

# Lyme Disease

**L**yme disease is an infection caused by a kind of **bacteria** (germ) called a spirochete. This bacterium, *Borrelia burgdorferi*, is transmitted by the bite of an infected deer tick. It is the most common tick-borne infection in both North America and Europe. Diagnosis is based on a variety of symptoms, physical findings, blood tests, and a history of exposure to infected ticks. The June 20, 2007, issue of *JAMA* includes an article that discusses a rash called **erythema migrans** (see below) as a clinical sign that is consistent with a diagnosis of early Lyme disease and other related tick-borne diseases.

## SYMPTOMS

- Erythema migrans (EM)—About 70% to 80% of infected individuals will develop a red rash at the site of the tick bite. Over a period of days to weeks, the rash grows larger and the center may fade, creating a “bull’s-eye” or ring appearance. The rash rarely may burn or itch.
- Arthritis—About 60% of untreated individuals will go on to develop arthritis. The joints become swollen and painful, making daily activities burdensome.
- Neurological symptoms—The spread of Lyme disease to the nervous system can cause **Bell palsy** (a facial droop due to muscle paralysis) or a form of meningitis. Later neurological symptoms may include memory loss, inability to concentrate, and muscle weakness with tingling and numbness in the arms and legs.
- Other symptoms—Less common symptoms include eye **inflammation** (redness and swelling), fatigue, sleep disturbance, stiff neck, fever, and body aches.

## TREATMENT

Once the diagnosis has been made, Lyme disease is treated with antibiotics. **Nonsteroidal anti-inflammatory drugs** such as aspirin or ibuprofen are helpful for arthritis symptoms and fever.

## PREVENTION

The best way to prevent Lyme disease is to prevent tick bites:

- Use protective clothing—wear long-sleeved shirts and pants.
- Use insect repellents containing DEET or permethrin.
- Apply an **acaricide** (a chemical that kills ticks) to your yard in the spring.
- Check your skin, your children’s skin, and your pets for ticks after time spent outdoors. The nymph stage of deer ticks, the most important source of Lyme disease transmission, is barely visible (less than 1/16 inch before feeding). You are not likely to get Lyme disease if the tick has been attached to your skin for less than 24 to 48 hours.
- Remove plants that attract deer and periodically clean leaves, brush, tall grasses, and woodpiles from around your house.
- Minimize exposure to wooded areas and shady grasslands during the spring and summer months.

## FOR MORE INFORMATION

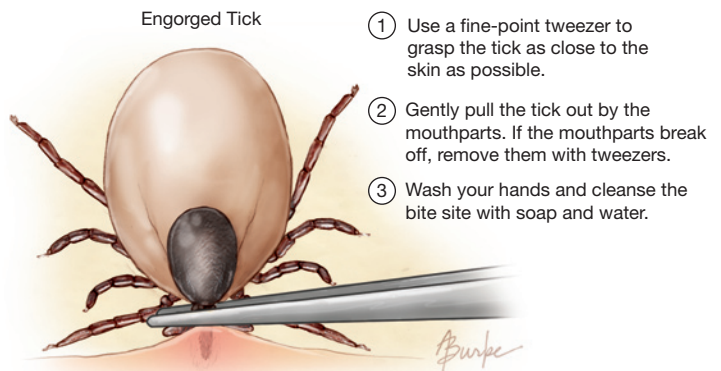
- Centers for Disease Control and Prevention (CDC)  
Division of Vector-Borne Infectious Diseases  
[www.cdc.gov/ncidod/dvbid/lyme](http://www.cdc.gov/ncidod/dvbid/lyme)
- American Academy of Family Physicians (AAFP)  
[www.aafa.org](http://www.aafa.org)

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Sources: Centers for Disease Control and Prevention, American Academy of Family Physicians

## Proper Tick Removal



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