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 (formerly called deer ticks), *Ixodes scapularis*. The blacklegged tick can be found sporadically throughout the province.

What are ticks?

Ticks are closely related to spiders. They are typically small when unfed, (1 to 5 mm in length), and all active stages feed on blood. They cannot fly and they move quite slowly. 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. Most tick bites are painless. The majority of bites will not result in disease because most ticks are not infected with the agent of Lyme disease.

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 Provincial Park, Turkey Point Provincial Park, Rondeau Provincial Park, Point Pelee National Park, Prince Edward Point National Wildlife Area, 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.

How do ticks transmit Lyme disease?

Blacklegged ticks are the only type of tick in Ontario that can consistently transmit Lyme disease in Ontario. Even with a bite from an infected blacklegged tick, there is only a small chance of getting Lyme disease. 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 most likely to transmit infection after being attached for more

than 24 hours of feeding (see attached figure) 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.

What are the symptoms?

Early symptoms of Lyme disease usually occurs within one to two weeks, but can occur as soon as three days or as long as a month, after a tick bite. If you develop: fever, headache, muscle and joint pains, fatigue and a skin rash, especially one that looks like a red bull's eye (called erythema migrans), promptly seek medical advice. It is important to tell your doctor when and the geographical location of where you were bitten by a tick. Not all patients with Lyme disease will develop the bull's eye rash.

Treatment

In most circumstances in Ontario, antibiotic treatment is not necessary if someone has been bitten by a tick. If a tick is discovered attached to a person, the tick should be promptly removed (see below). The tick can be identified through a doctor and/or public health unit. If the tick is a blacklegged tick, it will be tested for Lyme disease. Medical attention should be sought if any symptoms of early Lyme disease develop within 30 days of removal of the tick. In rare instances, antibiotic treatment may be recommended if the tick was attached for a long time (more than 24 hours), the person had been visiting an area where Lyme disease is relatively common, or the tick is not available for testing and the patient has symptoms of early Lyme disease. If symptoms of Lyme disease develop, antibiotics should prevent further complications. The earlier treatment is received, the better. If the initial infection is not treated, symptoms involving the heart, nervous system or joints can occur.

How do I avoid ticks?

Wear light-coloured clothing. It makes ticks easier to see and remove before they can attach to feed.

Wear long pants and a long sleeved shirt.

Wear closed footwear and socks.

Tuck your pants into your socks.

Use a tick repellent that has "DEET" (following the manufacturer's directions for use). Apply it to your skin and outer clothing. Avoid your eyes and mouth, as well as cuts and scrapes.

Put a tick and flea collar on your pet and check them for ticks periodically.

If you frequent the areas where blacklegged ticks are established, examine yourself thoroughly for ticks. It is important to do this each day. Pay special attention to areas such as groin, scalp and armpits. Use a mirror to check the back of your body or have someone else check it.

What do I do if I find an attached tick?

Prompt removal of ticks from your skin will help prevent infection, since transmission of the Lyme disease agent usually requires the tick to be attached for more than 24 hours.

Using fine-tipped tweezers, carefully grasp the tick as close to your skin as possible. Pull it straight out, gently but firmly.

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, or try to burn the tick off.

After the tick has been removed, place it in screw-top bottle (like a pill vial or film canister), and take it to your doctor or local health unit. They can send it to the Ontario Public Health Laboratory for identification. Establishing the type of tick may help to assess your risk of acquiring Lyme disease.

It is important to remember where you most likely acquired the tick. It will help public health workers to identify areas of higher risk.

Thoroughly cleanse the bite site with rubbing alcohol and/or soap and

Lyme disease testing

Blood tests to support a diagnosis of Lyme disease are performed at the Ontario Public Health Laboratory. The diagnostic tests that are used are approved by federal regulators in Health Canada. The testing protocol follows the recommendations of the Canadian Public Health Laboratory Network, as well as the Centers for Disease Control (CDC) in the USA. The CDC and the Public Health Agency of Canada caution health care professionals and the public regarding the use of private laboratories offering Lyme disease testing in the USA, as these “for-profit” laboratories may not follow the same testing protocols as most Canadian provincial and federal or United States federal or state laboratories. For more information on this, please see the following
link: http://www.cdc.gov/MMWR/preview/mmwrhtml/mm5405a6.htm

Who can tell me more about Lyme disease?

Talk to your doctor, or contact your local public health unit for more information.

The Kingston, Lennox and Addington Public Health Unit can be reached at 613-549-1232