Public Health Fact Sheet

Lyme Disease

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What is Lyme disease?
Lyme disease is a tickborne illness, caused by the bacteria *Borrelia burgdorferi* (*B. burgdorferi*).

How is Lyme disease contracted?
Lyme disease is contracted from the bite of an *Ixodes* tick, also called the "black-legged" tick that is infected with the *B. burgdorferi* bacteria. Evidence suggests the infected black-legged tick must remain attached for 24 hours or more before the bacteria can be transmitted.

What are the symptoms of Lyme disease?
During the early stages of Lyme disease, approximately 80% of affected persons will develop a large (greater than five cm wide), circular red rash that may have a target or "bull's-eye" appearance around or near the site of the bite. The rash will generally appear three to 30 days (usually seven to 14 days) following the tick bite. Additional symptoms during the early stages of the disease may also include: fever, headache, fatigue, muscle and/or joint pain, and swollen lymph nodes. If Lyme disease is unrecognized or untreated in the early stage, the symptoms may progress to include tingling or numbness in the arms and legs, or facial paralysis. The most severe symptoms of Lyme disease may not appear until weeks, months, or even years after the tick bite. These severe symptoms, called "late manifestations", may include: swelling and pain in large joints (especially the knees), painful arthritis, heart abnormalities, and central nervous system problems. Lyme disease is rarely fatal, unlike the other tickborne diseases in Oklahoma.

What is the treatment for Lyme disease?
In the early course of infection, Lyme disease is easily treated with antibiotics. Depending on the stage of the disease, treatment with amoxicillin or doxycycline for two to four weeks is generally effective. Persons experiencing the late manifestations of the disease may require additional antibiotic therapy.

Can a person get Lyme disease more than once?
Yes, reinfection has occurred in persons treated with antibiotics for early disease.

Is there a vaccine available for Lyme disease?
No, a vaccine was developed, but in 2002 the manufacturer announced it would no longer be available.

How is Lyme disease diagnosed?
A presumptive diagnosis of Lyme disease is usually made by a health care provider on the basis of the characteristic bull's eye rash, presence of other compatible symptoms, and a history of recent possible exposure to ticks. Blood tests for Lyme disease can then be ordered by your health care provider to assist in the diagnosis. A two-step testing procedure is advised for confirmatory laboratory testing. If you think you have Lyme disease, you should contact your health care provider as soon as possible.

Is it possible to get Lyme disease in Oklahoma?
The presence of "true" Lyme disease in the southern states, including Oklahoma, is controversial because *B. burgdorferi* bacteria has never been cultured from a person residing in the southern U.S. with symptoms of Lyme disease. However, other evidence suggests that it could be possible to get Lyme disease in Oklahoma. Studies have shown that a small percentage of black-legged ticks found in Oklahoma are infected with *B. burgdorferi*. Although rare, it appears possible to get Lyme disease in Oklahoma.

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If I have a bull's-eye rash, does that mean I have Lyme disease?

No, there are other infections that may cause a similar rash. There are several medical reports of persons in the southeastern and south-central states (including Oklahoma), who presented to their physician with a bull's-eye rash, which is usually seen in persons with Lyme disease. However, testing for Lyme disease in these persons has been negative. This "Lyme-like" disease has been named Southern Tick-Associated Rash Illness (STARI). Though the cause of this disease is not fully understood, it may be caused by the bacteria *Borrelia lonestari*. These bacteria appear to be spread by the "lone star" tick, *Amblyomma americanum*. Lone star ticks are commonly found in Oklahoma, and are known to aggressively bite humans.

How can I protect myself from Lyme disease?

The best way to protect against Lyme disease and other tickborne diseases is to prevent tick bites. Personal tick bite prevention precautions include:

- Wear light colored clothing to make ticks easier to see.
- Wear long-sleeved shirts and long pants tucked into socks to deprive ticks of attachment sites.
- Wear closed-toe shoes, not sandals.
- When hiking, biking, or walking, stay in the center of trails to avoid grass and brush.
- Check for ticks AT LEAST once per day; particularly along waistbands, in the armpits, and groin area. Don't forget the back and the hair!
- Use a tick repellent with DEET on skin and clothing according to the directions.
- Use a tick repellent with permethrin ON CLOTHING ONLY as directed by the label.

How should an attached tick be removed?

Since the risk of contracting a tickborne illness is higher the longer the tick stays attached; ticks should be removed as quickly as possible. Use tweezers for tick removal, but if these are unavailable, cover your fingers with a tissue (or similar material) and grab the tick as close to the surface of the skin as possible. Then, applying gentle steady traction, pull the tick straight back for removal. Sometimes a small red welt may be present on the skin where the tick was attached. This is generally due to localized irritation from the tick's saliva and can be expected to resolve in one to two days.

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Acute Disease Service
Oklahoma State Department of Health

For further information call or visit us on the World Wide Web
Acute Disease Service
Oklahoma State Department of Health
Phone (405) 271-4060
http://ads.health.ok.gov