

Lyme disease (Lyme borreliosis, Lyme arthritis)

Disease Fact Sheet Series

What is Lyme disease?

Lyme disease is an illness caused the bacteria, *Borrelia burgdorferi*, that is transmitted by a tick named *Ixodes scapularis* (commonly called black legged or the deer tick). Lyme disease may cause symptoms affecting the skin, nervous system, heart and/or joints of an infected individual. Over 20,000 cases of the disease have been reported in Wisconsin since surveillance for Lyme disease began in 1980.

Why is it called Lyme disease?

The first cluster of cases associated with this infectious agent was discovered near the town of Lyme, Connecticut.

Who gets Lyme disease?

Males and females of all ages can get Lyme disease. People who spend time outdoors in tick-infested environments are at an increased risk of exposure. Most cases have reported an exposure to ticks or woodland/brush habitat during the months of May through August, but exposure can occur whenever the temperature at ground level is warm enough for ticks to be active. In Wisconsin, the vast majority of cases have been acquired in the western two-thirds of the state. The northwestern and west central portions of Wisconsin have the highest incidence of the disease.

How is Lyme disease spread?

The disease is acquired by a tick bite. The deer ticks that transmit the Lyme disease bacterium become infected when the immature stage of the tick feeds on infected field mice. When subsequent stages of that tick feed again, the infection can be transmitted to the tick's new host. The tick must actually be attached to a person's skin for about 24 hours before it can transmit the bacterium. The bite of the tick is usually painless.

What are the symptoms of Lyme disease?

The illness usually occurs during the summer months and often starts as a roughly circular reddish rash around or near the site of the tick bite. The rash expands in size over a period of days or weeks. During the rash stage, other symptoms such as fever, headache, fatigue, stiff neck, muscle and/or joint pain may be present. These may last for several weeks.

If left untreated, within a few weeks to months after the rash onset, complications such as meningitis, facial palsy, heart abnormalities, and arthritis may occur. Swelling and pain in the large joints may recur over several months or years in untreated Lyme disease. Not all persons with the disease develop the initial skin rash.

How soon do symptoms occur?

The early symptoms usually begin within a month of exposure. The later arthritic, cardiac, and neurologic problems can take weeks to months to appear.

Does past infection with Lyme disease make a person immune?

Past infection does provide some immunity, but that protection is relatively short-lived. It is possible for a person to get infected more than once.

What is the treatment for Lyme disease?

The disease is treated with oral or injectable antibiotics.

What can be done to prevent the spread of Lyme disease?

If you are in areas where ticks may be present, the following precautions can reduce the risk of acquiring Lyme disease:

- Wear a long-sleeved shirt, long pants, and high socks with pant cuffs tucked into the socks. Light colored clothing will make ticks easier to find. Walk in the center of mowed trails to avoid brushing up against vegetation.
- Conduct thorough "tick checks" on yourself and your children after spending time outdoors. Prompt removal of ticks, even after they have attached, can drastically reduce the chance of Lyme disease transmission.
- Insect repellents containing 0.5% permethrin or 20-30% DEET have been shown to be effective in repelling deer ticks. If such products are used, be sure to follow the manufacturer's directions on the label.
- Although there had been a vaccine against human Lyme disease, it is no longer marketed.

How should a tick be removed?

To remove an attached tick, grasp it with narrow-bladed tweezers or forceps as close as possible to attachment (skin) site, and pull upward and out with a firm and steady tension. If tweezers are not available, use fingers shielded with tissue paper or rubber gloves. Do not handle with bare hands. Be careful not to squeeze, crush or puncture the body of the tick that may contain infectious fluids. After removing the tick, thoroughly disinfect the bite site and wash hands. See or call a doctor if there is a concern about incomplete tick removal. It is important that a tick be properly removed as soon as it is discovered.