

Lyme Disease Now Found in All US States

Analysis by [Dr. Joseph Mercola](#)

✓ Fact Checked

August 10, 2023

STORY AT-A-GLANCE

- › According to Centers for Disease Control and Prevention (CDC) statistics released in 2013, an estimated 300,000 new cases of Lyme disease were being diagnosed in the U.S. each year
- › Diseases such as Parkinson's, multiple sclerosis and chronic fatigue are all expressions of chronic infections, and Lyme disease appears to be a major, yet oftentimes hidden, player
- › Lyme disease used to be confined to the area of New England. Now, a Quest Diagnostics health trend report warns the tick-borne disease has spread and is being diagnosed in every U.S. state, including Florida and California
- › Lyme disease typically starts with unrelenting fatigue, recurring fever, headaches and achy muscles or joints, which may progress to muscle spasms, loss of motor coordination and/or intermittent paralysis, meningitis or heart problems
- › Lyme can thrive in biofilms in your body. The supplement lumbrokinase has been shown to help break down these infected biofilms, and are often helpful when other treatment strategies fail or improvement has stalled

Editor's Note: This article is a reprint. It was originally published August 22, 2018.

It's now well-recognized that chronic infection is an underlying factor in many if not most chronic illnesses. Diseases such as Parkinson's, multiple sclerosis, cardiomyopathy, gastritis and chronic fatigue are all turning out to be expressions of

chronic infections, and Lyme disease appears to be a major, yet oftentimes hidden, player.

According to Centers for Disease Control and Prevention (CDC) statistics released in 2013,^{1,2} an estimated 300,000 new cases of Lyme disease were being diagnosed in the U.S. each year. That's about 10 times higher than the officially reported number of cases, and is indicative of severe underreporting.

Lyme Disease Now Found in All 50 States

Lyme disease used to be confined to the area of New England. The disease is actually named after the East Coast town of Lyme, Connecticut, where the disease was first identified in 1975.³

Now, a Quest Diagnostics health trend report⁴ warns the tick-borne disease has spread and is being diagnosed in every state in the U.S.^{5,6} Last year, 10,001 cases of Lyme were diagnosed through Quest Diagnostics' testing in Pennsylvania alone, the state with the highest prevalence.

New England states (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island and Vermont) accounted for the vast majority – 60% – of the cases diagnosed through Quest, numbering 11,549 in total. Between 2016 and 2017, prevalence rose by 50% in New England and 78% in Pennsylvania.

However, positive tests also rose in areas where Lyme has previously been absent, including Florida and California. Overall, over the past seven years the greatest uptick in positive tests occurred between 2016 and 2017. According to Harvey W. Kaufman, senior medical director for Quest Diagnostics:⁷

"Lyme disease is a bigger risk to more people in the United States than ever before. We hypothesize that these significant rates of increase may reinforce other research suggesting changing climate conditions that allow ticks to live longer and in more regions may factor into disease risk."

Lyme Disease 101

Lyme disease refers to illnesses transferred by insects. Although some still attribute transmission exclusively to ticks, the bacteria can also be spread by other insects, including mosquitoes, spiders, fleas and mites. Ticks are blood suckers, and prefer dark crevices such as your armpit, behind your ear or on your scalp.

Once it attaches itself and starts feeding on your blood, it will at some point "spit" its bacterial load into your blood stream. If it carries an infectious organism, the infection spreads to you via this salivary emission. The black-legged tick (*Ixodes scapularis*, also known as the deer tick) was linked to transmission of the disease in 1977.

In 1982, Willy Burgdorfer, Ph.D., identified the bacterium responsible for the infection: *Borrelia burgdorferi*⁸ – a cousin to the spirochete bacterium that causes syphilis. Since then, five subspecies and 300 strains of *B. burgdorferi* have been identified, many of which have developed resistance to our various antibiotics.

B. burgdorferi is capable of taking different forms in your body (cystic, granular and cell wall deficient forms) depending on the conditions it's trying to survive in. This clever maneuvering helps it hide and survive. Its corkscrew-shaped form also allows it to burrow into and hide in a variety of your body's tissues, which is why it causes such wide-ranging multisystem involvement.

The organisms may also live in biofilm communities – basically a colony of germs surrounded by a slimy glue-like substance that is hard to unravel. All of these different morphologies explain why treatment is so difficult, and why recurrence of symptoms occurs after standard antibiotic protocols.

Ticks can also simultaneously infect you with other disease-causing organisms, such as *Bartonella*, *Rickettsia*, *Ehrlichia* and *Babesia*. Any or all of these organisms can travel with *B. burgdorferi* (the causative agent of Lyme) and add their own set of symptoms. Many Lyme patients have one or more of these coinfections, which may or may not respond to any given treatment.

Signs and Symptoms of Lyme

Common side effects of tick bites include:

- An itchy "bull's-eye" rash (however, while this is the only distinctive hallmark unique to Lyme, this mark is absent in nearly half of those infected, and only 15 to 50% of Lyme patients recall a tick bite)
- Pain
- Fever
- Inflammation

A 2014 paper published in the journal *Frontiers in Zoology*^{9,10} has argued that ticks should be reclassified as venomous, noting that many of its salivary proteins and their known functions are similar to those found in scorpion, spider, snake, platypus and bee venoms. An estimated 8% of tick species are in fact capable of causing paralysis with a single bite.

Symptoms of Lyme disease typically start with unrelenting fatigue, recurring fever, headaches and achy muscles or joints, which may progress to muscle spasms, loss of motor coordination and/or intermittent paralysis, meningitis or heart problems. For a printable list of symptoms, refer to the Lyme Disease Association.¹¹ [Lymedisease.org](http://lymedisease.org) has also created a printable symptom checklist.¹²

The simplest presentation is the orthopedic form of Lyme disease, which is typically more superficial, affecting the larger joints. When the microbes and associated immune reactions are situated in your connective tissue, the infection presents as a "vague, dispersed pain," which oftentimes ends up being misdiagnosed as fibromyalgia.

Lyme disease, just as syphilis was, is also known as "the great imitator,"¹³ as it mimics many other disorders, including multiple sclerosis, arthritis, chronic fatigue syndrome, fibromyalgia, ALS, ADHD and Alzheimer's disease. Interestingly enough, despite debilitating symptoms, many Lyme patients outwardly appear quite healthy, which is why Lyme disease has also been called "the invisible illness."

What's Causing the Rapid Spread of Lyme Disease?

Over the years, a number of theories have been presented to explain the rapid increase of Lyme, and its geographical spread. According to the CDC, climate change may be part of the equation. The migration of hosts such as deer and rodents due to changes in land use is another. As reported by the Center for Public Integrity:¹⁴

"The link between Lyme disease and climate change isn't as direct as with other vector-borne diseases. Unlike mosquitoes, which live for a season and fly everywhere, deer ticks have a two-year life cycle and rely on animals for transport. That makes their hosts key drivers of disease.

Young ticks feed on mice, squirrels and birds, yet adults need deer ... to sustain a population. Rebecca Eisen, a federal CDC biologist who has studied climate's influence on Lyme, notes that deer ticks dominated the East Coast until the 1800s, when forests gave way to fields.

The transition nearly wiped out the tick, which thrives in the leaf litter of oaks and maples. The spread of the deer tick since federal Lyme data collection began in the 1990s can be traced in part to a decline in agriculture that has brought back forests while suburbia has sprawled to the woods' edges, creating the perfect habitat for tick hosts.

Eisen suspects this changing land-use pattern is behind Lyme's spread in mid-Atlantic states like Pennsylvania, where the incidence rate has more than tripled since 2010. 'It hasn't gotten much warmer there,' she says.

But climate is playing a role. Ben Beard, deputy director of the federal CDC's climate and health program, says warming is the prime culprit in Lyme's movement north.

The CDC's research suggests the deer tick, sensitive to temperature and humidity, is moving farther into arctic latitudes as warm months grow hotter

and longer. Rising temperatures affect tick activity, pushing the Lyme season beyond its summer onset."

Declining Fox Population May Be a Driving Force

Other research pins the spread of Lyme to rodents, more so than deer. The main predators of mice and rats are fox, birds of prey such as hawks, falcons and owls, and snakes and cats. Agricultural and urban sprawl is killing off habitats for all kinds of animals, including these natural predators.

The red fox, for example, feeds on rodents, but urban and agricultural sprawl, and the competition with coyotes for habitat has caused the fox population to diminish. Hunting cannot be blamed for killing of the fox population today. Fox were overhunted in the early 1900s, but today fox hunting and trapping has either been restricted or banned for decades.

Instead, the vanishing fox population appears to be primarily caused by an increase in coyotes.¹⁵ The coyote population is thriving in almost every state now, and is killing off the only predators of rodents left – fox and cats. As a result, Lyme disease is becoming more widespread and prevalent.

Indeed, one study¹⁶ confirmed that increases in Lyme disease in the Northeast and Midwest in the past three decades consistently correlated to rangewide declines in red fox. It also found that as fox decrease, rodents increase. Coyotes do not help control small rodents because they prefer larger prey.

Diagnosing and Treating Lyme Disease

For reasons mentioned above, diagnosing Lyme is tricky business. Patience and persistence is required. Negative test results are common when you have Lyme, as the spirochete has the ability to infect your white blood cells.

Lab tests rely on the normal function of these cells, but when the white blood cells are infected with Lyme, they actually lose the ability to produce antibodies. Hence, nothing shows up on the test. This is known as the "Lyme paradox," and necessitates putting treatment before diagnosis.

The idea is that by treating the infection, your white blood cells will regain their ability to mount a normal immune response, which can then be picked up by blood tests.

According to Klinghardt, the IGeneX Lab in Palo Alto is the gold standard for Lyme testing, as they use two different antigens in their testing.

There's also a useful indirect test called the CD57 test. "CD-57" is a specific group of natural killer cells that are particularly damaged by the Lyme spirochetes. Therefore, if your numbers drop to a certain level, it is an indirect indicator that you may have Lyme disease, because the only known infection to suppress CD57 is that of *B. burgdorferi*.

Addressing Electromagnetic Field Exposure Is Crucial

As for treatment, Klinghardt is adamant about patients addressing exposure to electromagnetic fields (EMFs) during treatment. In fact, he will not treat you unless you take steps to minimize your **EMF exposure**, as it can have a truly profound impact on the disease.

He's convinced the increased virulence we're now seeing is related to the dramatic increase in EMFs and microwave radiation from cellphones, cell towers, and all manner of wireless technologies. He also believes heavy metal toxicity exacerbates the problem.

"One of my primary treatments for Lyme disease is to put people in protective clothing that shields them from incoming microwaves. We shield the bedside. We turn off the wireless internet at home. We put shielding paint on the houses.

That has been a more successful strategy to treating Lyme disease and to get people neurologically well than any of the antibiotics or any of the antimicrobial compounds," he says.

You can also learn more about Lyme disease from the International Lyme and Associated Disease Society on ILADS.org.¹⁷

Lumbrokinase Helps Break Down Biofilms Associated With Lyme

As mentioned earlier, *B. burgdorferi* can live and thrive in biofilms inside your body. While conventional treatment typically involves long-term antibiotic use, I encourage you to investigate the natural solutions available, including lumbrokinase, which has been shown to help break down these infected biofilms.

Lumbrokinase is the name of a group of six proteolytic (protein digesting) enzymes derived from earthworms. When pathogenic bacteria hide within biofilms, they can feed and replicate out of the reach of your immune system.

As such, they remain strong and unaffected by any antimicrobial medications such as antibiotics and herbs that you may be taking. The fact that lumbrokinase breaks down fibrinogen is an important aspect of Lyme treatment because the pathogenic bacteria use fibrinogen, which they convert to fibrin, to strengthen their network.

Researchers studying the effects of lumbrokinase¹⁸ say earthworms have been used for thousands of years within traditional medicine in countries such as China, Japan and Korea. Dry earthworm powder taken orally has been shown to promote healthy blood circulation.

The group of enzymes in lumbrokinase acts as fibrinolytic agents, meaning they break down clots, making them useful to treat conditions associated with thrombosis.

According to the study authors:¹⁹

"Earthworms contain many compounds with potential medicinal properties and have been administrated to treat inflammatory, hematological, oxidative and nerve disease. Earthworms also have antimicrobial, antiviral and anticancer properties. Among many properties, earthworms also exhibit fibrinolytic activity. The pharyngeal region, crop, gizzard, clitellum and intestine secret an enzyme that plays a role in dissolving fibrin."

Lumbrokinase in the Treatment of Lyme

Dr. Miguel Gonzalez, a functional, integrative and holistic medicine specialist from Thousand Oaks, California, and creator of the Lyme People website, suggests lumbrokinase "appears to assist in dissolving the excess fibrin that covers and hides the bacteria, is involved in the regulation of blood clotting and also eliminates the abnormal proteins that are released as a result of the bacteria's activity."²⁰

Lyme expert Dr. Marty Ross, integrative medicine specialist and founder of The Healing Arts Partnership in Seattle, also uses lumbrokinase, both alongside antibiotics, and for patients in whom antibiotics fail.²¹ Describing his treatment, Ross says:²²

"... [S]ome of my patients prefer not to use conventional pharmaceuticals or just can't tolerate them. In that case, I use one or more of four herbal antimicrobials: cumanda, andrographis, teasel and cat's claw.

I prescribe one 20 milligram (mg) pill of lumbrokinase two times a day. I recommend this for patients who have been stalled for a while on more straightforward treatment and are not improving. I generally start to see improvement once I add in the lumbrokinase."

If you and your doctor determine lumbrokinase is right for you, be sure to buy a high-quality, reputable brand. Certain brands are available in capsule form at a dose of 600,000 IU (international unit), or 40 mg, which are recommended for Lyme sufferers in the form of a daily dose of 1 to 2 capsules taken in the morning, afternoon and at bedtime.

Generally, lumbrokinase should be taken only under the advisement of your doctor and can be dangerous if taken with blood-thinning medication. In addition, it's contraindicated in all medical conditions associated with an increased risk of bleeding.

Lyme Prevention Basics

Considering the difficulty of diagnosing and treating Lyme disease, you'd be wise to take preventive measures whenever venturing outdoors. And remember, it really doesn't matter where you live anymore, since no region of the U.S. is exempt these days.

Commonsense prevention strategies include:²³

- Avoid tick-infested areas such as leaf piles around trees. Walk in the middle of trails and avoid brushing against long grasses on path edgings. Don't sit on logs or wooden stumps, and avoid setting up camp or pitching a tent in areas covered with leaves
- Wear light-colored long pants and long sleeves to make it easier to see the ticks
- Tuck your pants into socks and wear closed shoes and a hat, especially if venturing out into wooded areas. Also tuck your shirt into your pants, and wear gardening gloves when gardening or working in the brush
- Ticks, especially nymphal ticks, are very tiny. You want to find and remove them before they bite, so do a thorough tick check upon returning inside, and keep checking for several days following exposure. Also check your bedding for several days following exposure
- Your pets can become a host for ticks and may also become infected with Lyme disease, so be sure to check their fur and collars

As for using chemical repellents, I do not recommend using them directly on your skin as this will introduce toxins directly into your body. If you use them, spray them on the outside of your clothes, taking care to avoid inhaling the spray fumes. I recommend avoiding insect repellent containing N,N-Diethyl-m-toluamide, also known as DEET, as it is a known neurotoxin.

The Environmental Protection Agency (EPA) has a list²⁴ indicating the hourly protection limits for various repellents. If you find that a tick has latched onto you, it's very important to remove it properly. For detailed instructions, please see [Lymedisease.org's](http://Lymedisease.org) Tick Removal page.²⁵ Once removed, make sure you save the tick so that it can be tested for presence of pathogenic organisms.

Sources and References

- ¹ The 13th International Conference on Lyme Borreliosis and other Tick Borne Diseases Boston, MA, August 18-21, 2013
- ² CDC.gov Press Release August 19, 2013
- ³ CDC MMWR January 15, 1988
- ⁴ Quest Data Health Trends Report: Lyme Disease July 2018
- ⁵ Washington Post August 4, 2018
- ⁶ Gizmodo August 8, 2018
- ⁷ Quest Diagnostics Press Release, Lyme Disease Health Trends
- ⁸ UC Berkeley Museum of Paleontology
- ⁹ Frontiers in Zoology 2014, 11:47
- ¹⁰ Science News July 9, 2014
- ¹¹ Lyme Disease Association February 1, 2017
- ¹² Lymedisease.org, Symptom Checklist (PDF)
- ¹³ Symbiosis 2009
- ¹⁴ Center for Public Integrity August 6, 2018
- ¹⁵ Live Science September 25, 2017
- ¹⁶ Cary Institute January 14, 2014
- ¹⁷ ILADS.org
- ^{18, 19, 20} Evidence-Based Complementary and Alternative Medicine December 12, 2013; 2013: 783971
- ²¹ Treat Lyme September 30, 2014
- ²² Tick Talk Ireland, Lyme Disease Awareness in Ireland – Alternative Treatments
- ²³ Lymedisease.org Preventive Measures
- ²⁴ EPA Insect Tick Repellents (PDF)
- ²⁵ Lymedisease.org Tick Removal