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New Research Claims Olive Oil Drives Obesity to Greater Extent Than Other Fats

Analysis by Dr. Joseph Mercola | March 25, 2026

STORY AT-A-GLANCE

- Oleic acid, the main fat in olive oil, triggers the creation of new fat cells even when calorie intake stays the same, making weight gain more likely over time
- Studies show that high oleic acid levels in the blood are strongly linked to obesity risk in both animals and humans, highlighting its role as a metabolic signal, not just a source of energy
- Excess oleic acid disrupts mitochondrial function by displacing a key fat called cardiolipin, which lowers ATP production and increases oxidative stress in your cells
- Most store-bought olive oils are adulterated with cheaper vegetable oils, exposing you to inflammatory fats that damage metabolism and make fat loss harder
- Reducing oleic-acid-rich oils and switching to stable fats like grass fed butter, tallow, or ghee helps restore energy, support fat loss, and repair metabolic damage

For decades, olive oil has been marketed as the gold standard of healthy fats — central to the Mediterranean diet and praised for its heart-protective benefits. It's become a staple in health-conscious kitchens, drizzled over salads, blended into dressings, and splashed into sauté pans without a second thought.

But sometimes what's widely accepted isn't the whole story. Behind olive oil's reputation is a single dominant fat: oleic acid. It's a monounsaturated fat you'll find not only in olive oil, but also in avocado oil and high-oleic seed oils. And it doesn't just pass through your

system unnoticed. Your body listens to it — and responds.

The story you're about to read breaks open a new chapter in our understanding of dietary fat. What you pour on your plate goes beyond adding flavor. It sends a signal. And depending on the oil, that signal could be telling your body to store more fat, whether you're overeating or not.

Oleic Acid Triggers New Fat Cell Growth

In a 2025 study published in Cell Reports, researchers tested different types of fats to see which ones led to more body fat — not just from eating too much, but from the fat itself acting like a trigger.[1] They found that one fat in particular — oleic acid — stood out. The goal was to figure out if certain fats tell your body to create more fat cells, not just fill up the ones you already have.

- **This study wasn't about fat cells getting bigger — it was about your body making new ones —** Most people think gaining fat means your current fat cells just get puffier. But this research looked at something more permanent: your body actually making more fat cells. Once that happens, those new cells don't disappear when you lose weight. They stick around and make it easier to gain weight again later.

- **Only oleic acid had this fat-boosting effect in both animals and humans —** Mice fed oleic-acid-rich diets showed a sharp increase in precursor fat cells, the ones that turn into mature fat-storing cells. Human fat cells exposed to oleic acid in lab settings did the same thing. Other fats like coconut oil and stearic acid didn't cause this change — only oleic acid did. Still, we need more replicated science to confirm that oleic acid does, in fact, cause obesity to a greater extent than other fats.

- **Even with the same calories, olive oil caused more fat buildup —** In one part of the study, mice were fed the same number of calories but from different types of fat. Those that got oleic-acid-heavy fats like olive oil gained significantly more fat — not because they ate more, but because their fat cells multiplied faster. That means fat variety, not just quantity, matters a lot.

- **More oleic acid in your blood means more fat cells created —** Blood tests showed a direct connection between oleic acid levels in the blood and how many new fat cells were created. The more oleic acid that showed up, the more new fat cells the body made. In other words, this fat acts like a signal telling your body to grow more storage space for fat.

Oleic Acid Flips Metabolic Switches That Tell Your Body to Store More Fat

Inside your cells, there's a control system that decides whether to build new fat tissue. Oleic acid throws that switch to "on," sending a signal that tells your body it's time to grow more fat cells. When that switch isn't working, this process doesn't happen, showing that oleic acid relies on this internal command to get the fat-storing process moving.[2]

- **Oleic acid shuts off your natural fat-limiting controls —** Your body also has a built-in safety system that's supposed to slow down or stop unnecessary fat cell growth. Think of it like a brake pedal that prevents you from creating more fat than you need. Oleic acid disables that brake, allowing fat cell development to go unchecked. The result is a steady stream of new fat cells being created, even when they're not needed.

- **Without that brake, fat cells multiply fast —** In one part of the study, researchers looked at mice that had this fat-limiting brake permanently turned off. When those mice consumed oleic acid, they experienced an explosion of new fat cell growth, much more than normal mice. This shows that oleic acid doesn't just promote fat storage, it also removes your body's ability to say "enough."

- **Human studies confirmed what the animal studies showed —** Using data from the UK Biobank, one of the largest health databases in the world, researchers found that high levels of monounsaturated fats in the blood, mostly oleic acid, were

strongly linked to higher obesity risk. Out of 249 different blood markers tested, oleic acid had the strongest link to being overweight.

Why Healthy-Sounding Oils Aren't Always Helping You

The study shows that oleic acid plays a bigger role in fat gain than most people realize. But there's another layer to this problem — one that's hidden in plain sight. The oils you trust as "healthy," like olive and avocado oils, are sabotaging your metabolism in more ways than one.

- **Let's start with what's actually in the bottle —** Most people assume that if they're buying olive oil, they're getting the real deal. But research has repeatedly shown that many olive oils on the market are **diluted or adulterated**, often with cheap, highly refined vegetable oils like soybean or canola. So, unless you know your source, you're likely getting a cocktail of inflammatory industrial fats with every pour.

- **Concerns over olive oil aren't new —** I previously **interviewed Brad Marshall**, who's done excellent work on reductive stress and has warned about the metabolic problems associated with oleic acid in olive oil, including increased risk of obesity and energy imbalance. That's a huge red flag for anyone struggling with metabolic issues, energy dips, or weight that won't budge.

- **Too much oleic acid disrupts your mitochondria in similar ways as linoleic acid (LA) —** While it isn't a polyunsaturated fat like LA, oleic acid still embeds itself into your mitochondrial membrane and crowds out cardiolipin, a key fat that your mitochondria need to make energy efficiently.

  When cardiolipin is displaced, the electron transport chain becomes unstable, leading to reduced adenosine triphosphate (ATP) production and increased oxidative stress. This same underlying mechanism is detailed in my 2025 **Advances in Redox Research review**, where I explain how both oxidative and reductive stress from fats like LA push mitochondria toward dysfunction and eventual breakdown.[3]

- **Still holding onto the idea that olive oil is heart-healthy?** This is partly true. It contains antioxidant-rich polyphenols that offer some protection. But those benefits don't cancel out the downsides when you're using olive oil liberally. When you strip away the antioxidants, oleic acid becomes a metabolic disruptor.

  If olive oil is in your kitchen, it doesn't mean you need to throw it out immediately. But it does mean you should stop treating it like a health food to pour freely. Your cells are listening to the signals you send them — make sure those signals are helping, not hurting.

How to Adjust Your Dietary Oils to Boost Your Well-Being

If you've been relying on olive oil as your go-to "healthy fat," it's time to rethink that habit. I used to recommend it too — until the research became too clear to ignore. Oleic acid has been shown to drive the creation of new fat cells, even without overeating. That means your body could be stockpiling fat just from the type of oil you use, not how much food you eat.

Here's how you start undoing that damage by removing the cause, rebalancing your fat intake, and restoring your mitochondrial energy. The goal is to reduce oleic acid buildup and get your metabolism functioning the way it was designed to. If you're struggling with stubborn belly fat, feel like your energy has flatlined, or notice fat creeping on even when you're eating healthy, here's what I recommend:

1. **Don't replace olive oil with vegetable oils — ditch both —** You might think swapping olive oil for something labeled "vegetable oil" is a step in the right direction, but it's not. Industrial vegetable oils like soybean, corn, canola, and safflower are worse than olive oil because they're packed with LA, a highly inflammatory polyunsaturated fat that damages your mitochondria, drives oxidative stress, and stays in your body for years.

These oils break down into toxic byproducts that interfere with hormone signaling and fat metabolism. So don't just replace one problem oil with another — remove both oleic- and LA-rich oils from your kitchen entirely.

2. **Switch to metabolically stable fats like tallow, ghee, or grass fed butter —** These traditional fats are lower in both oleic acid and LA and much more stable when heated. Use grass fed butter and ghee for cooking and keep tallow on hand for sautéing and roasting. These fats support mitochondrial energy production instead of disrupting it. They're also more satisfying, which naturally helps regulate your appetite.

3. **Eat meats from animals fed natural diets, not industrial feed —** If you're eating pork or chicken raised on high-LA feeds (like soy and corn), you're still getting large doses of unhealthy fats. I recommend switching to ruminant meats like grass fed beef and lamb. These animals convert the fats in their feed differently and don't store excess oleic acid the same way. Instead of chicken and pork, stick with wild game and grass fed beef.

4. **Prioritize carbs and collagen —** One of the biggest mistakes people make when removing olive oil is replacing it with more fat. That only compounds the problem. What your cells actually need is fuel in the form of easy-to-digest carbs like fruit, root vegetables, and white rice, alongside a steady supply of collagen-rich protein like bone broth or slow-cooked meats. This combo helps rebuild your cell membranes and repair fat-driven metabolic damage.

5. **Track your fat intake like you track your carbs or protein —** Most people don't think twice about the kinds of fats they use day to day, but your body does. Start paying closer attention to how much oleic acid you're getting, not just from olive oil but from foods like salad dressings.

   Treat it like any other macro: something to monitor and balance. Use a simple food journal or app to log your daily fat sources for two weeks. You'll quickly spot patterns — like how often olive oil or avocado oil sneaks into your meals.

Once you see it, you can start swapping it out with fats that actually support your metabolism. Awareness is the first step to change, and this simple tracking habit helps reconnect you with how your body responds to what's on your plate. Fat is not the enemy. But the wrong fat, even in a "healthy" form, creates the wrong signals. Reset those signals, and your body will finally respond the way it's supposed to.

FAQs About Olive Oil

Q: Is olive oil really causing weight gain, even if I eat healthy?

A: Yes, according to a 2025 study in Cell Reports, oleic acid — the main fat in olive oil — triggers the creation of new fat cells even without overeating.[4] This helps explain why some people gain weight despite clean eating and calorie control.

Q: What makes oleic acid different from other fats?

A: Oleic acid doesn't just store energy. It sends signals to your cells to make more fat-storing cells. Other fats, like stearic acid or coconut oil, didn't have the same effect in studies. The issue isn't just how much fat you eat, but what type.

Q: Isn't olive oil part of the healthy Mediterranean diet?

A: It is, but moderation is key. Olive oil does contain protective polyphenols, but in excess, its main fat disrupts mitochondria, promotes fat storage, and interferes with metabolic health.

Q: Should I stop using olive oil completely?

A: Not necessarily, but you should stop treating it like a free-pour health food. Many store-bought olive oils are adulterated, and even pure versions are problematic in large amounts. Track how often you're using it and consider switching to more stable fats like ghee, tallow, or grass fed butter.

Q: What's the best way to fix this if I've been using olive oil for years?

A: Start by removing high-oleic oils from your kitchen and replacing them with metabolically supportive fats. Prioritize easy-to-digest carbs and collagen-rich proteins, and monitor your fat intake like you would any other nutrient. Over time, this shift restores mitochondrial function and helps normalize weight and energy levels.

Sources and References

- [1, 2, 4] Cell Reports April 22, 2025, Volume 44, Issue 4, 115527
- [3] Advances in Redox Research June 2025, Volume 15, 100128