



***Essential Fatty  
Acids: Good Fat for  
Health, Muscle  
& Strength***

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## Essential Fatty Acids

by Rehan Jalali

**L**et me be up front about this: I'm going to try to make you buy something here. It's something that's good for you—and for your athletic performance—although it's an idea that takes getting used to. After all, nutritionists and diet gurus have been indoctrinating us about the evils of dietary fat since the 1970s, so it's difficult to believe that some fats are essential for life.

Apparently, the term *fat* is far too simple for the complex substance it represents. Here's why I believe it's in the best interest of everyone—bodybuilders and other athletes as well as everyday folks—to consider supplementing essential fats.

There are two essential fatty acids, or EFAs, linoleic acid and linolenic acid. Linoleic acid is included in the category known as omega-6 fatty acids, while linolenic acid—specifically, alpha linolenic acid—is an omega-3 fatty acid. Another omega-6 fatty acid, gamma linoleic acid (GLA), is also important for health and athletic performance. Like water and vitamins and certain amino acids, linoleic and alpha linolenic acids are required for life. If you don't get them from your diet, your body will deteriorate and you'll die.

Granted, a minimal level is required to stave off the ravages of deficiency. It hasn't been clearly defined, however, and there is no USRDA (United States recommended daily allowance) for either essential fatty acid. In the book *Fats That Heal, Fats That Kill* (Alive Books, 1997), author Udo Erasmus suggests a minimum daily intake of three to six grams of linoleic acid and one to three grams of linolenic acid to prevent deficiency. He further suggests that for optimum health people should take in 3 to 6 percent of their calories as linoleic acid and 2 percent as linolenic acid. (If you're truly interested in fats and their effects on health, I strongly recommend this book.)

There's a class of "hormones" called

prostaglandins in the human body. Certain prostaglandins are beneficial for health and disease prevention, while others are essential to the body's reaction to stress or injury. Prostaglandins are derived from essential fatty acids. There are three classes, or series, of prostaglandins. The series 1 versions, particularly PGE1, have many beneficial effects for athletes. They appear to have anabolic effects, promote thermogenesis, increase sodium and water clearance by the kidneys and prevent blood clots. Series 2 prostaglandins have the opposite effects, as they seem to trigger the release of energy substrates by breaking down structural protein, causing salt and water retention and promoting the clotting of blood. Nature always maintains a balance. In a fight-or-flight situation your body reacts to ensure your short-term survival: Your blood pressure becomes elevated, the bleeding stops and the energy the body needs becomes available.

One interesting fact is that both series 1 and series 2 prostaglandins are derived from the same precursor, linoleic acid (omega-6 fatty acid), while series 3 prostaglandins are derived from linolenic acid (omega-3 fatty acid). The series 3 prostaglandins are important not for their actions but, rather, for their ability to decrease the rate at which series 2 prostaglandins are formed.

So series 1 prostaglandins promote performance, series 2 prostaglandins disrupt performance, and series 3 prostaglandins block the formation of series 2 prostaglandins. Obviously, you'd just want to buy series 1 and series 3 prostaglandins. How wonderful if it were that easy. Unfortunately, it's not. You'll probably get a direct-mail offer to purchase East German series 1 and series 3 prostaglandins sometime soon. Don't believe it.

Prostaglandins are not true hormones. They're paracrine hormones or in some cases autocrine hormones, which means they're only active in or near the cell where they're generated. True hormones float all through the body to reach distant target organs or tissues. The downside to the

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local-action-only feature is that prostaglandins aren't orally bioavailable—unless you take them in huge amounts—and can only be administered intravenously. The upside is that you can take the precursors—the essential fatty acids—and give your body the building blocks to form prostaglandins naturally and legally.

That brings me to a superior source of essential fats, Omega Stak™. To begin with, it's a nitrogen-flushed product in gelcap form.

Essential fatty acids have specific chemical structures, including fragile double bonds that are easily disturbed by heat, pressure and even light. Oils that contain essential fatty acids are basically liquid fatty acids and must be protected from heat, pressure and light throughout the pressing, packaging and shipping processes. What's more, manufacturers must remove any extra oxygen from the processing lines and from inside the bottle, which is usually done by flushing the lines and bottle with nitrogen gas. To that end, gelcaps are less air sensitive and may have more stability.

Of course, a quality process is meaningless unless it makes a quality product, and Omega Stak contains the cold-pressed oil of organic soybeans, flax seeds, borage seed and wheat germ. It also contains lecithin, rosemary oil and vitamins E and C. Many of us have used flaxseed oil or evening primrose oil for fat supplementation. Flaxseed provides a high concentration of omega-3 fatty acids, while evening primrose is a good source of GLA. Although they're fine for correcting a deficiency or imbalance of omega-3 or omega-6, respectively, Omega Stak is more balanced, with a number of oils that provide the essential fats in a perfect balance. Nature created a balance for a reason, and you should maintain it.

The days of water-packed tuna and rice are over as fats become a key player in bodybuilding-diet strategy. Omega Stak can help you get the most health and performance benefits the EFAs have to offer.

**Editor's note:** Rehan Jalali is the president of the Supplement Research Foundation. He has a B.S. in nutrition and biochemistry and has studied the science of nutrition and supplementation for the past seven years. He's also a nationally ranked competitive natural bodybuilder and former collegiate powerlifter.

## Essential Fats Q&A



**Q:** *What's the deal with fat? I thought it was bad, but now I keep reading about how I need it.*

**A:** Too much saturated fat can be bad for you in that it can contribute to heart disease, but the fats known as essential fatty acids, or EFAs, are absolutely necessary for optimal health. EFAs can prevent heart disease, and they can enhance your ability to build muscle and even burn fat.

Studies have shown that EFAs can do everything from improving the action of insulin to decreasing muscle breakdown to increasing hormone production, specifically growth hormone and testosterone. They do it through a number of mechanisms, one of which is helping the body manufacture prostaglandins.

Where do you get EFAs? Nuts, seeds, fish and various oils can provide a lot of them, and even animal fats have some as well, but animal fats also contain loads of saturated fat, so don't overdo the steak and pork chops.

Science has recently discovered that the EFAs, including the omega-3s, -6s and -9s, are vital for health. You may have noticed that nuts are included in many diets in *IRONMAN*, precisely because they contain the EFAs that facilitate proper hormone production. For most bodybuilders, however, a balanced EFA supplement is also necessary for an optimal muscle-building environment, especially those who are restricting calories to stay lean.

—Steve Holman, editor in chief, *IRONMAN*

**Q:** *There's a lot of new research on the essential fatty acids—for example, indicating that they help build muscle and burn bodyfat. Would you elaborate on those points?*

**A:** I agree with those who say that relative deficiencies of essential fatty acids—particularly omega-3 fatty acids—are becoming increasingly evident. Much of this derives from the fear of fat that's instilled by well-meaning but ill-informed “experts” who fail to differentiate good fats from bad fats. An example of bad fats would be trans fats, which are ubiquitous in our food yet have no value other than maintaining shelf life.

Among the benefits associated with fats such as omega-3s are increased insulin sensitivity even when people are on a high-fat diet, which normally promotes decreased insulin sensitivity. The increased insulin response favors lower bodyfat. Omega-3 fats also promote a tighter binding of IGF-1 to cell receptors, which favors an anabolic muscle effect. In addition, omega-3 fats comprise much of the fat found in the brain, and emerging theories show that a long-standing omega-3 deficiency may lead to depression. A recent study reported in *Biological Psychiatry* found that depressed people had brain levels of omega-3s that were 40 percent lower than normal.

You may, however, want to avoid consuming an omega-3 source, such as fish or flaxseed oil, just before you go to bed. At least two substances known to induce sleep, interleukin-1 and prostaglandin D2, are inhibited by omega-3 fats, although they are stimulated by the omega-6 fats found in vegetable oils; i.e., linoleic acid.

Other studies show that a diet containing at least 30 percent fat is absolutely essential to testosterone synthesis in the body. This is particularly important for natural bodybuilders, who often favor diets of less than 10 percent total fat. Such diets, when combined with the increased cortisol release that oc-

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ctors with extensive aerobic training, are a good way to induce a high level of muscle catabolism.

I think the emphasis should be on omega-3s and omega-9s, with a smaller intake of omega-6 fats. You do need some linoleic acid, since it can't be synthesized in the body. Anyone who uses a supplement such as flaxseed oil or borage oil, however, is well covered in this area.

—Jerry Brainum, *bodybuilding and nutrition researcher*

**Q: I want your recommendation for the most anabolic legal supplement I can use—cost is no object.**

**A:** Specific dietary fats. I know that isn't the answer you wanted. I imagine you were hoping that one of the exotic supersoluble pro-hormone gargling mouthwashes or the new spit-back-at-you creatines would be my anabolic top choice, but it's time to start thinking of fat as a supplement. Fat: disgusting, boring fat!

About three years ago a number of bodybuilding writers including Will Brink and myself proposed the idea of increasing performance by modifying an athlete's diet with more specific dietary fats, especially essential and monounsaturated fatty acids. Most of those new, lower-carbohydrate eating regimens were geared toward fat loss, and



they're still popular. I've noticed, however, that bodybuilders who want to gain muscle seem to avoid my original advice: To grow muscle, eat more dietary fat, not only on a low-calorie program but even at above-maintenance calories! A typical plateaued "I can't gain weight" bodybuilder, who was eating 4,000 calories a day in protein and carbs, actually lowered the number of calories he'd been eating and gained muscle, not fat, by eating less protein and eating fat!

How was it possible? His body was oxidizing a portion of the protein he was eating into glucose for energy. He wasn't getting fat, but his body had reduced his protein synthesis to make the conversion of protein to glucose more efficient. An anabolic environment in the body is a state in which the correct selection of macronutrients causes growth. Having an anabolic environment doesn't mean eating as many calories as possible and not getting fat. If all it took to build muscle was to drink a protein drink three times a day, we'd all be huge by now.

John Parrillo has always advocated increasing fats, but his choice has been the esoteric medium-chain triglyceride oil (MCT), the "fat-less" fat. How did John convince his clients and customers to consume those dreaded fat calories? He packaged the oil and directed its use as if it were a supplement, not a simple macronutrient. Supplements seem so precise, high-tech, even...druglike. So I use John's trick to make fats more morally acceptable. We no longer eat "fat." We now take our dose of fatty acids.

Suppose I want to recommend some essential fatty acids. I never say, "Eat some salmon or trout every day." I say, "Take six grams of fish oil capsules, two capsules three times a day." Or I say, "You must add one tablespoon of flaxseed oil to every blender drink." My ideal choice for dietary fat would be whole-food sources, like fish, nuts, avocados or olives, as their various trace micronutrients have added benefit; however, I accept the fact that while bodybuilders won't eat fatty foods, they will consume fat "supplements." Most bodybuilders treat fat as a micronutrient, taking in only milligrams a day, not as a major source of energy calories. Yes, you can consume the bare minimum of essential fatty acids in capsule form, whether it be fish oils or the more exotic hemp-seed oils, but a few capsules won't add enough calories to tip the anabolic balance in your favor. You need to have at least 20 percent of your daily calories coming from fats to improve protein synthesis. Remember, there's no research showing that adding pro-hormones will improve protein synthesis, but there is such research on dietary fats.

To make it easy, I like to recommend splitting your fats into thirds: Of your minimum 20 percent fat calories, about 7 percent should come from saturated fats (all meat, dairy and MCT fats qualify), another 7 percent from essential fatty acids (from vegetable oil sources) and the last 7 percent from monounsaturated fats found in olive oil and macadamia nut oil.

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My top anabolic choice: 20 to 30 percent of your calories coming from dietary fats every day. Eat three solid-food meals. Drink three blender protein drinks, and in each one include one tablespoon of MCT oil and one tablespoon of flaxseed oil or use oil capsules. Make sure you use two tablespoons of olive oil on your salad greens. If you can't stand olive oil (I can't), use macadamia nuts or their oil. And take six fish oil capsules a day. If you do that every day, you'll be getting at least 20 percent of your calories from dietary fats. Your body will improve protein synthesis, and less of the protein you consume will be oxidized as an energy source.

—Dan Duchaine,  
author, *Body Opus*

