



YCPARMIA

Tick Bites

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While most tick bites are harmless, several species can cause life-threatening diseases. Two of these well-known diseases are Rocky Mountain Spotted Fever and Lyme disease. Ticks can also transmit tularemia (a plague-like disease in rodents that can be transmitted to man), relapsing fever, and a newly identified ailment called ehrlichiosis (an abrupt illness consisting of fever, rash, nausea, vomiting, and weight loss).

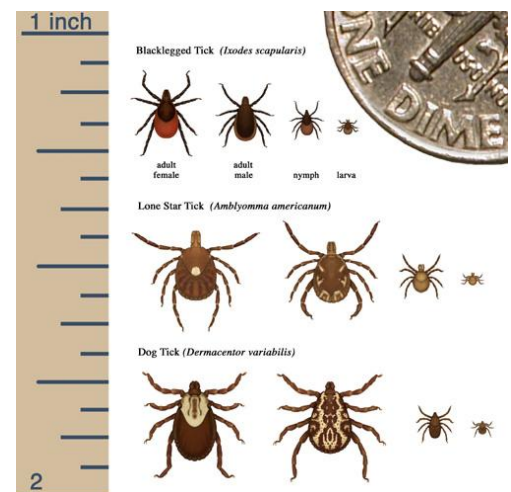
What is Lyme disease?

Lyme disease (LD) is a multi-stage, multi-system bacterial infection caused by the spirochete *Borrelia burgdorferi*, a spiral-shaped bacterium that is most commonly transmitted by a tick bite. According to the Centers for Disease Control and Prevention (CDC), Lyme disease continues to be a rapidly emerging infectious disease, accounting for more than 90 percent of all reported vector-borne illness reported in the United States. A mean of approximately 12,500 cases annually were reported by states to the CDC from 1993 to 1997. The disease takes its name from Lyme, Connecticut, where the illness was first identified in the United States in 1975.

What types of ticks transmit LD?

- *Ixodes scapularis* (Deer tick)
- *Ixodes dammini*
- *Amblyomma americanum* (Lone Star tick)
- *Ixodes pacificus*

Ticks prefer to live in wooded areas, low-growing grasslands, seashores, and yards. Depending on the location, anywhere from less than 1 percent to more than 90 percent of the ticks are infected with spirochetes.



Lyme disease is a year round problem, although, April through October is considered tick season, with ticks being very active in the spring and early summer. Cases of Lyme disease have been reported in 45 states in the US and in large areas in Europe and Asia.

What are the symptoms of Lyme disease?

The list of possible symptoms is long, and symptoms can affect every part of the body. The following are the most common symptoms of Lyme disease. However, each individual may experience symptoms differently:

The primary symptom is a red rash that:

- can appear several days after infection, or not at all
- can last a few hours or up to several weeks
- can be very small or very large (up to 12 inches across)
- can mimic such skin problems as hives, eczema, sunburn, poison ivy, flea bites
- can itch or feel hot, or may not be felt at all
- can disappear and return several weeks later

Several days or weeks after a bite from an infected tick, a patient usually experiences flu-like symptoms such as the following:

- headache
- stiff neck
- aches and pains in muscles and joints
- low-grade fever and chills
- fatigue
- poor appetite
- sore throat
- swollen gland

After several months, arthritis-like symptoms may develop, including painful and swollen joints.

Other possible symptoms may include the following:

- neurological symptoms
- heart problems
- skin disorders
- eye problems
- hepatitis
- severe fatigue
- limb weakness
- poor motor coordinatio

Some people may develop post-Lyme disease syndrome (PLDS), a condition also known as chronic Lyme disease, characterized by persistent musculoskeletal and peripheral nerve pain, fatigue, and memory impairment.

Lyme disease is difficult to diagnose because symptoms are not consistent and may imitate other conditions. The primary symptom is a rash, but it may not be present in up to 25 percent of cases.

Diagnosis for Lyme disease is a clinical one and must be made by a physician experienced in recognizing LD. Diagnosis is usually based on symptoms and a history of a

tick bite. Testing is generally done to eliminate other conditions and may be supported through blood and laboratory tests, although these tests are not absolutely reliable for diagnosing LD.

The symptoms of Lyme disease may resemble other medical conditions or problems. Always consult your physician for a diagnosis.

Treatment for Lyme disease:

Specific treatment for Lyme disease will be determined by your physician based on:

- your age, overall health, and medical history
- extent of the symptoms
- your tolerance for specific medications, procedures, or therapies
- expectations for the course of the condition
- your opinion or preference

Lyme disease is usually treated with antibiotics for a period of four to six weeks.

Treatment will also be considered based on these and other factors:

- If you are bitten by a tick that tests positive for spirochetes
- If you are bitten by a tick and have any of the symptoms
- If you are bitten by a tick and are pregnant
- If you are bitten by a tick and live in an endemic, high-risk area

Relapse and incomplete treatment responses occur. Complications of untreated early-stage disease include: 40 to 60 percent joint disease; 15 to 20 percent neurologic disease; 8 percent carditis; and 10 percent or more are hospitalized, some with chronic debilitating conditions.

How can LD be prevented?

A vaccine against LD has been available for dogs, and, in 1998, the US Food and Drug Administration (FDA) approved a new vaccine against Lyme disease for humans called LYMErix. However, the vaccine was removed from the market in 2002 after many patients complained about adverse side effects.

Recommendations from the FDA for preventing Lyme disease include:

- Dress appropriately by wearing:
 - light-colored clothing
 - long-sleeved shirts

- socks and closed-toe shoes
- long pants with legs tucked into socks
- Frequently check for ticks on:
 - all parts of the body that bend: behind the knees, between fingers and toes, and underarms.
 - other areas where ticks are commonly found: belly button, in and behind the ears, neck, hairline, and top of the head.
 - areas of pressure points, including:
 - where underwear elastic touches the skin.
 - where bands from pants or skirts touch the skin.
 - anywhere else where clothing presses on the skin.
 - Visually check all other areas of the body, and run fingers gently over skin.
 - Shower after all outdoor activities are over for the day.
 - Consider using repellents:
 - Products that contain DEET are tick repellents, but do not kill the tick and are not 100 percent effective in discouraging a tick from feeding on you.
 - Products that contain permethrin are known to kill ticks, however, they should not be sprayed on the skin but on clothing.
 - Check pets and children for ticks.

What to do if you find a tick:

- Do not touch the tick with your bare hand.
- Use a pair of tweezers to remove the tick. Grab the tick firmly by its mouth or head as close to your skin as possible.
- Pull up slowly and steadily without twisting until it lets go. Do not squeeze the tick, use petroleum jelly, solvents, knives, or a lit match to kill the tick.
- Save the tick and place it in a plastic container or bag so it can be tested for disease, if necessary.
- Wash the area of the bite well with soap and water and apply an antiseptic lotion or cream.
- Call your physician to find out about follow-up care and testing of the tick for spirochetes (organisms that may be carried by the tick).