

[The Definitive Guide to Saturated Fat](#)

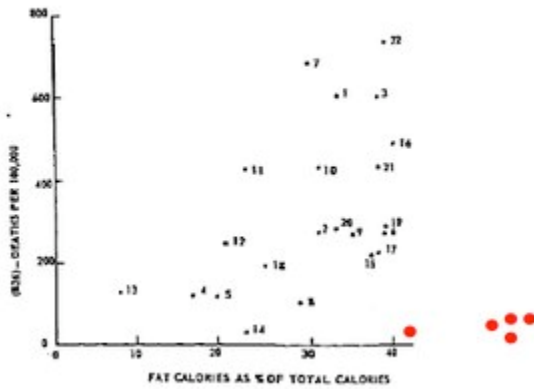
It's probably the one thing that prevents people from fully buying into the [Primal Blueprint](#). Almost anyone can agree with the basic tenets – eating more vegetables, choosing only clean, organic meats, and getting plenty of [sleep](#) and [exercise](#) is fairly acceptable to the mainstream notion of good nutrition. The concept of [Grok](#) and a lifestyle based on evolutionary biology can be a harder sell, but anyone who's familiar with (and accepts) the basics of human evolution tends to agree (whether they follow through and adopt the lifestyle is another question), at least intellectually. But saturated fat? People have this weird conditioned response to the very phrase.

“But what about all that saturated fat? Aren't you worried about clogging up your arteries?”

In fact, “saturated fat” isn't *just* that; it's often “*artery-clogging saturated fat.*” Hell, a Google search for that exact phrase in quotations produces 4,490 entries (soon to be 4,491, I suppose). Most doctors toe the company line and roundly condemn it, while the media generally follows suit. The public, unsurprisingly, laps it up from birth. The result is **a deeply ingrained systemic assumption that saturated fat is evil, bad, dangerous, and sinful**, a preconceived notion that precludes any meaningful dialogue from taking place. Everyone “knows” that saturated fat clogs your arteries – that's treated as a given – and attempting to even question that assumption gets you lumped in the crazy category. After all, if you start from such a “fundamentally incorrect position,” how can the rest of your argument be trusted? Thus, talk of the superior cardiovascular health of the Tokelau (with their 50% dietary saturated fat intake) or the Masai (with their diet of meat, blood, and milk) or the Inuit (with their ancestral diet of high-blubber animals) is all disregarded or ignored. If they even deign to listen to the facts, they'll acknowledge the existence of healthy populations eating tons of saturated fat while muttering something about “genetic adaptation” or “statistical outliers.” It's all hogwash, and it's infuriating, especially when there's so much literature refuting the saturated fat hypothesis. If you're interested in more information on these three oft-cited high-saturated fat groups, check out Stephan's entries on the [Tokelau](#), the [Masai](#), and the [Inuit](#).

It all started, of course, with the infamous Ancel Keys and his Seven Countries Study, which tracked the fat consumption and heart disease levels of various nations. It was named for the seven countries that saw an increase in heart disease cases correspond with increased fat consumption, but it should have been named the Twenty Two Countries Study for all the data he omitted. Data, I should mention, that demolished his hypothesis of fat intake causing heart disease. The original paper noting Keys' omissions was largely ignored and is tough to track down, but Peter over at [Hyperlipid](#) had access to it and shows the original graph with all the nation data included (with the Masai, Inuit, and Tokelau thrown in for fun represented by the red dots).

The original evidence....



Try drawing a straight line through those data points... I dare you! As you can see, there is a faint, weak correlation between fat intake and heart disease, but it's just that: a correlation. It shouldn't confirm anything except the need to run controlled experiments to directly measure the effects of dietary fat. Unfortunately, that correlation was enough to get Keys the front cover of *Time* and widespread acclaim as the father of dietary science. His hypothesis gained traction in the scientific community and mainstream [CW](#), a position it has never really relinquished. Subsequent controlled experiments to measure the effects of saturated fat have been either inconclusive, poorly designed, or completely unresponsive of the saturated fat-is-evil hypothesis, but because the starting point assumes it to be true, those inconclusive or unresponsive results become aberrations while the poorly designed studies become canon. Meanwhile, Keys' peer, British scientist John Yudkin, was finding even more compelling [connections between dietary sugar and heart disease](#), but his ideas gained no traction and garnered no significant follow up experimental studies. Keys got the cover of *Time* and heaps of public adulation; Yudkin was relegated to publishing now-out-of-print books, [writing letters to scientific journals](#) (PDF) that were only ignored, and languishing in relative obscurity. Americans, as you can guess, got the real shaft. I suspect I'm getting a little off track here, so I'll just point people toward [Good Calories, Bad Calories](#) for a full discussion of the Yudkin-Keys issue.

For a quick summary of the Ancel Keys debacle to send to friends and family worried about your saturated fat intake (who might not be interested in reading a blog post), check out this quick [clip](#) from Fat Head.

What is Saturated Fat, Exactly?

Saturated fatty acids (SFAs) are referred to as saturated because all available carbon bonds are tied up with a hydrogen atom. That is, there are no openings for rancidity or spoilage, whereas a polyunsaturated fatty acid containing two or more pairs of double bonds without hydrogen atoms occupying the open space is wide open for oxidation. SFAs are shelf-stable, resistant to heat damage, and essential to many bodily functions. Roughly half of our cell membrane structure is composed of saturated fat, and saturated [animal fats](#), like butter or fatty [organ meats](#), contain huge amounts of essential fat-soluble vitamins (K2, A, D, among others). (Sure, you could just take them in capsule or liquid form, but the very fact that these (universally praised) vitamins naturally occur in evil saturated fat indicates that maybe, just

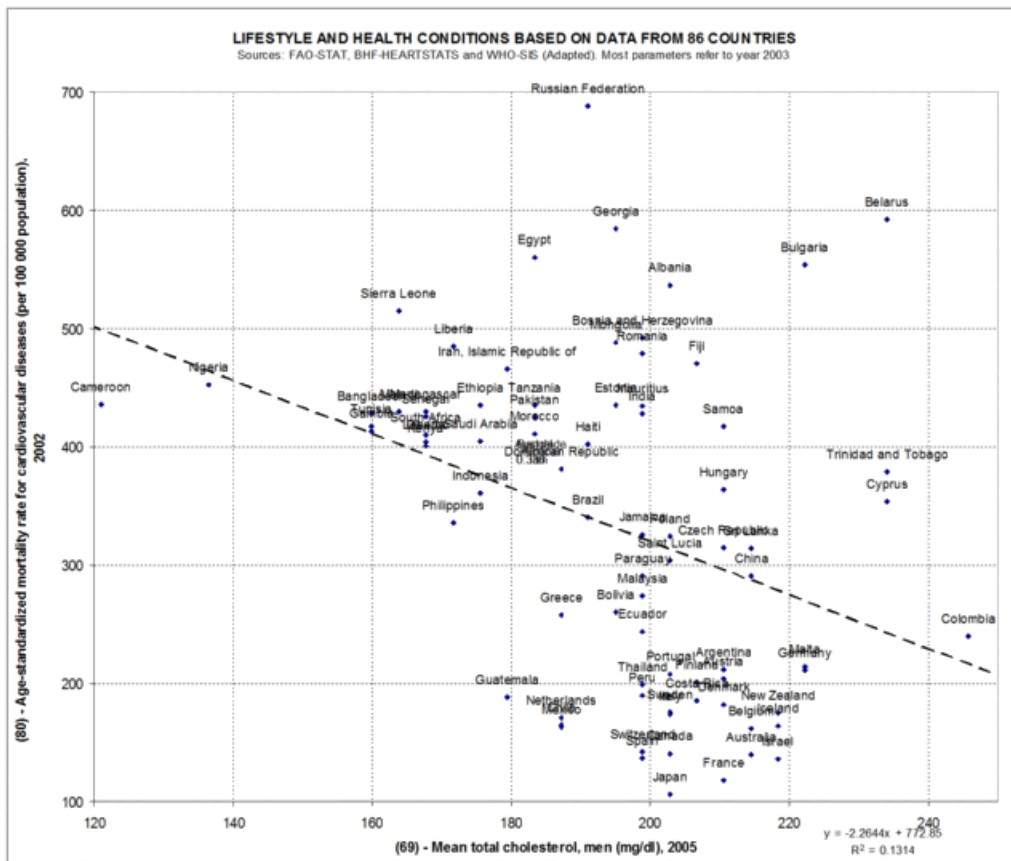
maybe it's not so evil after all. Researchers were particularly dumbfounded at one [study](#) (PDF) indicating high-saturated-fat fermented cheeses containing large amounts of [Vitamin K2](#) actually reduced cardiovascular mortality, but they soon came to their senses and recommended opting for supplements rather than real food. Ridiculous.)

Saturated fat is also a fantastic source of energy, at least if you trust your body to make the right decision – otherwise, why else would we [store excess carbohydrates as saturated body fat](#)? In fact, when we burn body fat for energy, either through exercise or through dieting, we are quite literally consuming huge amounts of saturated (and monounsaturated) fat. Body fat is energy to be used for later; dietary fat is energy to be used immediately. Whether you're burning through your stores of adipose tissue or downing flagons of warm ghee, all that fat goes through the same processes in your body to be converted to energy. Burn your ass flab, take a bite of fatty rib-eye – it doesn't matter. Your body treats that fat the same way. As [Richard](#) and [Tom](#) have said before, losing weight is like eating pure lard, which has nearly the same fatty acid composition as human adipose tissue. To vilify saturated fat is to assume that, over the span of our evolution, our bodies have somehow developed a predilection for a deleterious energy source that contributes to cardiovascular disease. That's absolutely preposterous, unless Darwin and company somehow got it all wrong with the whole natural selection thing. Somehow, I'm leaning toward trusting the millions of years old case study known as evolution.

Where Do They Get Off, Anyway?

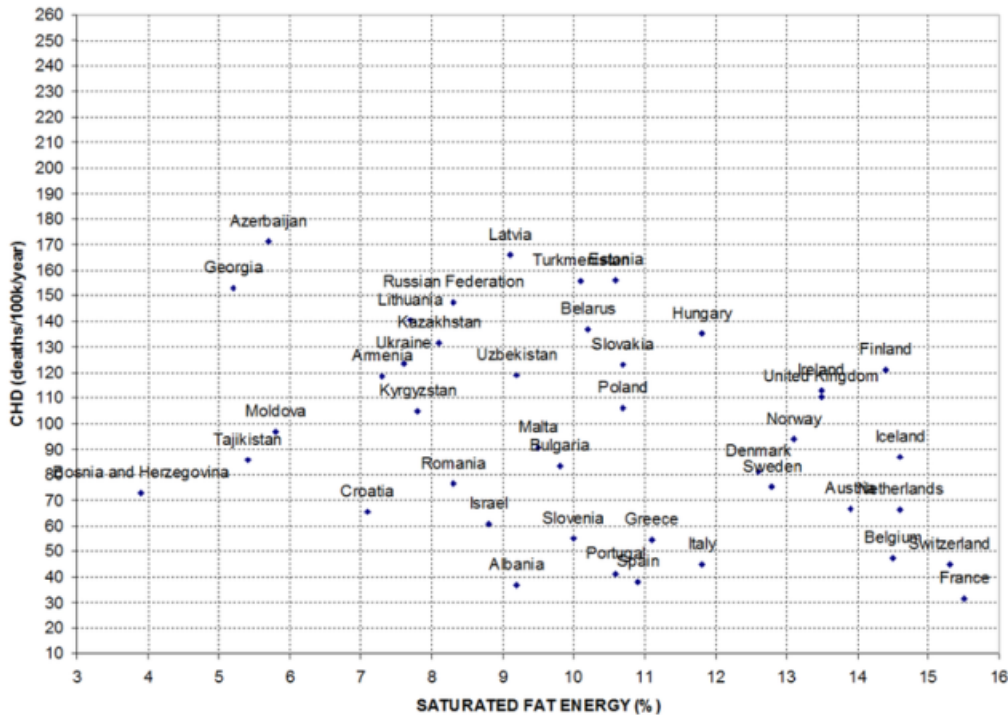
Since Keys has been thoroughly discredited (not if you ask most people with any real say in the matter) and there are plenty of examples of groups eating a high saturated fat diet and retaining optimum cardiovascular health ("Those are just outliers!"), how does the outcry against saturated fat continue unabated? Well, it all starts with cholesterol, yet another vilified substance that our bodies naturally produce because, well, it's completely essential to proper bodily function (though if you listen to the experts, our bodies are suicidal entities who can't be trusted to do the right thing). Elevated cholesterol has long been fingered as a player in cardiovascular disease, and saturated fat has been shown to increase cholesterol levels, so saturated fat is therefore to be avoided. Sounds relatively sound. So high total cholesterol levels are bad, right? Not so fast.

As I detailed in my last big post on [cholesterol](#), total cholesterol doesn't tell the entire story, and it doesn't even necessarily indicate risk for cardiovascular disease. Just take a look at the graph plotting global total cholesterol versus cardiovascular disease. There's absolutely no positive correlation, and there may even be a negative correlation. Far more likely is that there's no connection at all.



Nowadays, most “experts” will agree that total cholesterol isn’t everything; they instead move the goalposts and focus on LDL, or “bad cholesterol,” which is increased by eating saturated fat. Eating more saturated fat does seem to increase serum LDL (“bad” cholesterol) in certain cases, but it also increases HDL (“good” cholesterol). Okay, so saturated fat increases LDL, which is “bad.” So global levels of saturated fat intake should predict cardiovascular disease, right? It doesn’t seem to pan out that way. Do you see a correlation? I don’t.

SATURATED FAT ENERGY (%) vs CORONARY HEART DISEASE (deaths/100k/year)
 European Region, Men, 1998; Source: www.heartstats.org (Adapted)



Oh, but saturated fat increases triglycerides, [they say](#), which – even I agree – are a good marker for poor heart health. Except that it doesn't. Carbohydrate intake increases triglycerides, not saturated fat intake (honest – [even the AHA will tell you that!](#)). This is either a blatant lie, or it's willful ignorance. Maybe even both. Either way, the end result is a continuation of the saturated fat vilification. The average person will go to cnn.com, read the headline, and skip ahead to the meat: "...eating lots of saturated fat can all add up to higher triglyceride levels."

As far as heart disease goes, I still have yet to hear a workable process by which saturated fat contributes to it. It increases LDL, but the LDL it increases is large, fluffy, and almost impossible to oxidize. The layman's notion of saturated fat literally clogging up the arteries like grease in a drain isn't taken seriously by researchers anymore (who know it's really all about inflammation and oxidized LDL), but it's still the most prevalent explanation for why saturated fat is so bad. We now know that the [HDL/triglyceride ratio is far more predictive](#) of cardiovascular events than LDL, but still LDL gets all the attention. The "alternative hypothesis" (which is really the one that makes the most sense) [focuses more on oxidized polyunsaturated fats](#) and [imbalanced Omega-6/Omega-3 ratios](#) rather than saturated fat intake, which (as is pretty obvious by now) doesn't matter one way or the other. The observational data doesn't add up, the actual physiological process can't be explained, and the body seems to prefer saturated fat. I have to ask... if we know that arteries don't "clog up" from concentrated fatty acids in the blood like bad plumbing and that SFAs aren't prone to oxidation, just what is the issue with saturated fat and heart health?

They've also tried connecting saturated fat intake with various forms of cancer. Breast, colon, pancreatic – you name the cancer, researchers have probably warned against saturated fat intake as a risk factor for it. But every study that suggests a link between saturated fat and cancer is purely observational. These aren't controlled studies, folks – these are often studies

in which dietary information is gleaned from questionnaires asking people about their dietary habits for the last five years. The subjects are often elderly or middle-aged, people busy with life and all its stresses... and they're expected to remember their exact dietary habits for the past five years? Give me a break. And even if every one of the subjects were to recall their eating with perfect accuracy, what does a correlation with pick-your-cancer really tell us? It tells us that the Standard American Diet, with its massive amounts of grains, sugar, starches, margarines, vegetable oils, and yes, some red meat and artery-clogging saturated fat, is bad for us. The researchers may try to seize on a single aspect of the diet (usually saturated fat), but that only tells us that saturated fat has a bad reputation. Is it deserved? We certainly can't draw any conclusions from an observational study confounded by dozens of other variables. And yet still the crazy headlines jump out from all angles: "Saturated Fat Linked To Pancreatic Cancer!"; "Colon Cancer And Red Meat: Is Your Burger Killing You?" I think I did a decent job disassembling the latest red meat (read: saturated fat) [scare study](#), as did [Dr. Eades](#).

What About Cordain's Stance on Saturated Fat?

Although he's softened his stance a bit recently, Loren Cordain still maintains that saturated fat never formed a significant portion of the Paleolithic diet. He even suggests that because it increases LDL, saturated fat does play some role in cardiovascular disease. While we're all in debt for Dr. Cordain's impressive work cataloguing the possible diet of Grok and highlighting the [dangers of grains](#), [legumes](#), and [sugars](#), I believe it's becoming increasingly clear that he's got it wrong with his (albeit tempered as of late) condemnation of saturated fat.

To begin with, man has a taste for fat. It's delicious, and that's no mistake. Given the choice between a lean chicken breast and a fatty, crispy thigh, most people instinctively go for the thigh. Social anti-fat conditioning might direct a few of us toward the dry breast, but fatty cuts just taste better. I think even Cordain would agree that Grok would opt for the fatty cuts first; where we differ is in our opinion of Grok's access to such fatty cuts. Cordain believes the fatty acid composition of ancient game was mostly monounsaturated, while I doubt it was so clear cut. According to the WAPF's Mary Enig and Sally Fallon, the fatty acid composition of [wild game available to native Americans](#) varied, with the most prized sources of fat (kidneys) being primarily saturated. In fact, Vilhjalmur Stefansson, hallowed purveyor of [pemmican](#) and admirer of the high-fat Inuit diet, spent considerable time with the northern native Americans and noted that they seemed to "hunt animals selectively." They would specifically pass on the tender calves and go for the older caribou, the ones with huge slabs of back fat that could be rendered and stored. This caribou fat was about 50% saturated. These are more modern animals, but they're still wild, and I don't see how the large animals being consumed by Grok would have inexplicably been low in saturated fat.

Cordain himself allows that most (73%) pre-agrarian hunter-gatherers got more than [50% of their calories from animal foods](#) (with some going as high as 70%), and he figures that wild African ruminant fatty acid composition (a basic model for Grok's game) was [similar to that of pasture-raised cattle](#). I eat a lot of [100% grass-fed steak](#), and I will tell you: there is a fair amount of fat on certain cuts, including organs. It's leaner than grain-fed, but not by much. Plus, when you consider that hunter-gatherers (Grok and modern alike) use the entire animal, especially the fatty organs, it becomes clear that saturated fat was consumed in relatively

large amounts by many groups of paleo-era humans. Maybe not all of them, but it certainly wasn't unheard of.

The justification for the anti-saturated fat campaign that has raged on for half a century is largely baseless. Even if saturated fat does increase (large, fluffy) LDL, it increases protective HDL right along with it, and cardiovascular mortality has never been explicitly demonstrated to increase with saturated fat intake. Several studies have been attempted and – though their results were inconclusive – supporters repeatedly cite them as evidence for the connection. The Finnish Mental Hospital study, which the saturated fat critics tend to hang their hats on, has been [discredited for its poor control](#). Most analysis of the Lyon Diet Heart study focuses on the low levels of saturated fat, while the [real benefits came from an improved Omega-6/Omega-3 ratio](#). If you're interested in more breakdowns of the saturated fat studies, just visit [Whole Health Source](#) (or [Hyperlipid](#), or [Free the Animal](#), or any of the many [Primal friendly blogs](#) on the interwebs). One of the most important things we can do is band together to undermine the dangerous, counterproductive CW. We may have truth and science on our side, but – as the past hundred years of nutrition research have shown – it isn't always enough.