrier of wood chips or gravel between lawns and wooded areas and around patios and play equipment. This will restrict tick migration into recreational areas.
- Keep tables, swing sets, play equipment, etc. away from woods, shrubs and tall grass. Place in a sunny location, if possible.
- Remove possible rodent habitats around your property (e.g. stack wood neatly in dry areas away from house).

Tick Removal

Prompt removal of ticks from your skin will help prevent infection since chances of transmission increase the longer the tick is attached (usually \geq 24hrs).

- Using fine-tipped tweezers, carefully grasp the tick as close to your skin as possible. Pull it straight out, gently but firmly.
- Don't twist or jerk the tick; this can cause the mouth-parts to break off and remain in the skin. If this happens, remove the mouth-parts with tweezers.
- Don't squeeze it. Squeezing the tick can cause the Lyme disease agent to be accidentally introduced into your body.
- Don't put anything on the tick (e.g. Vaseline), or try to burn the tick.
- After removing the tick, thoroughly cleanse the bite site with soap and water and/or rubbing alcohol.
- If you are concerned about your tick exposure (e.g. experiencing symptoms, tick is engorged), place the removed tick in a screw-top bottle and take it to a healthcare provider. They can send it to a lab for identification. Establishing the type of tick may help assess your risk of acquiring Lyme disease.



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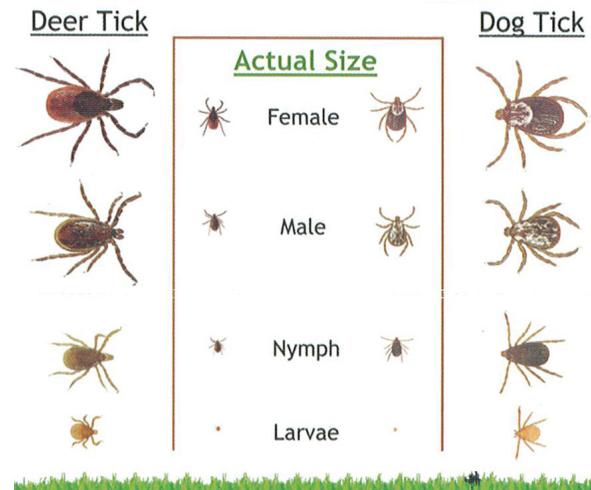
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Lyme Disease & Tick Testing

Since 1999, Ontario has seen an increase in the number of reported Lyme disease cases and tick populations have expanded into new areas of Ontario partially due to warming temperatures and the adaptability of its carrier; the deer tick. With this expanding threat, understanding Lyme disease is the first and most important step in preventing yourself from acquiring this serious disease.

What is Lyme Disease?

Lyme disease is an infection caused by the corkscrew-shaped bacteria, *Borrelia burgdorferi*. In Ontario, these bacteria are spread by the bite of blacklegged ticks (also known as deer ticks), *Ixodes scapularis*.



What are Ticks?

Ticks are closely related to spiders. They vary in size and colour, depending on their age and whether they have been feeding (see cover). Before feeding, they are about 3 –5 mm in length, and are red and dark brown in colour. Young ticks in the pre-adult stages are smaller and lighter coloured. When they are full of blood, adult female ticks can be as large



What are the Symptoms of Lyme Disease?

Symptoms and health effects will vary from one person to the next. Early symptoms usually occur within one to two weeks but can occur as soon as three days or as long as a month after a tick bite. Lyme disease is often described in three stages:

Early/Acute Stage: Erythema Migrans (rash > 5cm): appear in 70-80% of infected persons at site of tick bite 3 days to 1 month. Often also experience: fatigue, chills, fever, headache, swollen lymph nodes, muscle and joint pain

Convalescent Stage: If untreated, symptoms possibly lasting several months include: multiple skin rashes, heart palpitations, central and peripheral nervous system disorders, arthritis and arthritic symptoms, extreme fatigue and general weakness

Late Stage: If untreated, symptoms possibly lasting months to years include: chronic arthritis and neurological symptoms. Rarely death.

If contracted during pregnancy, adverse effects on the fetus, including stillbirth, may occur.

as a grape. During all active stages of their life, ticks feed on the blood of animals, including humans. They cannot fly and they move quite slowly so ticks usually come in contact with people or animals by positioning themselves on tall grass and bushes. They may take several hours to find a suitable place on the host to attach to feed.

How do Ticks Transmit Lyme Disease?

The bacterium, *Borrelia burgdorferi*, is normally carried by mice, squirrels, birds and other small animals. Lyme disease can be passed to humans when ticks feed on these infected animals, become infected themselves, and then bite people.

Most tick bites are painless. Ticks feed on blood by inserting their mouthparts (not their whole bodies) into the skin of a person, or an animal. Ticks feed slowly and their body gradually enlarges as it feeds, making it more visible. It usually takes from 3 to 7

days for a blacklegged tick to take a complete blood meal.

Ticks are more likely to transmit infection the longer they are attached (usually more than 24 hours) because the bacteria requires time to migrate from the tick's gut to its salivary glands. Because of this delay, prompt detection and removal of ticks is one of the key methods of preventing Lyme disease. The picture below shows female adult deer ticks at various levels of engorgement. Moving clockwise starting from the smallest - 0hrs, 24hrs, 48hrs, 72hrs, >96hrs is the largest.



How is Lyme Disease Diagnosed?

Lyme disease has been mistaken for many other disorders, ranging from the flu in its early stages to Lou Gehrig's disease, meningitis, arthritis, Bell's Palsy and others in its later, advanced stages. The onset of Lyme disease symptoms can take a relatively long time, so many people may not associate being outdoors with becoming ill days or weeks later.

Diagnosis should not depend on tick results due to the length of time it takes in getting them. Health care providers can make a clinical diagnosis without diagnostic test results. They base their diagnosis on a number of factors including:

- If there was a known tick exposure
- The kind of tick it was, based on visual clues (e.g. dog tick vs. deer tick)
- How long the tick was attached (i.e. more than 24 hours)
- Where the tick exposure occurred geographically.
- Any signs and/or symptoms present

Blood tests may also be insensitive during the early stage of illness, as it can take 4-6 weeks for the body's antibodies to respond. Therefore, blood tests should only be considered to supplement clinical diagnosis during the early stage. However, blood samples become more useful during late stages where clinical symptoms are non-specific and the sensitivity of the test increases significantly.

Treatment

Medical attention should be sought if the tick appears engorged or any early symptoms of Lyme disease develop within 30 days after removing the tick. If you removed the tick in the last 72 hours and it appears engorged, you should contact your healthcare provider immediately to discuss if a preventative dose of antibiotics is appropriate for you. Antibiotics may also be recommended if the tick is not available but you have early symptoms of Lyme