MERCOLA
Take Control of Your Health

Omega-3s Linked to Increased Inflammation Markers

Analysis by Dr. Joseph Mercola | June 01, 2026

STORY AT-A-GLANCE

- Research shows omega-3s, including those from fish oil, actually increase key markers of chronic inflammation, contradicting their long-held reputation as anti-inflammatory nutrients
- People with poor diets and high intake of omega-6 fats like linoleic acid (LA) had the highest levels of low-grade immune stress, even when supplementing with omega-3s
- Higher omega-3 levels caused increases in inflammatory blood markers linked to heart disease and Type 2 diabetes
- Fish oil often turns rancid before you even take it, and once oxidized, it drives inflammation instead of reducing it — adding it to a poor diet only makes the problem worse
- Swapping out vegetable oils, focusing on animal-based whole foods, and switching to krill oil in moderation are more effective strategies to reduce inflammation at its root

You've likely been told that omega-3s are your go-to remedy for inflammation — that taking fish oil will protect your heart, sharpen your brain, and extend your life. But what if the story isn't that simple?

For years, the narrative around omega-3 fats has been built on the idea that they're anti-inflammatory by nature. They've been packaged into pills, added to processed foods, and promoted as one of the most important supplements you can take. Millions rely on them daily, believing they're supporting long-term health and disease prevention.

But something isn't adding up. Inflammation remains at the core of most chronic diseases, yet rates of those diseases keep climbing, even among those who supplement with omega-3s. Could the problem be the very thing you've been using as the solution?

A line of research is forcing a major re-evaluation. It challenges the idea that more omega-3 automatically equals better health. And it raises an uncomfortable but necessary question: Is your fish oil doing more harm than good? Let's dig into what the researchers discovered, and why it matters so much for your health.

Omega-3s and Omega-6s Both Linked to Higher Inflammation

A study published in the International Journal of Epidemiology looked at how omega-3 and omega-6 fats really affect inflammation in your body.[1] Instead of just asking people what they ate, the researchers used data from two large population groups — the UK Biobank and the Avon Longitudinal Study of Parents and Children — and a method called Mendelian randomization. This tool uses genetic data to figure out if something actually causes a health problem, or if it's just linked to it by chance.

- **Over 15,000 healthy people were analyzed, and the results were surprising —** Researchers focused on three key markers in the blood that show inflammation: C-reactive protein (CRP), interleukin-6 (IL-6), and glycoprotein acetyls (GlycA).

  While CRP is a general alarm bell for inflammation, GlycA gives a steadier view of low-grade inflammation that lasts over time. To their surprise, both omega-3 and omega-6 fats were linked to higher GlycA levels. That includes docosahexaenoic acid (DHA), an omega-3 found in fish oil, and **linoleic acid (LA)**, an omega-6 polyunsaturated fat found in vegetable oils. Both also raised CRP.

- **Higher omega-3 levels raised two major inflammation markers —** Using genetic data to filter out things like diet and lifestyle, the researchers found that higher omega-3 levels actually caused increases in both CRP and GlycA. This matters because both of these markers are connected to long-term health problems like

heart disease and Type 2 diabetes. The numbers were clear: total omega-3 fats led to a 0.09-point rise in CRP and a 0.12-point rise in GlycA — enough to raise a red flag.

- **It wasn't just the omega-6 to omega-3 ratio — each type of fat raised inflammation on its own —** For years, people thought the problem was an imbalanced ratio — too much omega-6 and not enough omega-3. But this study found that both fats, even on their own, caused a spike in GlycA. And people with higher omega-6 to omega-3 ratios were more likely to have higher levels of all three inflammatory markers.
- **Omega-6s were confirmed to be inflammatory, even after adjusting for other fats —** When the researchers factored in other fats like cholesterol, triglycerides, saturated fat, and monounsaturated fat, omega-6s still stood out as drivers of inflammation. Omega-3s didn't show a strong independent effect anymore, meaning their influence could depend on your overall diet. But omega-6s caused inflammation no matter what else was going on.

Omega-3 and Omega-6 Fats Go Through the Same Chemical Pathways in Your Body

Both fats are processed by your body using the same set of enzymes. Since they rely on the same machinery, they compete with each other. If your system is flooded with omega-6, it slows down your body's ability to process omega-3, and vice versa. Some of the byproducts made in this process fuel inflammation or increase blood clotting depending on how much of each fat is present.[2]

- **Your genetics shape how you respond to these fats —** The study also looked at specific genes that control how your body metabolizes fats. People with gene variants linked to DHA production had higher CRP levels, while those linked to LA metabolism had slightly lower CRP. This shows that your genetic makeup influences how these fats impact your body, but the picture is complicated, and other factors also play a role.

- **Neither omega-3 nor omega-6 behaved like anti-inflammatories —** This study directly contradicts the idea that omega-3s fight inflammation. In reality, both types of fats had either no effect or made inflammation worse. The takeaway is clear: blindly taking fish oil or eating "heart-healthy" vegetable oils is making things worse, not better.

Bad Diets Put Your Immune System on High Alert — and That Keeps You Inflamed

A study published in Frontiers in Immunology looked at 19,110 U.S. adults and found that people who ate low-quality diets had more signs of chronic inflammation.[3] The researchers used two major tools to measure diet: one that scored overall diet quality and another that looked at how inflammatory the foods were. The goal was to see how your daily food choices affect your immune system.

This also helps explain why omega-3 supplements, as shown in the International Journal of Epidemiology study,[4] didn't reduce inflammation. If the rest of your diet is poor, simply adding omega-3s won't fix the underlying immune imbalance. Instead, it could even backfire, raising inflammation further if your body is already under metabolic stress.

- **People with the worst diets had the highest levels of immune activity, without being sick —** Those eating the most processed, nutrient-poor foods had the highest levels of white blood cells, platelets, and neutrophils — cells that rush in when your body senses danger. Even though these people weren't fighting off an infection, their immune systems acted like they were. People with the worst diets were stuck in a constant state of low-grade inflammation.

- **You can't fix a bad diet with a few "healthy" foods —** Even if you include anti-inflammatory foods like berries, your immune system won't calm down if the rest of your diet is poor. What really matters is the overall quality and balance of everything you eat.

The study showed that people with pro-inflammatory diets still had lower inflammation if their total diet quality was high. That means it's not about eating a few good foods — it's about building every meal around whole, unprocessed ingredients.

- **Inflammation hits harder as you get older —** The study found that age makes this problem worse. As you get older, your immune system naturally becomes more reactive and less flexible, a process sometimes called "inflammaging." That means a poor diet is even more harmful if you're over 50. What you eat in your 60s and 70s has a bigger impact than it did in your 30s.

- **Fiber, alcohol, and calories made the biggest difference in inflammation levels —** When the researchers broke it down, three things stood out: not getting enough fiber, drinking too much alcohol, and overeating were the biggest drivers of inflammation. If you're eating clean but still bloated, tired, or dealing with brain fog, chances are you're still missing enough fiber or eating too much overall.

  Even a perfect supplement routine won't calm your immune system if those three areas aren't under control. Remember, fiber is necessary, but if you consume it when your gut is unhealthy, it makes symptoms worse. So, before increasing your intake of high-fiber foods, be sure your gut is healthy.

How to Reduce Inflammation Without Making It Worse

If you've been relying on fish oil or omega-3 supplements to fight inflammation, it's time to rethink that plan. The latest research shows that these fats — especially when taken in high doses or without regard for your overall fat balance and diet quality — actually raise key inflammation markers in your body. That means what you thought was helping is keeping you stuck in a cycle of low-grade immune stress.

The good news is, there are simple, proven ways to shift your body out of that inflammatory state. These steps don't just patch symptoms — they address the root of the problem: too much LA from vegetable oils, poor fat balance, and oxidized or low-

quality supplements that work against your health goals. Here's what I recommend to start fixing the problem at its source:

1. **Ditch the vegetable oils that flood your cells with inflammatory fat —** If your diet includes soybean oil, canola oil, sunflower oil, corn oil, or safflower oil, even in small amounts, your body is likely overloaded with LA. That's the real driver of inflammation for most people.

   These oils are hidden everywhere: salad dressings, sauces, chips, restaurant meals, even "healthy" processed snacks. Swap them for anti-inflammatory fats like grass fed butter, ghee, or tallow. If you eat out frequently or rely on packaged foods, start flipping labels, and looking for those oils — they're everywhere.

2. **Switch from fish oil to krill oil to protect your cells —** If you're taking omega-3 supplements, I recommend making the switch to krill oil. Unlike fish oil, krill oil binds omega-3s to **phospholipids** — fat molecules that actually make up your cell membranes. That means your body absorbs them better and routes them where they're needed most, like your liver and brain.

   Krill oil also contains **astaxanthin**, a powerful antioxidant that prevents it from going rancid. Rancid fish oil doesn't just stop working — it turns toxic. That's the last thing you want in your bloodstream if you're trying to cool inflammation.

3. **Be smart about dosage — high levels of omega-3s backfire —** Here's where people go wrong: they assume that more omega-3 is always better. But that thinking has led to a dangerous trend. High doses of omega-3 supplements, especially those taken long term, have been linked to an increased risk of atrial fibrillation, a heart rhythm disorder that raises your risk of blood clots and stroke.[5]

   This is the **omega-3 paradox**: the very thing you're taking to protect your heart could be harming it if the dose is too high. You don't need megadoses to see benefits. Stick with a food-first approach when possible — prioritize wild-caught fish like

Alaskan salmon, sardines, anchovies, and mackerel — and if you use krill oil, keep it in a moderate range. Just enough to support liver repair and heart health without tipping the balance.

4. **Rebuild your fat balance by focusing on animal-based whole foods —** Most people don't need to be loading up on plant-based oils for health. You're better off getting your fats from whole, unprocessed animal sources — like pasture-raised eggs, grass fed beef, lamb, bison, and dairy from grass fed animals.

   These fats have a better balance of saturated and monounsaturated fats and far less LA than even olive oil or so-called "healthy" seed-based products. If you're still eating almond butter, nuts, or seeds, which are high in LA, that's going to slow your progress.

5. **Avoid processed foods that hide damaged fats and drive inflammation —** Even if you're eating healthy most of the day, one processed meal or snack reintroduces the same harmful fats you've been trying to avoid.

   Even "healthy" processed snacks like protein bars and salad dressing often still contain high-LA oils. Don't trust gluten-free chips, store-bought sauces, or dairy-free desserts. Stick to simple ingredients and make your own versions when possible. If your goal is to calm inflammation and regain energy, you need to keep the fat composition of your diet tightly controlled.

Start there. Once you've eliminated the root drivers and rebalanced your fat intake, your body will begin to recover naturally. Inflammation will come down, energy will go up, and you'll stop throwing gasoline on the fire without even knowing it.

FAQs About Omega-3s and Inflammation

Q: Are omega-3s still considered anti-inflammatory?

A: Not in the way we've been led to believe. A large-scale genetic study published in the International Journal of Epidemiology found that higher omega-3 levels — especially DHA from fish oil — actually raised key inflammation markers.[6] That means omega-3s don't always calm inflammation the way we thought, and in some cases, they make it worse.

Q: Why doesn't fish oil reduce inflammation for most people?

A: Because inflammation isn't just about what you add — it's about what you remove. If your diet is still high in inflammatory vegetable oils, processed foods, or alcohol, fish oil won't help. The Frontiers in Immunology study showed that poor overall diet quality — not just lack of specific nutrients — keeps your immune system on high alert, no matter what supplements you take.[7]

Q: What's the real root cause of chronic inflammation in most people?

A: The biggest drivers are a diet full of LA from vegetable oils, not enough dietary fiber, too many calories, and poor fat balance. These factors disrupt your immune system and make inflammation a constant background problem, even if you feel "mostly healthy."

Q: Should I stop taking fish oil completely?

A: If you're relying on high-dose fish oil without fixing your diet first, it's time to reconsider. Most fish oil on the market is already oxidized by the time you take it — exposure to heat, light, and oxygen during processing and storage causes the fats to go rancid. Once oxidized, fish oil stops fighting inflammation and starts fueling it, creating harmful byproducts that damage your cells and arteries.

A better approach is switching to krill oil in moderation and focusing on anti-inflammatory whole foods like wild-caught fish, grass fed meats, and animal-based fats. Krill oil is more stable because it contains astaxanthin, a potent antioxidant that protects it from going rancid. Plus, it's absorbed more efficiently and doesn't require megadoses to support your fat balance and reduce immune stress.

Q: What's the fastest way to lower inflammation naturally?

A: Start by eliminating vegetable oils like soybean, canola, sunflower, and corn oil. Then rebalance your diet with animal-based whole foods, moderate amounts of omega-3s from krill oil or fatty fish, and more fiber-rich vegetables once your gut is healthy. Cut back on alcohol and avoid processed foods. These changes target the root of the problem and support your immune system the way it was designed to function.

Sources and References

- [1, 2, 4, 6] International Journal of Epidemiology August 2025, Volume 54, Issue 4
- [3, 7] Frontiers in Immunology June 5, 2025, 16:1596806
- [5] Korean J Intern Med. 2022 Dec 14;38(3):282-289