



LYME DISEASE

The Issue

Lyme disease is a serious illness spread by the bite of certain species of ticks. Ticks are insect-like in appearance and feed on the blood of animals, including humans.

For most Canadians, the risk of exposure to Lyme disease is fairly low. However, it is still important to keep the risk as low as possible if you spend time outdoors in areas where there may be ticks that could transmit Lyme disease.

Background

Lyme disease in Canada is caused by a bacterium called *Borrelia burgdorferi*. This bacterium is normally carried by mice, squirrels, birds and other small animals. It can be passed to humans when ticks feed on infected animals, become infected themselves, and then bite people.

In Canada, there are two species of ticks known to transmit Lyme disease:

- the western blacklegged tick, which is known to be established in parts of southern British Columbia; and
- the blacklegged tick (often called a deer tick), which is known to be established in parts of southern and eastern Ontario, southeastern Manitoba and Nova Scotia.

These ticks vary in size and colour, depending on their age and whether they have been feeding. 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 as a grape.

You are most likely to come into contact with ticks by brushing against vegetation. When a tick bites you, it becomes attached to your skin by its mouth parts.

Risk of Exposure to Lyme Disease

The risk of exposure to Lyme disease is highest in the regions (listed above) where blacklegged and western blacklegged ticks are established.

However, surveillance has shown that migratory birds can carry these ticks to other parts of Canada. In addition, researchers believe the ticks may be establishing themselves in areas that are not identified yet. This means there is a risk that people in other regions of Canada may also be exposed to infected ticks.

The risk of contact with ticks begins in early spring when the weather warms up and lasts through to the end of fall. Ticks may also be active in winter in areas with mild temperatures (4°C and above) and no snow.

There is no evidence that Lyme disease can spread from person-to-person. Although cats and dogs can get Lyme disease, there is no evidence that they can pass the infection to people. Pets can, however, carry infected ticks into your home or yard.

The Symptoms and Health Effects of Lyme Disease

Although the symptoms and health effects will vary from one person to the next, Lyme disease is often described in three stages.

The first sign of infection is often a circular rash. This rash occurs in about 70-80% of infected people and begins at the site of the tick bite after a delay of three days to one month. Additional symptoms may include fatigue, chills, fever, headache, muscle and joint pain, and swollen lymph nodes. If untreated, the disease progresses into the second stage which can last several months. Symptoms of this stage include migraines, weakness, multiple skin rashes, painful or stiff joints, abnormal heartbeat and extreme fatigue. If the disease continues to progress, the third stage of Lyme disease can include symptoms such as chronic arthritis and neurological



symptoms, including headaches, dizziness, numbness, and paralysis.

Fatalities from Lyme disease are rare. However, if contracted during pregnancy, Lyme disease can pose serious health risks to the baby, including stillbirth.

Treating Lyme Disease

Lyme disease can be treated effectively with antibiotics. A full recovery is more likely when treatment begins in the early stages of the disease. Undiagnosed Lyme disease may develop into chronic illness that can be difficult to treat.

Minimizing Your Risk

Remember, the risk of exposure to the disease in Canada is highest in a small number of regions where the ticks that can spread Lyme disease are established. Find out from your local public health office if there are ticks in your area, especially blacklegged ticks.

If you are going to spend time outdoors in wooded areas or tall grass that may be tick-infested:

- Wear light-coloured long-sleeved shirts and pants. The light colours will help you see whether there are any ticks on you. Tuck your shirt into your pants, and pull socks up over your pant legs. This will help keep ticks away from your bare skin.
- Wear shoes that cover your entire foot. Avoid sandals or open shoes.
- Spray clothing and exposed skin with an insect repellent that contains DEET. Read and follow the manufacturer's directions for safe use.
- After finishing your outdoor activity, check your clothing and your entire body for any attached ticks.

If you find a tick attached to your skin:

- Use tweezers to remove it. Grasp the tick's head and mouth parts as close to your skin as possible, and pull slowly until the tick is removed. Be careful not to twist, rotate or crush the tick during removal.

- After removing the tick, use soap and water to wash the spot where you were bitten. You may also disinfect the bite area with alcohol or household disinfectant.
- Try to save the tick in an empty pill vial or a doubled zip-lock bag. If you develop any symptoms of Lyme disease, the tick can be sent to a laboratory for identification, and this may help diagnose your illness. It may also help public health workers identify areas of higher risk for Lyme disease.
- Contact your health care provider right away if you develop a rash or any other symptoms of Lyme disease.

The following steps can also help reduce your risk of contact with ticks:

- Keep grass on your property well cut to reduce the amount of habitat suitable for ticks.
- Check pets regularly for ticks.

Some Canadian cases of Lyme disease have been acquired during travel to the United States, where a greater number of higher-risk areas have been identified. Travellers should be particularly cautious when engaging in outdoor activities in areas along the Atlantic seaboard from Maine to Virginia, and in Minnesota and Wisconsin.

The Public Health Agency of Canada's Role

The Public Health Agency of Canada has been involved for more than a decade in research to define and monitor the occurrence of Lyme disease in Canada. The Agency also works with provincial, national and international experts to address key issues related to Lyme disease, including the following:

- the diagnosis, treatment and surveillance of the disease,
- the impact of climate change on the range of the disease; and
- ongoing education for health professionals and the public.

Need More Info?

Contact:
National Microbiology Laboratory
Public Health Agency of Canada
1015 Arlington Street
Winnipeg MB R3E 3P6
Telephone: 204-789-2000

Also, see the following:

The Public Health Agency of Canada's fact sheet, Lyme Disease at:
http://www.phac-aspc.gc.ca/id-mi/lyme-fs_e.html

Health Canada's brochure, Safety Tips on Using Personal Insect Repellents at:
<http://www.pmlra-arla.gc.ca/english/consum/insectrepellents-e.html>

For information about higher-risk areas for Lyme disease in the United States, visit the U.S. Centers for Disease Control and Prevention (CDC) Web site at:
http://www.cdc.gov/ncidod/dvbid/lyme/ld_statistics.htm

For additional articles on health and safety issues go to the It's Your Health Web site at:
http://www.hc-sc.gc.ca/iyh-vsv/index_e.html
You can also call toll free at 1-866-225-0709 or TTY at 1-800-276-1245*.