

# Lyme Disease in Mississippi



Although all Mississippians are encouraged to enjoy the state's natural resources, it is important to take certain precautions when enjoying the outdoors. One precaution is to be aware of the symptoms, treatment, and preventive measures for Lyme disease, which you can get from ticks.

There is controversy about Lyme disease in the South. In the past 20 years, the number of Lyme disease cases in the U.S. has risen rapidly, with more than 90 percent of cases being in the Northeast and upper Midwest, leading some researchers to claim that Lyme disease does not exist in the southern U.S. But physicians do, indeed, diagnose Lyme disease or a Lyme-like illness in the South, and about 5 to 50 cases of Lyme-like illness are reported to the Mississippi Department of Health every year (although cases are almost never confirmed).

## What is Lyme disease?

Lyme disease is a tick-borne bacterial disease that affects humans and pets. It is named after Lyme, Connecticut, where an outbreak of arthritis in children occurred in the mid-1970s. Later, Dr. Willy Burgdorfer at the Rocky Mountain Laboratories isolated the cause of the disease, and it was named in his honor.

Lyme disease is caused by a spirochete, or corkscrew-shaped, bacterium. Ticks transmit it to humans and animals. In the southern United States, the bacterium has been found (although very rarely) naturally occurring in the black-legged or deer tick. This tick is a winter tick in the South, with the adults being active October through April, while immature (baby) ticks are active primarily in late spring and early summer.

Ticks usually acquire the Lyme disease agent by feeding on infected white-footed mice; they ingest the bacterium and later pass it to humans. Normally, a tick has to be attached 36 to 48 hours before the bacterium is transmitted. Once in the bloodstream, the bacterium causes a wide array of symptoms.



Ticks carry the bacterium that causes Lyme disease. (Photo by James Gathany, Centers for Disease Control and Prevention)

## What are some misconceptions about Lyme disease?

- If you don't develop the rash, you do not have Lyme disease. This is not true. Approximately one in five people (20 percent) never develop a rash, yet they have Lyme disease.
- If you test negative for Lyme disease, you do not have the disease. This is not necessarily true. The test for Lyme disease is not always reliable. Many people remain untreated because of negative test results; when this happens, they might become ill and suffer possible permanent damage. Physicians sometimes play it safe and treat for Lyme disease if it is even suspected.
- Lyme disease is deadly. Not necessarily true. Although some people have died from Lyme disease, it is generally not life-threatening. But Lyme disease can be a long and debilitating illness.

## What are the symptoms of Lyme disease?

Along with flu-like symptoms, a rash shaped like a bull's-eye sometimes appears at the site of a tick bite. This rash is a definitive indication of infection in endemic areas. However, it should be noted that similar rashes may occur as a result of allergic reactions to tick bites.

The early symptoms of Lyme disease are mild, mimic many other illnesses, and are often overlooked. Flu-like



A rash shaped like a bull's eye sometimes appears at the site of a tick bite. (Photo by Centers for Disease Control and Prevention)

symptoms may include headaches, swollen lymph nodes, stiff and painful joints and muscles, fatigue, and low-grade fever. Other symptoms of early-stage Lyme disease may include changes in vision and hearing, tingling or numbness of extremities, heart abnormalities, rib soreness, shortness of breath, and facial palsy (Bell's palsy).

Symptoms may occur several weeks after infection. If untreated, the rash and symptoms subside, although the infection may persist. People who do not develop the rash often go untreated for some time. A relatively short course of antibiotics at this stage can cure Lyme disease.

Several months after infection, symptoms involving the musculoskeletal system, the nervous system, and the heart may develop or worsen. These may include muscle aches, joint swelling and pain, and rib soreness. Nervous system symptoms may include a stiff neck, headache, irritability, difficulty sleeping, confusion, difficulty concentrating, tingling of extremities, and vision problems. Irregular heart-beat is also common. Longer periods of antibiotic treatment might be required to treat Lyme disease at this stage.

Months to years after infection, more severe and chronic symptoms may develop. Arthritis or pain in large joints may occur along with numbness and tingling of extremities. Also common are Bell's palsy (facial paralysis), paralysis of limbs, short-term memory loss, inability to finish sentences, hearing and vision problems, severe sleep disorder or sleep disturbance, depression, heart palpitations, tremors, confusion, disorientation, speaking and writing difficulty, and mood swings. Treatment of Lyme disease in this later stage is more difficult.

Because ticks may be small, patients may not recall the tick bite or attribute their illness to a tick bite. This is especially true because the most common carrier (at least in the northern states) is the nymphal stage, which is significantly smaller than an adult tick and easily overlooked.

Diagnosing Lyme disease is often difficult unless the bull's-eye rash is present. Lyme disease affects each patient differently, with a wide variation in symptoms. Because Lyme disease mimics other diseases, this can lead to its misdiagnosis as multiple sclerosis, lupus, or other diseases. Tests for Lyme disease are sometimes unreliable and can yield false negative results. Doctors may hesitate in treating patients, especially in the early stages of Lyme disease. In later stages, a positive result is more likely. It may be better to be cautious and treat for Lyme disease if it is suspected.

## How is Lyme disease treated?

It is important to diagnose and treat Lyme disease in its early stages to prevent progression to later stages. At later stages, Lyme disease is more difficult to treat. In its early stages, Lyme disease can be easily cured with several weeks of antibiotic treatment, depending on the stage and severity of the disease. But in later stages, Lyme disease can become quite difficult to treat, and IV treatments might be needed.

## How can Lyme disease be prevented?

If you enjoy the outdoors, do not stop enjoying it. But take steps to prevent Lyme disease:

- Avoid tick-infested areas when ticks are most active. Further information about ticks occurring in Mississippi can be found in Mississippi Agricultural and Forestry Experiment Station Bulletin 1150 *A Guide to Ticks of Mississippi*.
- Wear light-colored clothes to make it easier to spot ticks, and wear long-sleeved shirts when possible. Tuck pant legs into socks or boots, and tuck shirts into pants. When ticks attach to their prey, they move upward, looking for places to attach. Tucking in pants and shirts forces them to remain on the outside of clothing, where you can find them easier. Wear closed-toed shoes.
- Apply insect repellents containing permethrin to pants, socks, and shoes but not to skin. You can apply repellents containing DEET or picaridin to skin, but wash them off after coming indoors.
- Walk in the middle of trails to avoid grasses and shrubs. Ticks wait on the tips of grasses and low shrubs for prey.
- After being outdoors, wash and dry your clothing on the hot setting.
- Thoroughly inspect your body, and remove any attached ticks. To remove a tick, use tweezers to grasp it by the head or mouthparts, and pull firmly. Do not squeeze the body or apply petroleum jelly, a hot match, or any other irritant.

Although precautions will help, about 50 percent of people with Lyme disease don't remember receiving a tick bite. Anyone who has spent time outdoors and who comes down with a flu-like illness in summer should suspect a tick-borne disease such as Rocky Mountain spotted fever or Lyme disease. Be sure to tell your doctor if you have had a recent tick bite.

## What should you do if you think you have Lyme disease?

Go promptly to your doctor. If your condition continues to worsen, perhaps you should seek a second opinion from another doctor. Lyme disease can be difficult to diagnose because it imitates other diseases and the blood test is sometimes unreliable.

For more information on Lyme disease:

Epidemiology Division  
Mississippi Department of Health  
601-576-7725  
[www.msdh.state.ms.us](http://www.msdh.state.ms.us)

Centers for Disease Control  
[www.cdc.gov](http://www.cdc.gov)

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Revised by **Jerome Goddard**, PhD, Extension Professor, Entomology, and **Andrea Varela-Stokes**, DVM, PhD, Associate Professor, Department of Basic Sciences, College of Veterinary Medicine.



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