

Lumbrokinase for Lyme?

Analysis by [Dr. Joseph Mercola](#)

✓ Fact Checked

September 07, 2023

STORY AT-A-GLANCE

- › Lumbrokinase, an enzyme sourced from earthworms, while best known for its role in helping combat blood clots, has also garnered praise for its usefulness in breaking down the biofilms associated with Lyme disease
- › At least 300,000 Americans are diagnosed annually with Lyme disease, a bacterial infection spread by ticks as small as a poppy seed
- › Treating Lyme disease is complicated by factors such as coinfections, nutrient deficiencies and toxin overload, as well as the reality many of its symptoms mimic chronic fatigue syndrome and fibromyalgia, among other illnesses
- › While conventional medicine most often turns to long-term antibiotic use, I encourage you to investigate the many natural solutions available, including lumbrokinase
- › If you are not finding the help you need and your condition is worsening, you may want to consider adopting the treatment protocol recommended by Dr. Dietrich Klinghardt, one of the leading authorities on Lyme disease

Editor's Note: This article is a reprint. It was originally published June 25, 2018.

Lyme disease is no respecter of persons and one bite from a deer tick may be the only thing separating you from this devastating illness. Canadian rockstar Avril Lavigne has been struggling with the illness for four years. When her battle with Lyme became public in 2015, Lavigne told People magazine, "I felt like I couldn't breathe, I couldn't talk and I couldn't move. I thought I was dying."¹ She was bedridden for five months.

If you or someone close to you struggles with Lyme disease, you may have heard of lumbrokinase, an enzyme sourced from earthworms. Best known for its role in helping combat blood clots, lumbrokinase has also been used successfully to break down biofilms associated with Lyme disease. Here's what you need to know about identifying and treating this life-threatening, tick-based disease.

The Basics About Lyme Disease

Lyme disease is primarily transmitted by deer ticks and black-legged ticks found in grassy and wooded areas throughout the U.S. and at least 60 other countries.² The U.S. Centers for Disease Control and Prevention estimate 300,000 Americans are diagnosed with Lyme disease annually.³

The people at most risk of picking up a Lyme-infected tick include children and older adults, as well as firefighters, park rangers and others who spend time in areas known to increase their exposure to ticks. Beyond being a bacterial infection, Lyme disease can often be complicated by factors such as coinfections, nutrient deficiencies and toxin overload. LymeDisease.org provides some additional facts about the disease:⁴

- Lyme disease is caused by a spirochete — a corkscrew-shaped bacterium called *Borrelia burgdorferi*
- Lyme, which is known as "The Great Imitator," is very challenging to diagnose because its symptoms mimic conditions such as chronic fatigue syndrome, depression, fibromyalgia and multiple sclerosis
- Lyme disease can affect any organ of your body, including your brain and nervous system, muscles and joints, and even your heart
- Most people contract Lyme from the bite of an immature tick — and the bite is often so tiny and painless, you may not realize you've been bitten
- An undisturbed tick can feed for several days and the longer it is attached to your body, the greater the chances it will transmit Lyme and other pathogens into your bloodstream

Earthworms and Lyme Disease: A Healing Combination?

Lumbrokinase, a group of six proteolytic (protein digesting) enzymes derived from earthworms, can be successfully paired with antimicrobial remedies for the treatment of Lyme disease. Lumbrokinase is believed to effectively penetrate through thick clumps of gut bacteria known as biofilms, which are one of several factors involved with Lyme. (Check out the video above for more information on how biofilms form.)

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, you may be taking. The fact lumbrokinase is helpful in breaking down fibrinogen is an important aspect of Lyme treatment because the pathogenic bacteria use fibrinogen, which they convert to fibrin, to strengthen their network.⁵

Researchers studying the effects of lumbrokinase,⁶ say earthworms – known as Dilong (earth dragon) – have been used for thousands of years within traditional medicine in Asian countries such as China, Japan and Korea.

In these countries, 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. The study authors stated:⁷

"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 secrete an enzyme that plays a role in dissolving fibrin."

How Does Lumbrokinase Work?

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."⁸

Furthermore, Lyme expert Dr. Marty Ross, integrative medicine specialist and founder of The Healing Arts Partnership in Seattle, notes lumbrokinase is also able to:⁹

- Boost blood flow to your tissues by decreasing hypercoagulation
- Decrease muscle cramps and pain
- Promote the delivery of supplements and/or prescription medication deep into your tissues

Ross and Texas naturopath Dr. Gary Sconyers suggest lumbrokinase can be particularly useful for patients whose Lyme-related symptoms did not show improvement on antibiotics or herbal antimicrobials alone.¹⁰ About his treatment protocol Ross stated:¹¹

"I lean more in the direction of antibiotics for Lyme disease because they have more of a proven track record than herbs, but some 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."

While I do not agree with Ross' belief in long-term antibiotic use (more on that topic later), I do appreciate his interest in herbal remedies, including the use of lumbrokinase. About his experience in administering lumbrokinase, Sconyers said:¹²

"[I use] lumbrokinase for all my Lyme patients. I give patients up to 10 lumbrokinase capsules a day, in divided doses, three times a day. I also use nattokinase, in amounts ranging from 250 to 500 mg a day. In our most difficult Lyme cases, lumbrokinase seems to work the best.

I had a [patient] ... who'd had Lyme disease for 20 years. She had tried everything, and suffered from head to toe joint pain, brain fog and gut issues. She had gotten to the point where she'd given up. Now she is doing better than she has in decades, [thanks to lumbrokinase]."

If you and your doctor determine lumbrokinase is right for you, be sure to buy a high-quality, reputable brand. Lumbrokinase is a costly supplement and both its enzymatic strength and price can vary widely from brand to 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.¹³

What You Should Know About Treating Lyme Disease

Beyond the characteristic bullseye rash, Lyme symptoms are often flu-like in nature: body aches, fatigue, fever, headaches, and stiff or swollen joints. As I have often mentioned, early treatment is vital when it comes to Lyme disease mainly because it may help you avoid future complications such as chronic joint inflammation (Lyme arthritis), cognitive defects, heart rhythm irregularities and neurological symptoms.

Conventional Lyme treatment, which generally involves antibiotics, is often unsuccessful. Sadly, in spite of their doctor's best intentions in prescribing antibiotics, many patients continue to experience troubling symptoms that sometimes deteriorate further.

On occasion, Lyme sufferers experience a loss of motor coordination, meningitis, severe muscle spasms and even intermittent paralysis. I do not recommend long-term antibiotic use for Lyme due to the detrimental effects this type of treatment will have on your gut microbiome.

The use of antibiotics also increases your risk of fungal or yeast infections, two issues likely to be in play if you suffer from Lyme disease. Moreover, antibiotics tax your natural immune function and increase your risk of antibiotic-resistant infections. Rather than choose antibiotic therapy as your primary means of treating Lyme, you'd be wise to investigate the many natural alternatives first, or, at least use the natural remedies in concert with any recommended pharmaceutical medications.

Natural Strategies You Can Use to Fight Lyme Disease

Below is a listing of some of the nutritional supplements you may find useful in addressing Lyme:

Andrographis and artemisinin – Herbs that treat the common co-infection, Babesia

Astaxanthin – A powerful antioxidant that neutralizes toxins and relieves joint pain

Cilantro – This common herb is a natural chelator for heavy metals

CoQ10 – A potent antioxidant that alleviates muscle pain, boosts cardiac health and reduces brain fog

Curcumin – The active ingredient in the spice turmeric, which eliminates neurological toxins and helps reduce brain swelling

GABA and melatonin – Two great sleep supplements that will help address insomnia, a common complaint for people with Lyme disease

Grapefruit seed extract – This powerful botanical, which is known to kill bacteria, Candida and parasites, may help treat Borrelia – the bacteria that causes Lyme

disease – in cyst form

Krill oil – This omega-3 powerhouse helps reduce inflammation and relieve Lyme symptoms

Probiotics – Promotes healthy gut flora and boosts your immunity

Quercetin – An antioxidant known to reduce histamine, which is usually high in Lyme patients

Resveratrol – This antioxidant helps with detoxification and may treat the common coinfection, Bartonella

Serrapeptase – Helps dissolve biofilms

Transfer factors – Help boost immune function; Ross says he uses transfer factors when a patient is not getting better or to prevent a relapse associated with Lyme or two potential co-infections, Babesia and Bartonella¹⁴

Whey protein concentrate – May be useful as a dietary supplement

Klinghardt Academy's Lyme Treatment Protocol

My mentor Dr. Dietrich Klinghardt, founder of the Klinghardt Academy in Woodinville, Washington, is one of the leading authorities on the treatment of Lyme disease. Having been used successfully to restore health to hundreds of patients, his [Lyme disease treatment protocol](#) is most definitely something you should check out. Below is a high-level overview of Klinghardt's major recommendations:¹⁵

1. Reducing your body's toxic burden and unloading your system

- Decrease your exposure to electromagnetic fields (EMF) by turning off all fuses at night and limiting your exposure to wireless technologies as much as you can

- Use turquoise light/photon wave to increase your melatonin and nonREM Delta sleep
- Choose nontoxic, hypoallergenic bedding material and avoid flame retardants/polybrominated diphenyl ethers (PBDEs)
- Avoid light and noise pollution at night
- Detoxify your system and remove biofilms and heavy metals

2. Improving your body's disturbed physiology

- Use Autonomic Response Testing (ART), the most advanced and scientifically validated method of muscle testing, or lab work to identify and correct deficiencies in your electrolytes, hormones and minerals
- Complete and apply the results of genetic testing
- Overhaul your diet to eliminate trigger foods and focus on eating whole, organic foods as much as possible
- Supplement magnesium via transdermal patches or injections for maximum effectiveness
- Balance your copper, zinc and iron levels

3. Decreasing your pathogen count

- Use ozonated plant oils (rizols) to treat: anaerobes, mold and parasites; RNA and DNA viruses; Babesia; Bartonella; and spirochetes

4. Immunomodulation

- Treat immune responses to mold
- Apply autohemotherapy or auto-urine therapy
- Begin using Buhner herbs

- Introduce adjunctive physics-based immune modulation tools, also known as BioTools
- Evaluate the usefulness of antibiotic, antifungal, antiparasitic and antiviral medications

Make Lyme Prevention a Top Priority

Lyme disease is a complex, controversial and extremely challenging condition to treat, making prevention your safest and best option. Your first line of defense is to take precautions to avoid the ticks that transmit the disease. After all, no tick bites, no Lyme disease. Because the ticks can be as small as poppy seeds, you must be vigilant to safeguard yourself, your loved ones and your pets from ticks.

Whatever you do, do not spray your body or your clothes with insect repellent containing N,N-Diethyl-m-toluamide, also known as DEET. Because DEET is a known neurotoxin,¹⁶ I recommend you avoid all DEET-containing products. Below are some healthy tips to help you best protect yourself from tick bites if you live in or must travel through a high-risk area:^{17,18}

Avoid tick-infested areas such as densely wooded areas and always walk in the middle of trails so as to avoid brushing against tall grasses and other plant material that may house ticks

Check your body and hair for ticks immediately upon returning from a high-risk area and continue to check your body, hair and bedding daily for several days afterward

Consider wearing long sleeves and pants, as well as closed shoes and a hat, when venturing out to wooded areas

Your pet can become a host for ticks and may also become infected with Lyme disease, so be sure to check their fur and collars

If you discover a tick has latched onto you, it's very important to remove it properly and, if possible, to keep it alive; for detailed instructions, please visit the lymedisease.org tick removal page

Once removed, make sure you save the tick so it can be tested for the presence of pathogenic organisms. Put the tick into a container and label it with your name, date, site of bite and how long the tick was attached to your skin. Share this information with your local extension office or other authority

Sources and References

- ¹ People April 1, 2015
- ^{2, 4} LymeDisease.org, All About Lyme Disease
- ³ U.S. Centers for Disease Control and Prevention September 30, 2015
- ⁵ Microbiology (Reading). 2009 Jan; 155(Pt 1): 238–248
- ^{6, 7} Evidence-Based Complementary and Alternative Medicine December 12, 2013; 2013: 783971
- ^{8, 13} Lyme People January 22, 2013
- ⁹ Treat Lyme September 30, 2014
- ^{10, 11, 12} Tick Talk Ireland, Lyme Disease Awareness in Ireland – Alternative Treatments
- ¹⁴ Treat Lyme April 2, 2018
- ¹⁵ Klinghardt Academy, Biological Treatment of Lyme Disease
- ¹⁶ Plos One 2014; 9(8): e103713
- ¹⁷ New York State Department of Health, Be Tick Free – A Guide for Preventing Lyme Disease
- ¹⁸ LymeDisease.org, Personal Protection