

Diagnosis

Early diagnosis and prompt treatment can help prevent more serious forms of Lyme disease.

- ✦ Early infection may be diagnosed based on symptoms and possible tick exposure.
- ✦ Sometimes blood tests are used to support diagnosis. CDC recommends tests approved by the U.S. Food and Drug Administration.
- ✦ These tests detect antibodies that a person's body makes to fight the infection.
- ✦ It can take several weeks for antibodies to be detectable in a person's blood. People can have a negative blood test if they are tested in the first few weeks after infection.
- ✦ Antibodies can be detected by tests for months to years after successful treatment. This makes it difficult to distinguish between an old and a new infection.

Treatment

A person may be treated with antibiotics if they had recent exposure to ticks in areas where Lyme disease is common and are experiencing symptoms like erythema migrans rash. Most people recover completely.

Some people have prolonged symptoms following antibiotic treatment, including:

- ✦ **Fatigue**
- ✦ **Body aches**
- ✦ **Difficulty thinking**

If you've been treated for Lyme disease with antibiotics and have prolonged symptoms, more antibiotics are unlikely to help and can be harmful. Work with a healthcare provider to develop a plan for managing symptoms.

Everything you need to know about Lyme disease



Scan this QR code to learn more about Lyme disease and preventing tick bites

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What is Lyme disease?

Lyme disease is spread to people through the bite of blacklegged ticks, also called deer ticks. It can cause rash, fever, fatigue, and headache. Most people recover completely when treated promptly with appropriate antibiotics. If left untreated, it can affect the joints, heart, and nervous system.

An estimated **476,000** people are treated for Lyme disease each year, making it the most common tickborne disease in the U.S.

Where Lyme disease occurs

- ✦ Over 90% of Lyme disease cases in the U.S. occur in the Northeast, mid-Atlantic, and upper Midwest. Some cases occur in Pacific coast states.



Most cases of Lyme disease are reported between May and September.



Scan this QR code to see a map of Lyme disease cases in the U.S.

Signs and symptoms

Early symptoms can occur 3 to 30 days after a tick bite:

- ▶ Erythema migrans rash
- ▶ Fatigue
- ▶ Fever
- ▶ Muscle and joint aches
- ▶ Chills
- ▶ Swollen lymph nodes
- ▶ Headache

Erythema migrans rash is one of the first signs of infection.



- ▶ Usually circular or oval, sometimes has a target or bull's eye appearance.
- ▶ Expands gradually over a few days.
- ▶ Rarely itchy or painful.
- ▶ May be hard to see on darker skin.
- ▶ Occurs in 70-80% of people with Lyme disease.

Untreated Lyme disease symptoms can include:

- ▶ Severe headaches and neck stiffness
- ▶ Multiple erythema migrans rashes
- ▶ Facial palsy (loss of muscle tone or droop on one or both sides of the face)
- ▶ Severe joint pain and swelling, particularly the knees and other large joints
- ▶ Intermittent pain in tendons, muscles, joints, and bones
- ▶ Heart palpitations or an irregular heartbeat
- ▶ Episodes of dizziness or shortness of breath
- ▶ Inflammation of the brain and spinal cord
- ▶ Nerve pain
- ▶ Shooting pains, numbness, or tingling in the hands or feet

See a healthcare provider if you develop symptoms within days to weeks of a tick bite or spending time in areas with ticks.

How Lyme disease spreads

In the U.S., Lyme disease is caused by the bacteria *Borrelia burgdorferi* and, rarely, *Borrelia mayonii*. People most often get Lyme disease from the bites of immature ticks called nymphs, which are small and difficult to see. Adult ticks can also transmit the bacteria that cause Lyme disease.

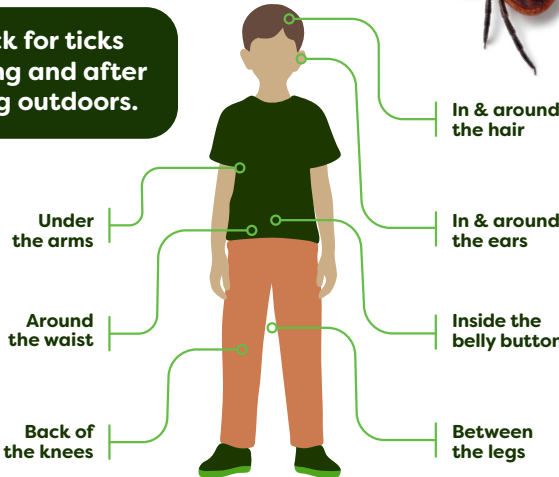


- ▶ In general, infected ticks must be attached for more than 24 hours to transmit the bacteria.
- ▶ Blacklegged ticks live in tall grass, leaf piles, and wooded areas, including yards around your home.

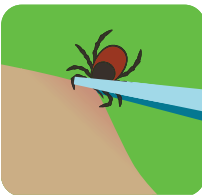
Prevention

- ▶ Use an insect repellent registered with the Environmental Protection Agency.
- ▶ Wear clothing treated with 0.5% permethrin.
- ▶ Shower soon after being outdoors to help find and wash off unattached ticks.

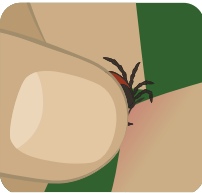
Check for ticks during and after being outdoors.



Remove attached ticks as soon as possible:



- ▶ Use tweezers or fingers to grasp the tick as close to the skin's surface as possible.
- ▶ Pull tick away from skin with steady, even pressure.
- ▶ If pieces of the tick remain in the skin, leave them alone. Your body will naturally push them out as your skin heals.
- ▶ To dispose of the tick, place it in a sealed container, wrap it tightly in tape, flush it down the toilet, or put it in alcohol.



In certain circumstances, a single dose of doxycycline (an antibiotic) after a tick bite in an area where Lyme disease is common may lower risk of Lyme disease. Ask a healthcare provider if antibiotics after a tick bite are appropriate for you.



Create a tick-free yard

- ▶ Keep grass mowed, remove leaf litter, and clear tall grasses and brush.
- ▶ Trim tree branches and shrubs to let in more sunlight.
- ▶ Set up playground equipment, decks, and patios away from grassy, brushy, or wooded areas.
- ▶ Place a 3-foot-wide barrier of wood chips or gravel between lawns and wooded areas.

Protect your pets

Check your pets for ticks after they are outside. Talk to your veterinarian about the best tick prevention product for your dog or cat.

Check pets for ticks daily if they go outdoors.

