

September 2022 Newsletter



Lyme Disease – A Ticking Time Bomb

An accurate MS diagnosis can be challenging because the disease “looks” different in everyone and its symptoms often mimic other conditions. Lyme disease is a tick-borne illness that has many symptoms in common with MS. In fact, a [recent study](#) shows individuals with Lyme disease are often misdiagnosed with MS. Distinguishing between the two conditions is very important because Lyme disease, especially when treated early, often responds to antibiotic therapy, whereas MS does not.



According to the Centers for Disease Control (CDC), there are at least [30,000 reported cases](#) of Lyme disease in the United States each year. Given the overlap between Lyme and MS, one may wonder how often do they occur together? Research into this has returned conflicting results. [Investigators](#) in Poland found that Lyme disease is often associated with MS. On the other hand, a [1989 study](#) found that Lyme disease in MS is rare. More recently, a [2020 study](#) supported this conclusion. Investigators looked at a cohort of 90 people with MS, none of which tested positive for Lyme.

Lyme disease is caused by the spirochete (spiral-shaped) bacterium [Borrelia burgdorferi](#). It was first recognized in 1975 when large numbers of children were mistakenly diagnosed

with juvenile rheumatoid arthritis in Lyme, Connecticut, and two neighboring towns. Researchers determined bites from infected deer ticks were responsible for the outbreak. Ticks live in wooded areas, or where there are tall grasses, and typically feed during the summer months. They acquire the bacteria by feeding on an infected host animal. The infection can be transmitted to a human if an infected tick bites and remains attached to their skin for more than 36 hours. Most people are infected by immature ticks called nymphs, which are tiny and difficult to see. For this reason, many people are not aware they've been bitten.



Untreated Lyme disease progresses through three stages as the condition worsens. Symptoms of **early localized Lyme disease** (the first stage) can develop within hours of a tick bite, but they can also take weeks to appear. **Early disseminated Lyme disease** occurs several weeks or months after the infection begins, when bacteria are beginning to spread throughout the body. If Lyme disease isn't promptly or effectively treated in the first two stages, **late disseminated Lyme disease** (also known as neurological Lyme disease) occurs. This can be weeks, months or even years after the tick bite, when the infection has spread throughout the body, affecting multiple organs and body systems.

Lyme Disease symptoms:

Early Localized Lyme Disease	Early Disseminated Lyme Disease	Late Disseminated Lyme Disease
<ul style="list-style-type: none"> • Skin rash • Fever • Chills • Fatigue • Headache • Stiff neck • Muscle soreness • Joint pain • Swollen lymph nodes • Sore throat 	<ul style="list-style-type: none"> • Symptoms of early localized Lyme disease PLUS: • Blurred vision • Arm/leg pain, weakness or numbness • Heart palpitations • Chest pain • Bell's palsy (facial paralysis) 	<ul style="list-style-type: none"> • Symptoms of early disseminated Lyme disease PLUS: • Arthritis • Vertigo, dizziness • Insomnia • Concentration issues • Difficulty with information processing

important to note that Lyme blood tests cannot be used to determine if the infection has resolved because antibodies persist in the blood for months or even years after the infection is gone.



The antibiotics used to treat Lyme disease are [doxycycline](#) and [amoxicillin](#). They are usually taken orally in the early stages of Lyme. If treatment is later in the disease course, intravenous administration may be necessary. Antibiotic therapy is completely effective at resolving a *Borrelia burgdorferi* infection in the majority of cases. However, some people may go on to develop chronic symptoms after treatment. This is known as **post-treatment Lyme disease syndrome** (PTLDS) or chronic Lyme disease. [Research](#) shows that prolonged antibiotic therapy is not helpful and even carries significant risk for individuals with PTLDS.

Tick prevention is the best way to prevent Lyme disease. It's important to avoid tick-infested areas while outside (high grass, brush or wooded areas). Using insect repellents and treating clothing and gear with [permethrin](#) is also helpful. When hiking, it's a good idea to wear closed shoes or boots, long-sleeved shirts and long pants. Tucking pant legs into socks or shoes helps to prevent ticks from crawling up the legs. Wearing light-colored clothing makes ticks more visible. It's important to do a full body check and shower upon returning indoors. If any attached ticks are found, carefully remove them right away and keep an eye on the site of attachment for any rash that may develop. Tick prevention for pets is equally important, not just for their sake, but also for their owner's (they can serve as tick "carriers").

MS and Lyme disease are conditions that have overlapping symptoms. They may also look similar on brain scans and other diagnostic tests. Nevertheless, making the distinction is very important. They stem from very different causes, and their prognosis and treatment are nothing alike. Anyone experiencing Lyme symptoms should seek medical advice right away. Early diagnosis and treatment are key to achieving the best outcomes.



P.S. To learn more about the complexities of distinguishing between Lyme disease and MS, visit [Sit Down Before Reading: An Epic Medical Memoir](#), by Dave Bexfield.