



## Lyme Disease

(Lyme borreliosis)

### What is Lyme disease?

Lyme disease is caused by a bacterium, *Borrelia burgdorferi*, that is transmitted by a tick called *Ixodes scapularis* (common name – deer tick) or *Ixodes pacificus* (common name – pacific deer tick). Lyme disease may cause symptoms affecting the skin, nervous system, heart and/or joints of a person.

### Who is at risk for 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 becoming infected. Most cases have reported an exposure to ticks or woodland/brush habitat during the months of May through August, but cases have been reported during every month of the year.

### 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, or occasionally prior to the rash, other symptoms such as fever, headache, fatigue, stiff neck, muscle and/or joint pain may be present. These symptoms may last for several weeks. If left untreated, within a few weeks to months after the rash appears, complications such as meningitis, paralysis of facial muscles or heart problems may occur. Swelling and pain in the large joints may recur over several months or years. Not everyone with Lyme disease develops the skin rash.

### How soon do symptoms appear?

The early symptoms usually begin within a month of exposure.

### How is Lyme disease spread?

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

### When and for how long is a person able to spread the disease?

This disease is not spread directly from person to person.

### How is a person diagnosed?

Lyme disease can be diagnosed based on symptoms, exposure to infected ticks and laboratory results from blood tests. Diagnosis is made after consulting with a health-care professional.

### What is the treatment?

The disease is treated with antibiotics taken orally or by injection.

### **Does past infection make a person immune?**

No. Information currently available indicates that a person can be infected more than once.

### **Should children or others be excluded from day care, school, work or other activities if they have Lyme disease?**

No, unless the child is too ill to participate. (This disease is not spread directly from person to person.)

### **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 reduce the chance of Lyme disease transmission.
- Insect repellents containing 0.5 percent permethrin or 20 percent to 30 percent 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.

To remove an attached tick, grasp with tweezers or forceps as close as possible to attachment (skin) site, and pull upward and out with a firm and steady pressure. 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, because it may contain infectious fluids. After removing the tick, thoroughly disinfect the bite site and wash hands. See or call a health-care professional if there is a concern about incomplete tick removal. It is important that a tick be removed as soon as it is discovered.

### **Additional Information:**

For more information, call the North Dakota Department of Health at 800.472.2180.

**This disease is a reportable condition. As mandated by North Dakota law, any incidence of this disease shall be reported to the North Dakota Department of Health.**

Resource: American Academy of Pediatrics. [Lyme Disease]. In: Pickering LK, ed. *Red Book: 2003 Report of the Committee on Infectious Diseases*. 26<sup>th</sup> ed. Elk Grove Village, IL: American Academy of Pediatrics; 2003:[407-411]

