

Lumbrokinase for Heart Health?

Analysis by [Dr. Joseph Mercola](#)

✓ Fact Checked

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STORY AT-A-GLANCE

- › Lumbrokinase, a complex fibrinolytic enzyme extracted from earthworms, contains a bioactive protein that helps prevent heart-related issues like thrombosis, stroke and heart disease
- › As an ancient Asian medicinal, lumbrokinase applications began with concoctions involving fried earthworms and herbs, followed by dried earthworm powders, then unrefined earthworm extracts
- › As early as 1573, earthworms, referred to by Chinese physicians as “earth dragons,” were used for beneficial properties that could “invigorate blood, resolve stasis and unblock the body's meridians and channels”
- › Today, both patients and practitioners credit lumbrokinase with successfully treating as well as preventing blood- and heart-related conditions, but it’s also tapped for other health-beneficial applications, as well
- › Lumbrokinase has been identified as an important factor in the treatment of Lyme disease, as experts believe it can penetrate thick clumps of gut bacteria known as biofilms

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Although it's not a well-known substance, lumbrokinase is recognized by health experts as an extraordinarily health-beneficial enzyme. It boosts circulatory health by breaking

down fibrinogen, described by one study¹ as having the ability to reduce blood viscosity, making it a "critical factor in clot formation."

Fibrinogen, perhaps another unfamiliar term, is a fibrous protein essential for hemostasis – stopping bleeding. While a "mechanically stable" clot is necessary to prevent blood loss and promote wound healing, and your fibrinolytic system can dissolve fibrin or fibrous clots when it's in good working order, lumbrokinase is classified as a fibrinolytic enzyme.²

The source of lumbrokinase makes it even more interesting: The complex fibrinolytic enzyme is extracted from earthworms, such as the *Lumbricus rubellus* found in Indonesia, which contains a bioactive protein fraction known as DLBS1033, according to scientists in one study.³ They described the results of using lumbrokinase in 10 patients with stable angina pectoris and concluded:

"Based on antithrombotic and fibrinolytic activity, lumbrokinase might (be) used as (a) secondary prevention after acute thrombosis, such as myocard[ial] infarct[ion] [heart attack] and stroke ...

This study showed that 70% of total sample(s) receiving lumbrokinase had a significant decrease in summed stress score of perfusion (the pumping of a fluid through an organ or tissue⁴) imaging and better perfusion in viable myocardium after 30 days of lumbrokinase treatment."⁵

Another study describes how lumbrokinase got its name. A Japanese doctor named H. Mihara and his colleagues successfully extracted a group of fibrinolytic enzymes from the *Lumbricus rubellus* earthworm species in 1991, and the enzymes were collectively named lumbrokinase after the genus name *Lumbricus*.⁶

As a supplement, lumbrokinase may be identified as earthworm fibrinolytic enzymes (e-PPA), or earthworm powder enzymes (EPE). As obscure as Western patients may find lumbrokinase to be both in availability and viability, a PubMed search in February 2018 reportedly⁷ returned 65 results, with available information dating back to 1991, while a

similar search of leading Chinese digital periodicals, specifically CNKI,⁸ produced 650 results.

The History of Therapeutic Earthworms

The circuitous path lumbrokinase has traveled has also been a long one. Traditional Asian applications began with fried earthworms and herbs, followed by dried earthworm powders, then unrefined earthworm extracts. Today's lumbrokinase is compared with other therapeutic ingredients, such as omega-3 from krill oil, polyphenols from [green tea](#) and curcumin from turmeric root.⁹ Institute for Progressive Medicine states:

"Generally, we are better off with blood that clots less easily ... Individuals at high risk of forming clots, such as those with atrial fibrillation, are often treated with blood thinners like aspirin or stronger agents like Coumadin ... All of these agents, however, present a significant risk of bleeding, and may themselves cause brain hemorrhage, urinary or gastrointestinal bleeding.

*Lumbrokinase ... reduces coagulation by lowering blood viscosity, lowering the activity of clotting factors including fibrinogen, and degrading fibrin, a critical factor in clot formation. It has a stronger effect on reducing blood viscosity than other enzyme preparations."*¹⁰

The discovery of lumbrokinase in earthworms came about due to a purposeful analysis of the rationales behind traditional medical practices in Asian cultures. Earthworms have been used medicinally for many centuries in Japan, Korea and China, but it continues today in therapies that are considered both safe and effective.

An ancient Chinese medical publication called Ben Cao Gang Mu, translated as "Compendium of Chinese Botanical and Animal Products,"¹¹ included in the renowned Compendium of Materia Medica (circa 1573 to 1593¹²), describes earthworms as "earth dragons," with beneficial properties that "invigorate blood, resolve stasis and unblock the body's meridians and channels."¹³

Such ancient assertions for many healing compounds from earthworms has resulted in the slimy invertebrates being included in traditional Asian herbal formulas to remedy ischemic conditions and blood clots that break loose and threaten vital organs.

Present-Day Use of Lumbrokinase in Asian Medicinal Practices

The fact that lumbrokinase remains relatively unknown by most Western health practitioners and consumers is likely due to three main reasons:¹⁴

- Most of the clinical data on lumbrokinase is in Chinese and either unavailable or not understood by non-Chinese clinicians or researchers
- Pharmaceutical-grade lumbrokinase, primarily from China, is both expensive and hard to come by, so very few companies either sell or promote its clinical benefits
- Third, the leading pharmaceutical companies ("with their massive influence on the media"¹⁵) haven't yet figured out a way to profit from it

Patients with a wide disparity of dysfunctions and disorders, such as a bruised and swollen ankle, angina, chronic sinusitis or bronchitis, an enlarged prostate, mild strokes and infectious diseases, all have something in common: Such cases have found fibrinolytic enzymes such as lumbrokinase to be advantageous.^{16,17}

In fact, between two other substances with known fibrinolytic or proteolytic effects, namely nattokinase, which comes from fermented soy products; and serrapeptidase, made by silk worms and exerting anti-inflammatory activity (which could even replace **nonsteroidal anti-inflammatory drugs** (NSAID) like Ibuprofen and Indomethacin, lumbrokinase is the most potent fibrinolytic enzyme.¹⁸

In a study comparing lumbrokinase to Serrapeptidase, aka serrapeptase, and nattokinase on a milligram to milligram basis, researchers found that lumbrokinase is about 300 times (1/294) stronger than serrapeptase and 30 times (1/36) times stronger than nattokinase.^{19,20,21}

Uses for Lumbrokinase for Heart and Blood

People who credit lumbrokinase with aspects of health do so because of its ability to treat and possibly prevent blood- and heart-related conditions, including stroke, angina, diabetes, heart disease and others.^{22,23,24,25,26} Below are examples of studies that are connected to the use of lumbrokinase and its potential benefits:

- **Stroke** — Researchers in a 2013 study found a decreased risk of stroke, particularly ischemic stroke, which occurs when an artery in the brain becomes blocked. When study subjects given either standard stroke treatments or lumbrokinase capsules for a year were compared, the lumbrokinase groups had fewer stroke incidents.²⁷

A European study in 2008 found that lumbrokinase may combat another type of stroke known as cerebral ischemia, caused by insufficient blood flow to the brain and resulting stroke.²⁸ An earlier study showed that lumbrokinase may also help treat strokes caused by cerebral infarction, or blood clot in the brain, in part by decreasing levels of fibrinogen.²⁹

- **Diabetes** — Diabetes Research and Clinical Practice published a 2013 animal study showing that lumbrokinase may help fight diabetic nephropathy, a kidney condition exacerbated by poor control over diabetes and high blood pressure conditions. The mechanism reportedly involved specific enzymes thought to play a role in kidney damage.³⁰
- **Heart health** — An animal study published in the Chinese journal *Acta Pharmaceutica Sinica*³¹ noted that lumbrokinase may shield your heart health against myocardial ischemia.

As for angina, one clinical study involved 10 patients with coronary artery disease and "stable angina." Each was given a one-month regimen of lumbrokinase with their standard medical therapy. Myocardial perfusion imaging (MPI) was performed before and after the treatment period, after which six of the 10 angina patients showed improvement, as did an average of 38% of those with ischemia, both assessed by validated indicators.³²

Multipurpose Lumbrokinase Tapped as a Remedy for Lyme Disease

As previously noted, the possibilities for lumbrokinase are far-reaching, both as an enzyme with direct and indirect fibrinolytic effects, and as an anticoagulant due to its ability to inhibit platelet functions. Further, it may "minimize angina attack frequency (and) the need for nitroglycerine."³³

Potential applications include circulatory conditions, deep venous thrombosis, essential hypertension, vascular dementia and the prevention or treatment of cancer-associated thromboembolism. Evidence also suggests that while animal models and in vitro research have shown the compound inhibited stomach cancer growth and liver cancer metastasis, similar lumbrokinase successes may be found in human studies.³⁴

Other noteworthy areas of lumbrokinase research indicate that it may improve diabetic nephropathy and diabetic neuropathy, prevent the damage to heart cells from secondhand smoke and play a role in promoting bone repair and regeneration.³⁵

While prevention is now recognized as the best way to circumvent the often debilitating problems associated with Lyme disease (a bacterial infection caused by spirochete, which are corkscrew-shaped bacterium spread by ticks), those who have it have found the symptoms to mimic such maladies as chronic fatigue syndrome, multiple sclerosis, depression and fibromyalgia.

However, lumbrokinase has been identified as a valuable treatment. Experts believe it can penetrate thick clumps of gut bacteria known as biofilms, one of several challenging factors involved with Lyme, as the bacteria are able to hide, feed and replicate unstopped by antimicrobial medications.³⁶

That lumbrokinase is helpful in breaking down fibrinogen is an important aspect of Lyme treatment because the pathogenic bacteria use fibrinogen, convert it to fibrin and thereby strengthen their network.³⁷

Supplement, Pharmaceutical and Traditional Chinese Medicine

Intrinsic in the treatment is the fact that lumbrokinase can help break down fibrinogen. It's interesting to note that dry earthworm powder taken as an oral supplement has been clinically tested and shown to support healthy blood circulation. A number of products containing it, mostly sold in Asian countries, are taken as nutritional supplements, pharmaceutical products and some as Traditional Chinese Medicine.

Whether you're thinking about exploring lumbrokinase for your heart or in the treatment of Lyme disease, make sure the brand you choose is high-quality and from a reputable source. Keep in mind that lumbrokinase supplements can be expensive and vary in enzymatic strength, which is one reason a doctor's involvement is advised.

Taking lumbrokinase with a medication that thins your blood can be risky due to interference with the normal clotting process, and lead to bleeding. Pregnant women, nursing mothers and children also shouldn't take it.

While there are concerns that lumbrokinase use may trigger such side effects as nausea, bloating, diarrhea, skin rash and allergic reactions, Chinese studies noted that such symptoms affected only .07% to 3% of the individuals taking it.³⁸ Further:³⁹

"To date, virtually all of the researchers who have ever studied or published on lumbrokinase concluded that it is a well-tolerated and very safe fibrinolytic enzyme preparation."

Sources and References

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