Feb 12, 2009: Marksdailyapple.com

The Definitive Guide to Fats

Whereas cholesterol usually gets the gold for most demonized nutritional substance, fats undoubtedly take the silver. We recently covered the cholesterol conundrum, and this week it's time to confront the fervor over fat. Thanks for joining us today. Please make yourselves comfortable.

As you know, I've always been a friend to many fats. But the fact remains, ladies and gentlemen, that not all fats are created equal.

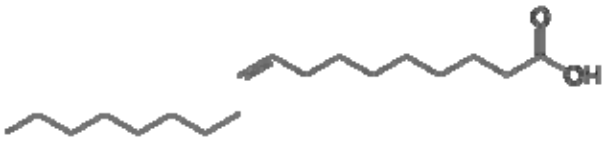
A few fats, including but not limited to trans fats, deserve every bit of disparagement they get and then some. However, we feel for those other little guys in the group. Many of them are, assuredly, a good lot, and we'd like to put in a good word for them.

Everyone ready? Servers are coming around with crudite platters as we speak. Let's begin, shall we?

Fats are compounds of carbon, hydrogen and oxygen atoms that exist in chains of varying lengths, shapes and orders. They're one of the vital nutrients required by the body for both energy and the construction/maintenance of "structural" elements, such as cell membranes.

Although all fats to some extent contain both saturated and unsaturated fatty acids, they are generally categorized by levels of saturation. Moving on…

The Monounsaturated Fats

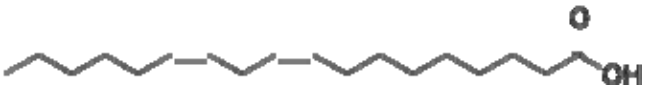


Biochemically speaking, these fatty acids sport a single double bond in their fatty acid chain. The more double bonds a fatty acid boasts, the more "fluid" it is. They are generally liquid at room temperature.

Monounsaturated fats are found in numerous oils, including olive oil, flaxseed oil, sesame seed oil, sunflower oil, safflower oil, corn oil and peanut oil. Notice that we use the word “found” and not comprise. The fact is, these oils contain varying levels of monounsaturated fat. The rest is a mix of polyunsaturated and saturated. Olive oil, for example, contains about 75% monounsaturated fat, and canola 60%. By the way, these fats are also found in avocados and nuts. They’re granted approval (as much as any fat is in conventional wisdom) as a “healthy fat.”

(Excuse me. May I cut in here please? Yes, I’d like to announce that we will be deconstructing some of this “healthy fat” assertion shortly. Thank you. Carry on.)

Poly in the Cracker? The Polyunsaturated Fats



Can you guess? Polyunsaturated fats have, yes, more than one double bond in their fatty acid chain. They tend to be liquid even when refrigerated. Their problem is they also tend to go rancid easily, particularly when heated. Yup, it sounds nasty, and you should see it! Free radical damage galore. When we heat them (and we often do), they often become oxidized. We’ve let in the Trojan Horse at that point and opened ourselves up to all kinds of free radical pillaging – everywhere from cell membrane damage to wrinkles to arterial plaque build up.

Polyunsaturated fats are found in grain products, soybeans, peanuts and fish oil. Fish oil and grain products in the same category! Say it isn’t so! (Heightened whispers and shuffling.)

Let’s all take a breath. There’s more to the story.

Enter Essential Fatty Acids!

First off, we call them essential because the body can’t produce them itself and must obtain them from food. We’re talking about omega-3 and omega-6.

Omega-6. It’s important, I fully acknowledge. Omega-6 fatty acids, found in corn and other grains as well grain-fed livestock, play a crucial role in dermal integrity and renal function among other things. But if left unchecked, they run amok, and spur inflammation. Egad! Ratio matters, but we’ll get to that in a minute.

What keeps these guys in check? Why, omega-3s, of course. Ignored for decades by the medical establishment, they’re finally garnering respect, but it’s still not enough in my opinion.

Omega-3s are found primarily in fish, algae, flax and nuts. You also find good portions of them in eggs from chickens that are fed fish or flax meal. And you've heard us go on and on about the three forms: ALA (think flax) as well as EPA and DHA (think fish oil). Omega-3s aid circulation by naturally thinning the blood, fight systemic inflammation, support brain function and ease symptoms of depression, anxiety and even ADHD. (Nods of approval)

Now back to the ratio matter. Estimates vary, but experts generally characterize **Western diets as anywhere between 10-30 parts omega-6 to 1 part omega-3 (10-30:1). What ratio should we be getting? What did our primal ancestors likely eat? Try 1:1.** Although many in the establishment will try to tell you that 4:1 is good enough.

This takes us back to the question of lean meat. If you recall, my reasoning in offering some support for lean meats (in lieu of fattier meats that our ancestors ate, as a number of you reminded me) was the fatty acid ratio of the fat in modern meat. Grain-fed meats are much higher in omega-6 fatty acids and lower in omega-3 than grass-fed meats, but not everyone has access to grass-fed meats. The best way to combat the plethora of omega-6 is to watch your ratios and to consume more omega-3s.

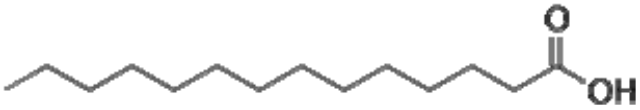
Yes, folks, we're a long way from healthy here. The sky high ratio of typical Western diets sets us up for inflammation, high blood pressure, blood clots, depressed immune function and sub-optimal brain development and neurological function. Egad, is right.

And so we return to the question of all those "healthy" monounsaturated and polyunsaturated fats. There's more to the question than the big CW tells you. The omega ratio of "monounsaturated" soybean oil? Anyone, anyone? It's 7:1. Corn oil? It's 46:1. (Audible gasps, clutching of pearls, adjustment of jackets)

So, what about the other oils? What about olive oil? The ratio for olive oil is 3:1, which isn't great in and of itself. But there's yet another wrinkle. Olive oil is 75% monounsaturated and 14% saturated, which means that only 11% of it has the polyunsaturated ratio to begin with. In these relatively small amounts, ratio isn't as much of a concern, particularly when the oil contains so many other good compounds like polyphenols that fight inflammation damage caused, in part, by the problematic ratio. Corn oil, on the other hand, contains only about 25% monounsaturated fat (and 13% saturated). The ratio matters big time here.

The Saturated Fats

Ah, good old saturated fats. You seem so easy in comparison. CW makes you into a monster, but we see you more in the light of King Kong-powerful but sympathetic, misunderstood. You're among friends here.

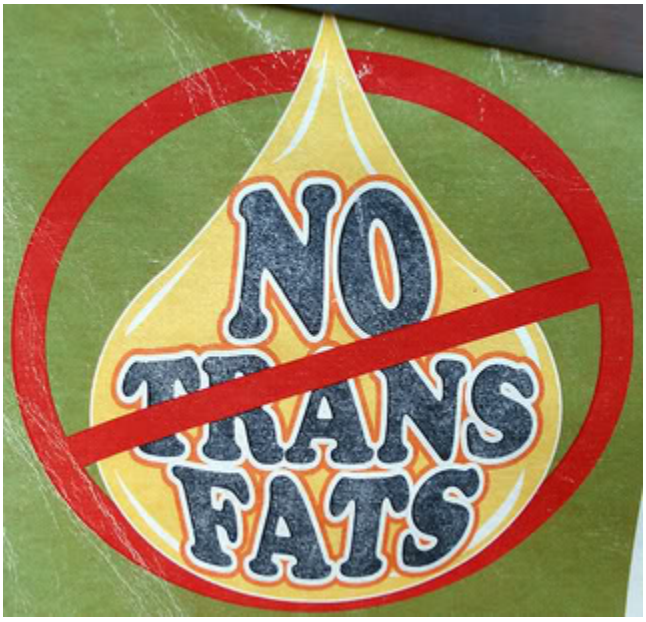


Before we move on, we can't forget the chemistry note. Saturated fats have all available carbon bonds paired with hydrogen atoms. I know, not the most interesting, but the important part here is that they're highly stable. They don't have the same tendency toward rancidness as polyunsaturated fats, even if heated. This is a good thing.

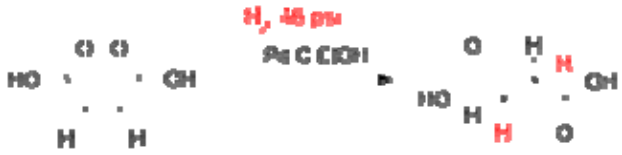
I've been brazen enough to recommend saturated fats, found in animal products and some tropical oils, as part of a healthy diet, and I'll say it again. **Saturated fats serve critical roles in the human body.** They make up 1/2 of cell membrane structure. They enhance calcium absorption and immune function. They aid in body's synthesis of the essential fatty acids and provide a rich source of fat soluble vitamins.

Last but not least, they provide cholesterol. Yes, the human body makes its own anyway, but it all balances out. Can I help that I've been won over by its many charms? Naturally occurring substances, natural body processes appeal to me – unlike our next categories.

Trans Fats



We've all heard the story by now. The unnatural chemical modification process that created trans fats made products more shelf stable but has wreaked havoc in the bodies of those who ingest them. (Quick fact: the hydrogenation process changes the position of hydrogen atoms in the fatty acid chain.)



The body doesn't recognize the transformed fats and, innocent as it is to snack food chemists' intent, doesn't know to eliminate it. The trans fats are absorbed through cell membranes, where they initiate general disorder in cell metabolism. Downright unsavory, if you ask me.

Trans fats, banes of our existence that they are, have been associated with inflammation, associated atherosclerosis, diabetes, obesity and immune system dysfunction. And it turns out they're bad for your profile.

A study out some months ago showed that trans fats caused a "redistribution of fat tissues into the abdomen… even when total dietary calories are controlled." Kidding about profiles aside, abdominal fat (i.e. apple shaped body) has been associated with the build up of fat around internal organs, which has in turn been associated with a higher risk of heart disease.

Interesterified Fats
"What are these?" you ask. Good question. Insteresterified fats are a new breed of chemically modified fats created to avoid the trans fat label now reviled and even outlawed in some cities. Like trans fats, these fats go through a kind of hydrogenation process along with the associated rearrangement of fat molecules and an enrichment with stearic acid. (Anyone licking their chops yet?) The point is the same as it was with the trans fat poison, er process: it makes the product more shelf stable.

So, this sounds all too familiar, no? Sound like splitting hairs? You got it. (Insert your own expletive.)

My suggestion: if hydrogenated is mentioned anywhere on the label, run like mad.

Now get this. Research is showing that the effects are not just similar to trans fats but worse. Turns out these fats "may raise blood sugar levels even more than trans fats." Just what we need in this country! The researchers suggest that this new fat actually "alters metabolism in humans." (General commotion, a few calls to action.)

Ladies and gentlemen, thank you for your generous attention. I say we open the floor for questions and discussion.