

PUBLIC HEALTH FACT SHEET

Lyme Disease

Massachusetts Department of Public Health, 305 South Street, Boston, MA 02130

What is Lyme disease?

Lyme disease is an infectious disease caused by bacteria that are spread by tiny infected ticks (specifically, deer ticks). Both people and animals can be infected with Lyme disease. Lyme disease can be serious if it is not treated, but it is not fatal.

Where is Lyme disease found?

Lyme disease can be found all over the United States, but it is most common along the East Coast, the Great Lakes, and the Pacific Northwest. In Massachusetts, deer ticks are most often found in the coastal areas, the islands and the Connecticut River Valley in the western part of the state. The disease is most likely to be spread between late May and early autumn, when ticks are most active.

How is Lyme disease spread?

Deer ticks cling to plants near the ground in brushy, wooded, or grassy places. The ticks, which cannot jump or fly, climb onto animals and people who brush against the plants. Very young ticks (called larvae) pick up the bacteria that cause Lyme disease by biting infected animals, such as field mice. The bite of slightly older ticks (called nymphs) can pass the infection along to the next host. Adult deer ticks can also transmit the disease but are not as great a risk as nymphs, because they are easier to see and remove, and are less likely to bite humans.

Deer ticks are so tiny that the larvae are no bigger than the period at the end of this sentence. The ticks live for two years, during which they can infect wild and domestic animals as well as people.

Not all ticks carry Lyme disease, and even being bitten by a deer tick does not necessarily mean that you will get the disease. The tick must be attached for at least 24 hours to pass on the bacteria, so removing the tick promptly will cut down your chances of being infected.

What are the symptoms of Lyme disease?

Early stage: An early symptom of Lyme disease is usually, but not always, an unusual rash where the tick was attached. Often the tick isn't even noticed, and it drops off before the rash appears. The rash first appears anywhere from three days to a month after the bite. It starts as a small red area then spreads out, often clearing up in the center so it looks like a donut. Other skin signs can include burning or itching, hives, redness of the cheeks and under the eyes, and swollen eyelids with bloodshot eyes. Flu-like symptoms such as fever, headache, stiff neck, sore and aching muscles and joints, fatigue, sore throat, and swollen glands are also common in the early stage of Lyme disease.

The symptoms often go away by themselves after a few weeks, but the person remains infected. Without medical treatment, about half the infected people will get the rash again in other places on their bodies, and many will develop more serious problems later. Treatment with antibiotics clears up the rash within days and often prevents later problems.

Later stages: Three major organ systems—the joints, nervous system and heart—can be affected weeks to months after the tick bite, although symptoms usually show up within four to six weeks. People with Lyme disease can develop late-stage symptoms even if they never got the donut-shaped rash.

About 60% of people with untreated Lyme disease get arthritis in their large joints, usually knees, elbows and wrists. The arthritis can move from joint to joint and become chronic.

About 10% to 20% of people who don't get treatment develop nervous system problems. The most common symptoms are severe headache and stiff neck, facial paralysis or other cranial nerve palsies, and weakness or pain (or both) in their hands, arms, feet and/or legs. These symptoms can last for weeks, often shifting from mild to severe and back again.

How is Lyme disease diagnosed?

Lyme disease can be easy to diagnose when someone gets the donut-shaped rash. It is much harder to diagnose without the rash because its other symptoms mimic other diseases, like flu. To help diagnose these cases, doctors can ask laboratories to test their patients' blood for antibodies to the Lyme disease bacteria.

How is Lyme disease treated?

Lyme disease can be treated with antibiotics if it is diagnosed early. **Prompt treatment of early symptoms can prevent later, more serious problems.**

How can you prevent Lyme disease?

The only known way to get Lyme disease in Massachusetts is from the bite of an infected deer tick. The best ways to prevent Lyme disease are to know where the deer ticks are found, avoid these places, and promptly remove the tick if you do get bitten. If you live in or visit a high-risk area, follow these tips:

- ◆ Don't walk bare-legged in tall grass, woods, or dunes where ticks may live.
- ◆ If you do walk in these places, wear a long-sleeved shirt, long pants, high socks (with pants tucked tightly into the socks), and sneakers. Light colors will help you spot the ticks on your clothes before they reach your skin.
- ◆ Use insect repellents that contain DEET on your clothes or exposed skin, or those that contain permethrin on your clothes. **Read labels carefully.** Use products with no more than 10-15% DEET on children and no more than 30-35% DEET on adults. Wash skin thoroughly after returning indoors. Rare but serious reactions to repellents can occur.
- ◆ Check for ticks every day. Their favorite places are on the legs, thighs, groin, in the armpits, along the hairline, and in or behind the ears. The ticks are tiny, so look for new freckles.
- ◆ To remove a tick, use tweezers to grip the mouthparts firmly and pull it straight out. If you must use your fingers, protect your fingertips with a plastic bag or a tissue and wash your hands afterward. Put antiseptic on the bite.
- ◆ Drown the tick in alcohol or kerosene. (Never leave these liquids where children can reach them.)
- ◆ Know the symptoms of Lyme disease. **If you have been someplace likely to have ticks between May and early autumn and you develop Lyme disease symptoms, especially if you get a donut shaped rash, see a doctor right away.** Early treatment can prevent later problems.

Where can you get more information?

Your local board of health

listed in the telephone book under local government

Massachusetts Department of Public Health

Division of Epidemiology and Immunization

(617) 983-6800

Massachusetts Poison Control Center

(617) 232-2120

(concerning adverse reactions to insect repellents)

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