

# Lyme Disease

Lyme disease is a bacterial infection spread by ticks. It is especially common in the northeastern United States but can occur in other areas as well. Lyme disease can cause lasting symptoms, especially if it is not recognized and treated promptly. With appropriate and timely treatment, nearly all patients with Lyme disease recover completely.

## What is Lyme disease?

Lyme disease is an infectious disease caused by bacteria carried by deer ticks. People can only get Lyme disease when they are bitten by an infected tick. The disease begins with a circular, red rash that continues to expand over days. Some patients have more general symptoms.

Without treatment, arthritis and other symptoms can eventually develop. Once Lyme disease is diagnosed and treated, the infection generally clears up with no further harmful effects.

Lyme disease causes a lot of concern in areas where it is common, especially in New England and the Middle Atlantic states. (The disease is named after Lyme, Connecticut, where it was first discovered.) However, the risk of catching the infection is relatively low, even in those areas and even after tick bites. Wearing protective clothing while in wooded areas is a simple way to prevent tick bites and Lyme disease.

## What does it look like?

Symptoms of Lyme disease vary but are usually divided into early and late phases.

### Early phase:

- The usual first symptom of Lyme disease is a red rash (typically called *erythema chronicum migrans*). The rash usually appears at the area of the tick bite a week or two following the bite. The typical rash is a red ring around a white central area that sometimes looks like a target.
- The rash may be itchy and painful and may occur anywhere on the body. Without treatment, the area of the rash may become quite large.
- While the rash is spreading, your child may have other symptoms, such as fever, sore muscles, headache, and just “feeling sick.”
- After a few days or weeks, the rash may spread to other parts of the body. Fever and aches may occur, and your child may have red, irritated eyes and swollen lymph glands. Involvement of the heart (carditis) is rare but may occur.

- Nervous system abnormalities may occur, such as:
  - Meningitis, causing symptoms like headache and stiff neck.
  - Bell’s palsy, causing temporary difficulty moving some of the facial muscles.

### Late phase:

- Later on, Lyme disease may cause other symptoms, especially when no treatment has been given.
- Arthritis is the most common late symptom. Swelling and soreness of the knees is most common, although any joint may be affected. Joint swelling may go away after a week or two. Then it may return, sometimes in a different joint. Without treatment, arthritis attacks may last for a longer time.
- Later, neurologic symptoms can occur. This is rare in children.

## What causes Lyme disease?

Lyme disease is caused by bacteria called *Borrelia burgdorferi*. The bacteria is spread to your child when bitten by a tick infected with the bacteria.

## What are some possible complications of Lyme disease?

Serious complications of Lyme disease are uncommon, especially with treatment. There is a small chance of infection involving the heart or of more serious infections involving the nervous system.

## What puts your child at risk of Lyme disease?

- Living in areas where ticks infected with the bacteria are common.
- Going into woody or grassy areas, where those ticks may be present, without wearing protective clothing.

## Can Lyme disease be prevented?

The most important step in preventing Lyme disease is to make sure your child’s skin is covered when walking or playing in areas where ticks might be present:

- Have your child wear long pants and long-sleeved shirts. Tuck the bottom of your child’s pant leg into his or her socks or boots.
- Apply insect repellent containing “DEET” to your child’s clothes.

- Examine your child's body for ticks after spending time outdoors ("tick checks").
- If you see a tick, remove it using tweezers. Be careful not to leave the head. Removing ticks within 48 hours will prevent the child from catching the disease.
- Most tick bites do not cause Lyme disease.

### How is Lyme disease diagnosed and treated?

- The first step in effective treatment is recognizing that Lyme disease is present. Many possible conditions can look similar to Lyme disease, and tests to detect antibodies to *Borrelia* bacteria have important limitations.
- Because testing is not that accurate, it should be used only when Lyme disease is possible, based on your child's symptoms and whether the disease is present in your area. Even if your child tests positive for *Borrelia* antibodies, this doesn't conclusively prove that Lyme disease is the cause of his or her symptoms.
- Early recognition allows prompt treatment of Lyme disease. This may shorten the duration of symptoms. However, no studies have specifically looked at Lyme disease treatment in children.

- The usual treatment for Lyme disease in children over 8 is an antibiotic called doxycycline. Younger children may be given a different antibiotic.
- The antibiotic is usually given three times daily for 2 to 3 weeks. Make sure your child finishes the entire prescription, even if he or she is feeling better.
- Doxycycline can make the skin very sensitive to sunlight. Keep your child's skin covered when he or she is outdoors during treatment.
- While your child is recovering, use medications such as acetaminophen or ibuprofen to reduce headaches and muscle aches.

### When should I call your office?

Call our office if your child develops any of the following symptoms:

- Stiff neck; severe headache.
- Other signs of nervous system abnormality, such as muscle weakness, numbness, difficulty moving the facial muscles, confusion.
- Joint pain and swelling (arthritis).