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Even a Single Dose of Nattokinase Thins Blood and Breaks Down Clots

Analysis by Dr. Joseph Mercola | March 11, 2026

STORY AT-A-GLANCE

- A single 2,000-FU capsule of nattokinase shifted multiple clotting markers within hours, showing your blood's clotting balance responds quickly to targeted enzymes
- Clot breakdown markers increased while certain clotting factors decreased, indicating a coordinated move toward a less clot-prone state without pushing lab values outside normal ranges
- Nattokinase works in several ways at once — it cuts apart fibrin directly, boosts your body's main clot-dissolving enzyme and strengthens natural anti-clot defenses
- Repeated clot formation on damaged artery walls contributes to plaque buildup over time, so improving clot breakdown supports healthier blood flow and lowers the risk of blockage
- Long-term clot control depends on more than enzymes alone — reducing seed oils, improving insulin sensitivity, restoring cellular energy and healing your gut address the root causes that drive abnormal clot formation

A single capsule of nattokinase shifted multiple clotting markers within hours — not over weeks, not after repeated dosing, but the same day it was swallowed. That finding comes from a study published in Scientific Reports, which used a double-blind, placebo-controlled design.[1] Participants received either nattokinase or a placebo without

knowing which one they took. Clot breakdown markers rose sharply. Clotting factor activity dropped. The body's own anticoagulant defenses strengthened. All from one dose.

What makes this more striking: these weren't cardiac patients or people on blood thinners. They were healthy young men with no vascular history — and their clotting biology still shifted measurably within hours. The fact that their clot-related biomarkers responded this clearly to a single nutritional compound tells you something important: clotting biology is far more responsive to what you put in your body than most people realize.

No adverse effects were reported, and every lab value stayed within normal clinical ranges. The biological signal was real but didn't push anyone into an abnormal clotting state. When measurable shifts occur across several clotting pathways after a single dose, the next logical step is to understand exactly what the researchers measured, how they measured it, and why those changes matter for your long-term vascular risk.

Nattokinase Shifts Clotting Markers Within Hours of a Single Dose

The study, which involved 12 healthy young Japanese men, investigated whether one 2,000 FU (fibrinolytic units) capsule of nattokinase could change blood clotting and clot breakdown markers in humans.[2] Blood samples were collected at baseline and then two, four, six, and eight hours after ingestion to track short-term changes.

None of the men had taken nattokinase supplements before or eaten natto — the traditional Japanese fermented soybean food that naturally contains nattokinase — for at least two months prior to the study. While the sample was small, the consistency of changes across multiple markers in a controlled design makes the findings worth taking seriously.

- **Clot breakdown markers rose sharply within hours —** D-dimer levels rose by about 44% at six hours and 38% at eight hours after the dose, compared to where they started. D-dimer is a small protein fragment that appears in your blood when your body breaks down a blood clot. When D-dimer increases, it shows that clot breakdown is actively taking place.

  At the same time, other clot breakdown markers — called fibrin and fibrinogen degradation products — increased by about 21% at four hours. These substances form when your body cuts apart fibrin, the tough protein strands that hold a clot together. These markers reflect active breakdown of fibrin, the protein framework that stabilizes clots. When these numbers rise after a supplement, it signals that clot-dissolving pathways turned on measurably.

- **Blood became slightly less likely to clot —** Levels of Factor VIII — a protein that helps your blood form firm clots — dropped by about 7% at four and six hours. When Factor VIII falls, your blood shifts toward forming fewer or weaker clots. A standard lab measure of clotting speed increased at two and four hours, meaning the blood took measurably longer to form a clot in testing.

- **The natural "anti-clot" system strengthened —** Antithrombin levels rose at two and four hours. Antithrombin acts like a brake pedal in your clotting system. It slows down powerful clotting enzymes such as thrombin. When antithrombin increases, your internal braking system becomes stronger.

- **The enzyme cuts apart the structure of a clot —** Nattokinase belongs to a class of enzymes called serine proteases — molecular scissors that snip apart specific proteins. In this case, the target is fibrin. In lab testing, it broke down cross-linked fibrin — the tough protein strands that hold a clot together — six times more efficiently than plasmin, your body's main clot-dissolving enzyme. When fibrin gets cut, the clot's framework weakens.

- **Nattokinase works through several clot-control systems at the same time —** Many clot-dissolving drugs focus on a single target. Nattokinase cuts apart fibrin directly, boosts plasmin — your body's main clot-dissolving enzyme — lowers substances that block clot breakdown, and raises natural anti-clot proteins like antithrombin, all within the same few hours. When all of those shifts happen together, your blood moves toward a less clot-prone state in a coordinated way.

Why Clot Breakdown Matters for Long-Term Artery Health

As explained in my interview with **Dr. Malcolm Kendrick**, a board-certified family physician and author of the book, "**The Clot Thickens: The Enduring Mystery of Heart Disease**," the thrombogenic hypothesis states that blood clotting is the basic underlying process behind heart disease.

- **Repeated clot formation drives plaque buildup in arteries —** When your artery lining, called the endothelium, becomes damaged or stripped away, your body forms a clot at that spot to patch the injury. Normally, that clot gets covered and repaired by endothelial repair cells that circulate in your bloodstream and rebuild the lining.

- **The problem begins when the clot doesn't fully clear —** Another clot forms in the same location. Over time, repeated cycles of damage and incomplete clot removal create a thickened area inside the artery wall, which becomes what doctors call atherosclerotic plaque.

- **This narrows the artery —** If a large clot then forms on top of that narrowed area, blood flow can suddenly stop, leading to a heart attack or stroke. By supporting clot breakdown and strengthening your natural anti-clot systems, nattokinase helps reduce the buildup of persistent fibrin that contributes to this cycle.

Use Enzymes Strategically While You Repair the Clotting Terrain

Fibrinolytic enzymes such as nattokinase and lumbrokinase directly break down fibrin, the protein framework that holds blood clots together. That makes them powerful tools. But blood clots don't form in isolation. They develop in a biological environment shaped by inflammation, metabolic dysfunction, and damaged blood vessel lining.

If you rely on enzymes alone without correcting that terrain, you treat a downstream effect instead of the cause. It's important to understand how to use these tools correctly while you rebuild the foundation that keeps your blood flowing smoothly.

1. **Use fibrinolytic enzymes correctly and with precision —** If you choose to use a fibrin-dissolving enzyme, timing is non-negotiable. These enzymes need to be taken on an empty stomach, at least one hour before or two hours after meals. If you take them with food, they digest dietary protein instead of circulating in your bloodstream where they're needed.

   You can find nattokinase naturally in natto. However, it has a strong smell and sticky texture, so many people prefer capsules. In supplement form, nattokinase is labeled in fibrinolytic units, often 2,000 FU per capsule. If you require stronger fibrin breakdown, lumbrokinase is significantly more potent.

   It's about 300 times stronger than serrapeptase and nearly 30 times stronger than nattokinase. It comes from earthworms and is sold in capsule form. If you take any blood-thinning medication, consult your physician before adding nattokinase or lumbrokinase.

2. **Lower your inflammatory load at the source —** Excess linoleic acid (LA) from seed oils injures your endothelium, which regulates clot formation. If you eat restaurant foods, packaged snacks, nut butters, or meals cooked in seed oils, you increase oxidative stress inside that lining. Replace those fats with tallow, ghee, or grass fed butter.

   As inflammation drops, your vessels regain proper signaling and the trigger for repeated clot formation weakens. When oxidative damage to your vessel lining decreases, fewer repair-clots form in the first place — which means less fibrin for

nattokinase to clean up.

3. **Restore cellular energy so your vessels regulate clotting properly —** Mitochondrial dysfunction disrupts nitric oxide production, calcium balance, and vascular tone. When production of adenosine triphosphate (ATP) — your body's essential energy currency — falters, blood vessel control falters. Build cellular energy daily.

   Get consistent **sun exposure**, which triggers nitric oxide that helps dilate your blood vessels, lowering your blood pressure. Nitric oxide also protects your endothelium and increases mitochondrial melatonin to improve cellular energy production.

4. **Correct metabolic dysfunction and measure your HOMA-IR —** Insulin resistance thickens blood and increases clotting factor activity. Check fasting glucose and fasting insulin, then **calculate HOMA-IR** (Homeostatic Model Assessment for Insulin Resistance), a simple but powerful way to gauge how efficiently your body is responding to insulin. A score below 1.0 generally indicates healthy insulin sensitivity. A score above 1.0 suggests you may be moving toward insulin resistance.

   If that score is elevated, increase daily walking, add strength training, and move toward 250 grams of **healthy carbohydrates** once your gut tolerates them. Stable insulin signaling reduces the biochemical push toward excess clot formation.

5. **Heal your gut to reduce endotoxin-driven clotting signals —** **Endotoxins** from oxygen-tolerant bacteria enter your bloodstream when gut integrity breaks down. These toxins activate inflammatory pathways that promote clot formation. If you struggle with bloating, irregular stools, or food reactions, begin with easily digested carbohydrates such as whole fruit and white rice.

   Then, gradually add in root vegetables, non-starchy vegetables, starchy vegetables like squash or sweet potatoes, beans and legumes, and finally minimally processed whole grains — only if your gut can handle them.

Repairing your microbiome lowers systemic inflammation and reduces the upstream trigger for abnormal clotting. When you combine intelligent enzyme use with reduced inflammation, restored metabolism, and improved gut integrity, you change the environment that drives clot risk. Enzymes then serve as a targeted layer of support built on a stable, resilient foundation.

FAQs About Nattokinase for Blood Clot Support

Q: Can a single dose of nattokinase really affect my blood the same day?

A: Yes. In a double-blind, placebo-controlled study published in Scientific Reports, one 2,000-FU capsule shifted multiple clot-related markers within hours.[3] Clot breakdown markers increased, certain clotting factors decreased, and natural anti-clot defenses strengthened — all within the same day and without pushing lab values outside normal ranges.

Q: How does nattokinase actually break down clots?

A: Nattokinase works in more than one way. It directly cuts apart fibrin, the protein strands that hold a clot together. It also boosts plasmin, your body's main clot-dissolving enzyme, and reduces substances that block clot breakdown. At the same time, it increases natural anti-clot regulators such as antithrombin. This coordinated effect shifts your blood toward a less clot-prone state.

Q: Is nattokinase safe for healthy people?

A: In the study discussed, healthy young men experienced measurable changes in clotting markers after a single dose, and no adverse effects were reported. All lab values remained within normal clinical ranges. That means the biological effect was

clear, but it didn't create an abnormal bleeding state in the short-term.

Q: What's the difference between nattokinase and lumbrokinase?

A: Nattokinase comes from natto, a fermented soybean food. In supplement form, it's measured in fibrinolytic units, often 2,000 FU per capsule. Lumbrokinase, derived from earthworms, is much stronger — about 300 times stronger than serrapeptase and nearly 30 times stronger than nattokinase. For more aggressive fibrin breakdown, lumbrokinase is the more potent option.

Q: Is taking an enzyme enough to reduce clot risk?

A: No. Enzymes address fibrin directly, but clot formation is driven by inflammation, endothelial damage, insulin resistance, and gut-derived endotoxins. Lowering seed oil intake, restoring mitochondrial energy, improving insulin sensitivity, and repairing gut integrity address the root terrain. When those foundations are strong, fibrinolytic enzymes become a targeted support rather than a shortcut.

Sources and References

- [1, 2, 3] Scientific Reports June 25, 2015