**No Evidence to Support Dietary Fat Recommendations, Meta-Analysis Finds**

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LANARKSHIRE, SCOTLAND and KANSAS CITY, MO — Did the national dietary guidelines overreach when they recommended cutting dietary fat consumption to less than 30% and saturated-fat intake to less than 10% of daily energy intake? A new review suggests they did, with investigators reporting that not a single randomized, controlled clinical trial backed the advice when the recommendations were issued in 1977 in the US and in 1983 in the UK[1].

Given the absence of evidence, the investigators say their review concludes that the present dietary advice, which currently recommends Americans keep saturated fat to 5% to 6% of daily calories, needs more than an overhaul. In fact, they believe the dietary fat recommendations should never have been introduced in the first place.

"When you tell people to lower saturated fat—protein typically stays the same, we get about 15% to 20% of our calories from protein—they inherently increase the consumption of unsaturated fats, particularly the omega-6 fats found in vegetable oils, and carbohydrates," senior investigator Dr James DiNicolantonio (St Luke's Mid America Heart Institute, Kansas City, MO) told [**heart*wire***](http://www.medscape.com/cardiology/news) . Such a substitution, he said, ends up doing more harm than good.

The bottom line, said DiNicolantonio, is that instead of arbitrarily focusing on limiting one macronutrient perceived to increase the risk of heart disease, individuals should simply "eat real food."

"The meta-analysis wasn't necessarily testing that, but a lot of the trials were focused on simply restricting animal fat, and some recommended lowering saturated fat, but what ends up happening is that individuals replace it with a vegetable oil," he said. "We don't have the trials replacing processed foods with whole foods, but that's the message. If you give the general recommendation that's in the guidelines—lower saturated fat—a lot of times that can lead to unintended consequences that are worse."

In an editorial[2], Dr Rahul Bahl (Royal Berkshire NHS Foundation Trust, Reading, UK) said the negative result of the meta-analysis is "unsurprising," as numerous reviews of cohort studies have reached similar conclusions.

While there are disagreements in the interpretation of these data, "there remain reasons to postulate a causal connection between fat consumption and coronary heart disease," he writes. Even with a causal connection, randomized controlled trials with dietary interventions are challenging because human behavior must be altered for long periods of time.

"This does not mean that the risk factor addressed is not a risk factor," argues Bahl.

**No Data to Support Recommendations**

In 1977, the US Select Committee on Nutrition and Human Needs recommended that Americans limit overall fat intake to less than 30% of their daily calories and to limit saturated fat to less than 10% of daily energy intake. The UK National Advisory Committee on Nutritional Education made the same recommendations in 1983.

In the meta-analysis, which was led by Dr Zoë Harcombe (University of the West of Scotland, Lanarkshire), the researchers reviewed six studies available to the dietary committees prior to publishing their recommendations. The studies, including the [Oslo Diet Heart Study](http://www.trialresultscenter.org/study2603-Oslo-Diet-Heart-Study-%28Leren%29.htm), the [Sydney Diet Heart Study](https://www.clinicaltrials.gov/ct2/show/NCT01621087?term=Sydney+Diet+Heart+Study&rank=1), and the [Los Angeles Veterans Study](http://circ.ahajournals.org/content/40/1S2/II-1), among others, included 2467 males participating in five secondary-prevention studies and one primary-prevention trial. During the course of these randomized, controlled trials, there were 740 deaths and 423 deaths from coronary heart disease.

Five of the six studies did not test limiting total-fat consumption to less than 30% or limiting saturated-fat consumption to less than 10% of energy intake. Instead, these studies tested the administration of vegetable oil, replacing saturated fats with vegetable oil, and consuming a diet with approximately 20% of calories from fat. One study tested effects of limiting saturated-fat intake to 10%.

The meta-analysis showed no effect of the dietary interventions on all-cause mortality or any effect on cardiac mortality despite a significant reduction in serum cholesterol levels in the intervention arm. In fact, the number of deaths in the intervention and control arms were equal, with 370 deaths in both arms.

"The study attacks two dietary dogmas," DiNicolantonio told **heartwire** . "One that sets up saturated fat as a bogeyman when it is not. And the second is that lowering cholesterol by any means, especially by a dietary intervention that lowers saturated fat, is going to lead to a reduction in hard end points, which we did not observe."

DiNicolantonio said critics of the analysis have pointed to the existence of epidemiological data supporting the dietary recommendations. However, he noted a 2010 meta-analysis of 21 prospective cohort studies, which included more than 347 000 subjects, found no significant evidence for concluding that dietary saturated fat was linked with a risk of coronary heart disease or cardiovascular disease.

The American Heart Association (AHA) currently recommends individuals limit saturated fat consumption to 5% to 6% of daily calories. For this, DiNicolantonio expresses some confusion. "What's going on here? They're arbitrarily selecting these numbers," he said. "There's no good evidence supporting 10%, and there's clearly no evidence to recommend 5% to 6%."

DiNicolantonio concedes there are nuances to interpreting the results of the study and is not recommending that society return to eating all the butter and red meat desired. "Really, the main message is to eat whole foods and stop taking on a single macronutrient, especially one that comes from a whole food," he said.

In the editorial, Bahl agrees, "There is certainly a strong argument that an overreliance in public health on saturated fat as the main dietary villain for cardiovascular disease has distracted from the risks posed by other nutrients such as carbohydrates," he writes.

**The AHA Recommendations**

Speaking with **heartwire** , Dr Alice Lichtenstein (Tufts University, Boston, MA), a spokesperson for the AHA, said its recommendations, as well as others, such as the [2010 Dietary Guidelines for Americans](http://www.cnpp.usda.gov/sites/default/files/dietary_guidelines_for_americans/PolicyDoc.pdf), no longer recommend individuals consume a low-fat diet. Instead, they recommend a moderate amount of fat intake, with approximately 25% to 35% of calories coming from fat. The 2010 Dietary Guidelines for Americans recommends individuals consume less than 10 percent of calories from saturated fatty acids (and to replace these fats with monounsaturated and polyunsaturated fatty acids).

As the researchers point out, Lichtenstein said the reason for the change was that people were substituting simple, refined carbohydrates for fat, which in turn led to dyslipidemia, an increase in triglyceride levels, and a reduction in HDL cholesterol. "One of the reasons the guidelines are reviewed on a regular basis is because as new science emerges you'll need to modify the recommendations," she told **heartwire** . "No one is recommending low-fat diets anymore that I'm aware of."

The connection between lower levels of [saturated fat and reduced cardiovascular disease was also recently challenged](http://www.medscape.com/viewarticle/822092) in a meta-analysis conducted by Dr Rajiv Chowdhury (University of Cambridge, UK), noted Lichtenstein. The issue again, however, is one of substitution.

"If the saturated fat is lowered by replacing the calories with carbohydrates, you're not going to see a benefit," she said. "If the saturated fat is replaced with polyunsaturated fat, there are numerous studies showing there is a clear advantage in terms of cardiovascular disease risk. . . . There are different biological effects depending what you replace the saturated fat with."

Lichtenstein said Americans are very confused about dietary advice, and she's not sure a recommendation to simply eat real food is the best advice. "People ate more real food, as opposed to processed food, in the 1960s, and we had the highest rates of cardiovascular disease then. We also had high rates of saturated-fat intake. Real food can be butter, cream, and cheese, and very fatty meats."

The [2006 AHA dietary recommendations](http://circ.ahajournals.org/content/114/1/82.full), authored by Lichtenstein, [as well as the 2013 update](http://circ.ahajournals.org/content/early/2013/11/11/01.cir.0000437740.48606.d1.full.pdf), emphasize a dietary pattern rather than focusing on individual foods. While advice to eat more real food is a start, there needs to be some direction as to what constitutes a healthy food choice, such as a diet rich in fruits, vegetables, whole grains, fish, legumes, and low-fat dairy.

"There needs to be specificity as to what those food-based recommendations are," said Lichtenstein, "and I think that's what the guidelines are doing."

In just a couple of weeks, the Dietary Guidelines Advisory Committee will finalize and publish its 2015 Dietary Guidelines for Americans and big changes are expected. According to a [report in the Washington Post](http://www.washingtonpost.com/blogs/wonkblog/wp/2015/02/10/feds-poised-to-withdraw-longstanding-warnings-about-dietary-cholesterol/?postshare=7821423590122150) , the committee will no longer recommend curbing intake of dietary cholesterol, a change that constitutes a major shift in advice. As the Post notes, reducing dietary cholesterol has been a mainstay of recommendations since 1961, but the advisory committee believes it is no longer a "nutrient of concern" to the American public.

Whether those guidelines will recommend specific thresholds for dietary saturated fat intake is not yet known.

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