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Don't Get Deceived by Lyme Disease and Its Sneaky Symptoms

We face a global epidemic of chronic illness. An estimated 45% of the U.S. population struggles with at least one chronic illness. And one disease is playing a major role in the spread of chronic illness — Lyme disease. [\(1\)](#)

According to The Centers for Disease Control and Prevention (CDC), Lyme disease produces approximately 30,000 new cases each year in the United States alone. But the expected actual number of cases is more than 10 times higher. Why? Because thousands of cases go undiagnosed, misdiagnosed, or untreated. [\(2\)](#)

Let's take a closer look at Lyme — a sneaky perpetrator of chronic illness today — and its symptoms that often get overlooked.

Top 5 Facts About Lyme Disease

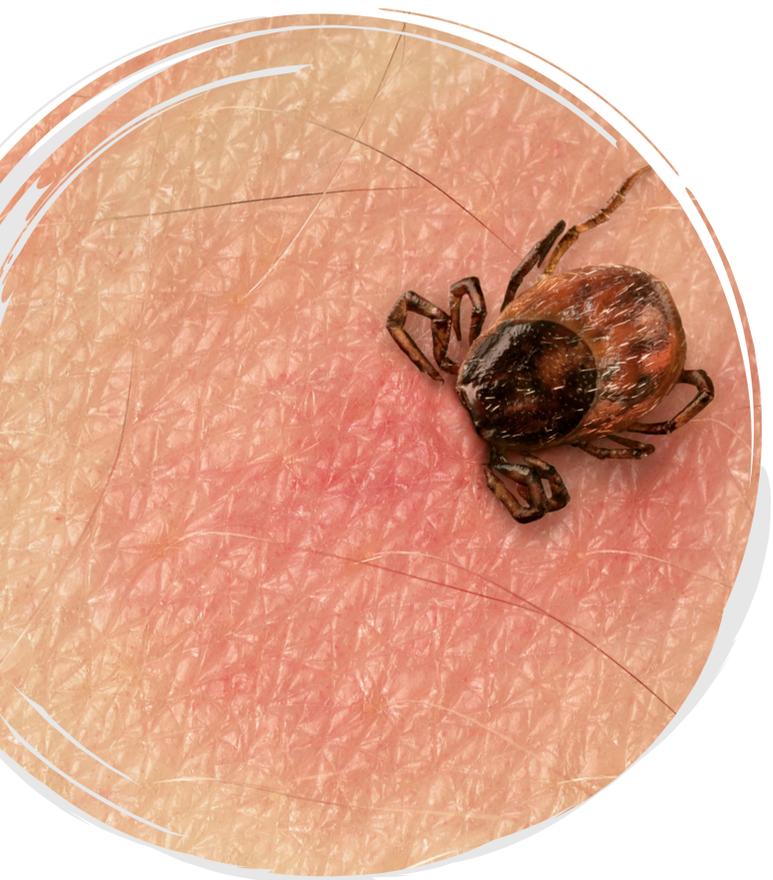
#1: Not Only Transmitted by Tick Bites

Other insects besides ticks may transmit and carry Lyme disease. For example, mosquitoes, fleas, mites, and other biting bugs can transmit Lyme. Along with this, research suggests that Lyme may also be transmitted through placenta, breast milk, feces, blood, saliva, urine, raw food, and sexual intercourse. (3)



#2: Not All Lyme-Infected People Develop a Bullseye Rash

A common myth is that a tick bite will always produce a bullseye rash. But that's not the case every time. 20–30% of people never get a rash when bitten, and some miss the rash altogether. So you may get infected without even realizing it. (4)



#3: Standard Blood Testing for Lyme Disease Is Unreliable

Today's standard antibody blood test for Lyme disease is often inaccurate, especially testing soon after transmission. The estimated accuracy of this test during beginning stages of Lyme ranges between 35–50%. This means you can receive a negative diagnosis but still have Lyme disease. ([5](#))



#4: Many Ticks Carry Coinfections

Ticks can transmit more than Lyme disease. They can also carry multiple pathogens, called coinfections, and can pass dozens of different illnesses on to you. A survey of chronic Lyme-infected people found that 50% had at least one coinfection, while almost 30% had at least two. So if you have chronic illness, there's a chance you may have more infections besides Lyme disease. ([6](#))



#5: Lyme Is Known as “the Great Imitator”

Over 150 possible symptoms are associated with Lyme disease. This is why it's called “the great imitator.” Since Lyme disease produces symptoms that mimic other conditions, patients often receive misdiagnoses. ([7](#))



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Top 4 Common Chronic Lyme Disease Symptoms

Here's the most common symptoms associated with Lyme disease:

#1: Chronic Fatigue

You may lack energy no matter how much sleep you get or your level of self-care. The source of this debilitating fatigue could be undetected Lyme disease. When infected with Lyme, your immune system struggles to constantly fight off the infection and inflammation. The end result is chronic fatigue. ([8](#))

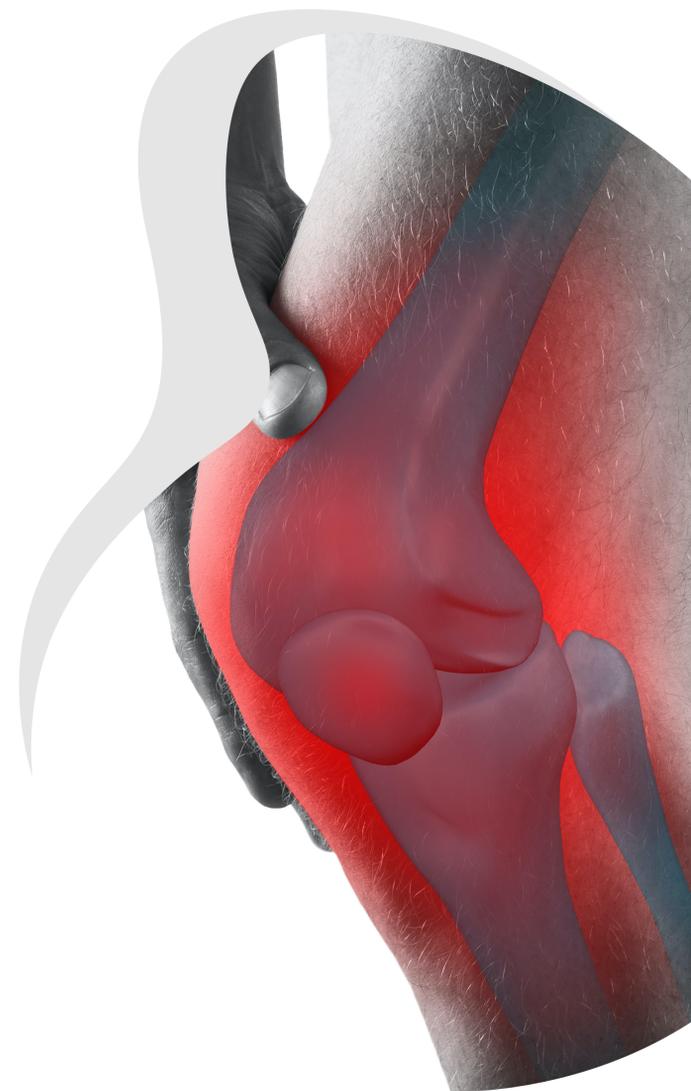


#2: Autoimmune Diseases

Lyme disease may trick your immune system to attack your own tissues. This can escalate to rheumatoid arthritis and multiple sclerosis. If you have autoimmune issues, Lyme may be the root cause. ([9](#), [10](#))

#3: Joint Pain

Lyme disease and its coinfections damage your joints and can cause joint pain. Since this infection steals nutrients from your joints and triggers inflammation, it can make once healthy joints stiff and crippled. This symptom may appear as arthritis. ([11](#), [12](#))



#4: Brain Fog and Cognitive Issues

Lyme bacteria can cross your blood-brain barrier and cause dysfunction in brain cells. With Lyme disease, you may experience brain fog, memory issues, and overall poor cognitive performance from the buildup of toxins. ([13](#))

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Top 7 Sneaky Lyme Disease Symptoms

As “the great imitator,” Lyme produces many symptoms not typically associated with it. Check out the list below and see if Lyme is responsible for some of your unusual symptoms.

#1: Skin Conditions

Lyme has been linked to skin conditions like morphea (scleroderma), lichen sclerosus, and more recently B-cell lymphoma. If you are experiencing these uncommon skin diseases, the root cause may actually be Lyme disease. ([14](#))

#2: Heart Issues

Lyme disease may attack your heart muscle and interfere with electrical communication between your heart chambers. You may experience heart palpitations, chest pain, and shortness of breath as a byproduct. ([15](#))



#3: Neurological Disorders

Lyme bacteria can cross your blood-brain barrier and disrupt your neurotransmitters, or nerve messengers. This brain cell dysfunction can lead to anxiety and depression. It can also interfere with your dopamine production, as well as manifest like Parkinson's disease or other neurological disorders. ([16](#), [17](#), [18](#))



#4: Digestive and Abdominal Pain

Lyme disease can also disrupt your gut microbiome and result in nausea, vomiting, acid reflux, abdominal pain, and chronic loose stools. In particular, Lyme can cause liver pain and dysfunction. In one study, 40% of Lyme-infected patients had at least one abnormality in liver function. ([19](#), [20](#))

#5: Paralysis

Another unusual symptom you may not relate back to Lyme disease is paralysis. Typically, this symptom appears on the face and would receive a Bell's palsy diagnosis. This occurs in an estimated 11% of Lyme-infected people. ([21](#), [22](#))

#6: Meat Allergies

After contracting Lyme, you may develop a meat allergy — another strange symptom. While research is still being conducted on how this allergy occurs, current studies suspect the sudden rise of inflammatory chemicals released from the infection. ([23](#))



#7: Hair Loss

The final sneaky Lyme symptom is unexplained hair loss. Some people infected by Lyme can develop alopecia, but this, fortunately, can be corrected through proper Lyme treatment. ([24](#))



Get to the Root Cause

Are you experiencing any of these symptoms? Lyme disease can infiltrate your body and dismantle your daily function. You could experience varying symptoms like exhaustion, cognitive issues, and even something as bizarre as meat allergies.

So how do you fight back against Lyme and its debilitating effects? The solution is getting to the root cause of Lyme instead of treating each individual symptom. Through supporting your immune system and your body's natural drainage, you can flush Lyme bacteria from your system more successfully.



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Sources:

1. Raghupathi, Wullianallur, and Viju Raghupathi. "An Empirical Study of Chronic Diseases in the United States: A Visual Analytics Approach." *International Journal of Environmental Research and Public Health*, vol. 15, no. 3, pp. 431. Mar 2018.
2. "How Many People Get Lyme Disease?" Cdc.gov. Dec 2018.
3. Davidson, Jay. *How to Fix Lyme Disease: 3 Secrets to Improve Any Lyme Disease Treatment*. 2017.
4. Beil, Laura. "New Approaches May Help Solve the Lyme Disease Diagnosis Dilemma." *Sciencenews.org*. June 2019.
5. "Diagnosis." Lyme and Tick-Borne Diseases Research Center, Columbia University Irving Medical Center. Columbia-lyme.org.
6. Johnson, Lorraine et al. "Severity of Chronic Lyme Disease Compared to Other Chronic Conditions: A Quality of Life Survey." *PeerJ*. Mar 2017.
7. Bamm, Vladimir V et al. "Lyme Disease Frontiers: Reconciling Borrelia Biology and Clinical Conundrums." *Pathogens (Basel, Switzerland)*, vol. 8, no. 4, pp. 299. Dec 2019.
8. Strle, Klemen et al. "T-Helper 17 Cell Cytokine Responses in Lyme Disease Correlate with Borrelia Burgdorferi Antibodies During Early Infection and with Autoantibodies Late in the Illness in Patients With Antibiotic-Refractory Lyme Arthritis." *Clinical Infectious Diseases*, vol. 64, no. 7, pp. 930-938. April 2017.
9. Raveche, Elizabeth et al. "Evidence of Borrelia Autoimmunity-Induced Component of Lyme Carditis and Arthritis." *Journal of Clinical Microbiology*, vol. 43, no. 2, pp. 850-856. Feb 2005.
10. Martin, Roland et al. "Molecular Mimicry and Antigen-Specific T Cell Responses in Multiple Sclerosis and Chronic CNS Lyme Disease." *Journal of Autoimmunity*, vol. 16, no. 3, pp. 187-192. May 2001.
11. Müller, Kurt. "Damage of Collagen and Elastic Fibres by Borrelia Burgdorferi — Known and New Clinical and Histopathological Aspects." *The Open Neurology Journal*, vol. 6, pp. 179-186. Dec 2012.
12. Zhao, Hua et al. "Borrelia Burgdorferi Basic Membrane Protein A Could Induce Chemokine Production in Murine Microglia Cell Line BV2." *Microbial Pathogenesis*, vol. 111, pp. 174-181. Oct 2017.
13. Grab, Dennis et al. "Borrelia Burgdorferi, Host-Derived Proteases, and the Blood-Brain Barrier." *Infection and Immunity*, vol. 73, no. 2, pp. 1014-1022. Feb 2005.
14. Vasudevan, Biju, and Manas Chatterjee. "Lyme Borreliosis and Skin." *Indian Journal of Dermatology*, vol. 58, no. 3, pp. 167-174. May-June 2013.
15. Scheffold, Norbert et al. "Lyme Carditis—Diagnosis, Treatment, and Prognosis." *Deutsches Arzteblatt International*, vol. 112, no. 12, pp. 202-208. Mar 2015.
16. Miklossy, Judith et al. "Persisting Atypical and Cystic Forms of Borrelia Burgdorferi and Local Inflammation in Lyme Neuroborreliosis." *Journal of Neuroinflammation*, vol. 5, no. 40. Sept 2008.
17. Blum, Kenneth et al. "Lyme and Dopaminergic Function: Hypothesizing Reduced Reward Deficiency Symptomatology by Regulating Dopamine Transmission." *Journal of Systems and Integrative Neuroscience*, vol. 3, no. 3. May 2017.
18. MacDonald, Alan. "Plaques of Alzheimer's Disease Originate from Cysts of Borrelia Burgdorferi, the Lyme Disease Spirochete." *Medical Hypotheses*, vol. 67, no. 3, pp. 592-600. May 2006.
19. Ali Zaidi, Syed and Carol Singer. "Gastrointestinal and Hepatic Manifestations of Tickborne Diseases in the United States." *Clinical Infectious Diseases*, vol. 34, no. 9, pp. 1206-1212. May 2002.
20. Horowitz, HW. "Liver Function in Early Lyme Disease." *Hepatology*, vol. 23, no. 6, pp. 1412-1417. June 1996.
21. Clark, Jane et al. "Facial Paralysis in Lyme Disease." *Laryngoscope*, vol. 95, no. 11. Nov 1985.
22. Cooper, Lilli et al. "Lyme Disease and Bell's Palsy: An Epidemiological Study of Diagnosis and Risk in England." *British Journal of General Practice*, vol. 67, no. 658. May 2017.
23. Commins, Scott and Thomas Platts-Mills. "Tick Bites and Red Meat Allergy." *Current Opinion in Allergy and Clinical Immunology*, vol. 13, no. 4, pp. 354-359. Aug 2013.
24. Cipperman, J. "Diffuse reversible alopecia in patients with Lyme meningitis and tick-borne encephalitis." *Wien Klin Wochenschr*, vol. 111, no. 22-23, pp. 976-977. Dec 1990.