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DEVIL IN THE DIET

BY ANDRÉA MARIA CECIL

“Fear thee not fat.
Sugar is evil.”

“Fat is the devil. Have a
Coke and a smile.”





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In 1972, John Yudkin literally wrote the book on sugar: "Pure, White and Deadly." Ancel Keys, on the other hand, suggested fat was to blame for cardiovascular disease.

In the 1800s, Sylvester Graham scornfully wrote of fatty meats' driving sexual desire. His cure: whole wheat.

Later in the century, John Harvey Kellogg, a Graham follower, espoused the same wisdom, adding that too much lard would cause bowel backup. His solution: vegetarianism.

This way of eating, both men argued, was also a way to avoid disease and prolong life.

But our disdain for dietary fat started much earlier than the 19th century—years before either man created his intentionally bland recipe for Graham crackers or Kellogg's cornflakes.

Lipophobia

The diets of most native peoples the world over—from the aboriginals in Canada to the Maasai in East Africa—have been characterized by animal fat. Some indigenous groups have regularly drunk animal blood for dietary sodium. From this act was born the derogatory term "bloodthirsty savages."

"Civilized people" did no such things, said Dr. Steve Phinney, a physician scientist who has spent more than three decades studying diet, exercise, fatty acids and inflammation. "Civilized people" ate bread and other agriculture products.

"It was a cultural differentiation that probably wasn't spoken but it just kind of was there. It made it easier to vilify fat than to vilify corn or soybeans or potatoes," he explained.

But perhaps the single most effective affront to dietary fat was a man named Ancel Keys. Beginning in the 1940s, the University of Minnesota physiologist began correlating dietary fat with cardiovascular disease. He was an opponent of fat and a proponent of sugar.

At the time, Keys was the country's most influential nutrition scientist. And his reach was international. He was the man after whom **K-rations** were named, being their creator, and he was known as bold and brash to the point of arrogance, as described in Nina Teicholz's book "The Big Fat Surprise." His influence on nutrition, she wrote, was "unparalleled."

In his so-called Seven Countries Study, which he began in 1958, Keys found an association between fat and saturated-fat intake and heart-disease mortality. This finding made him a savior to an American public living in fear of heart disease, which medical professionals of the time had been billing as an inevitable fate.

Standing on the other side of that argument was John Yudkin, a physiologist at Queen Elizabeth College in London, England. He was internationally known as a purveyor of a low-carbohydrate diet and **repeatedly warned** that excessive consumption of added sugar—not dietary fat—was toxic.

In the first chapter of his 1972 book “Pure, White and Deadly,” Yudkin wrote, “I hope that when you have read this book I shall have convinced you that sugar is really dangerous.”

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—John Yudkin,

“Pure, White and Deadly,” 1972

The two men became rivals, and Keys was sharp in his continual criticism of Yudkin’s findings.

“It is clear that Yudkin has no theoretical basis or experimental evidence to support his claim for a major influence of dietary sucrose in the etiology of (coronary heart disease); his claim that men who have CHD are excessive sugar eaters is nowhere confirmed but is disproved by many studies superior in methodology and/or magnitude to his own; and his ‘evidence’ from population statistics and time trends will not bear up under the most elementary critical examination. But the propaganda keeps on reverberating,” Keys wrote in **“Sucrose in the Diet and Coronary Heart Disease,”** published in *Atherosclerosis* in 1971.

Keys was successful in his efforts to discredit Yudkin. By the time Yudkin died in 1995, his sugar warnings had fallen on deaf ears.

In recent years, however, Keys’ reputation has unraveled.

He has come to be known as a scientific fraud, as outlined in the documentary film **“Sugar Coated.”**

Not only was Keys’ collegiate laboratory funded by the sugar industry for decades but he also conveniently omitted data that would have disapproved his theory that dietary fat caused heart disease and that sugar had no role in metabolic derangement. He ignored other nutrients people were eating and used tiny samples to prove his hypothesis. Had his Seven Countries Study included 21 additional countries, **two scientists later noted**, the association between fat and saturated-fat intake and heart-disease mortality would be weak and “a similar association could be advanced between animal protein intake and heart disease.”

But in 1961, Keys was nutrition lord.

That year, he graced the cover of **Time magazine**, and the American Heart Association Report **advised** Americans to “reduce intake of total fat, saturated fat and cholesterol. Increase intake of polyunsaturated fat.”

The guidance continued for decades and Americans dutifully adhered. In turn, their waistlines grew and their medications multiplied. The culprit, you see, wasn’t just the lack of fat but the type of food that replaced it.

“Diet is a trade-off,” said Gary Taubes, investigative journalist and best-selling author of “Good Calories, Bad Calories” and “Why We Get Fat.”

If you eat less of one type of food, you need to eat more of something else if you’re keeping calories constant, he explained.

“Protein tends to stay pretty much fixed in a Western diet (and) protein typically comes with fat attached to it,” Taubes said. “So if you want to restrict fat, you end up trading it off with carbohydrates in practice.”

He added: “When we targeted dietary fat, the effect of that, perhaps the unintended consequence ... is to jack up the carbohydrates.”

By the 1980s, carbohydrates were considered heart healthy and sugar relatively harmless.

“We based all of those decisions back in the ‘70s ... on correlative science,” said Dr. Robert Lustig, a pediatric endocrinologist of 32



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At the height of the fat-free craze, people did not discriminate: Even healthy fats were often avoided.

years at the University of California-San Francisco. “And correlation is not causation. I am a great believer in that you have to have causation in order to do something.”

Defining Fat

Compounding the problem is the fact that there are multiple types of dietary fat. Seven, specifically. And they aren’t created equal.

“There is not one thing called ‘dietary fat,’” Lustig explained.

From best to worst, they are: omega-3, monounsaturated, polyunsaturated, saturated, medium chain, omega-6 and trans fat. Generally speaking, the healthiest fats are those from plants and animals, while the unhealthiest are those created during the food-manufacturing process.

Omega-3 fats can be found in wild fish and algae, while monounsaturated fats can be found in olive oil, avocado and some nuts. Polyunsaturated fats are also present in nuts, as well as in seeds and fish. Saturated fats are part of foods such as fatty meats, butter, cheese and cream. Medium-chain fats are man-made by processing coconut and palm-kernel oils. Corn oil, safflower oil and soybean oil are some examples of omega-6 fats.

And finally, artificial trans fats are those created by industrial-food producers; one example is partially hydrogenated oil that can be found in margarine and shortening.

“In 1977, we didn’t know any of this,” Lustig said.

That year, the U.S. Senate Select Committee’s **Dietary Goals for the United States** advised Americans increase carbohydrate consumption to account for about 55 to 60 percent of energy intake and reduce overall fat consumption to 30 percent of energy intake. It also said saturated fat should account for about 10 percent of total energy intake and recommended that consumption be balanced with polyunsaturated and monounsaturated fat, which should each account for 10 percent of energy intake.

“So when we threw out dietary fat, we may have thrown the baby out with the bath water,” Lustig said.

And when manufacturers removed fat from food, it became bland. To make it taste good again, they devised a simple solution to keep consumers buying.

“The flavor was in the fat,” Lustig said. “So what did we do? We added sugar.”

Added sugar can be found in nearly every processed food imaginable—bread, ketchup, yogurt, meat and salad dressing are a few examples. And it goes by a plethora of names, including cane sugar, high-fructose corn syrup, honey, fructose, sucrose, glucose, agave, molasses and fruit-juice concentrate.

That ubiquity has contributed to Americans' sugar consumption.

While the World Health Organization **recommends** no more than 6 teaspoons of added sugar a day for normal-weight adults, the average American **consumes** 19.5 teaspoons every day.

“So in essence,” Lustig said, “it wasn't the vilification of fat but what we substituted it with.”

He continued: “I would argue that for sugar we already have causation. I can make a very, very strong case that we have causation. And we never had causation for fat.”

Yudkin would have agreed. He reached the same conclusion nearly 60 years earlier.

Unintended Consequences

For more than half a century, federal guidelines have pointed Americans to a low-fat, high-carb diet in the interest of saving them from pain, suffering and early demise.

The result was anything but: **earlier death and later years spent languishing with disease**. Americans became sicker than residents of poorer countries—such as South Korea, Slovenia and Portugal—that spend far less on health care.

Jennifer Poli/CrossFit Journal



With flavorful fat cut from products supposedly to improve health, many manufacturers turned to sugar to improve taste. The results have been disastrous.

Now the United States is in the throes of two epidemics: obesity and diabetes.

More than one-third of U.S. adults and 17 percent of youth were **obese** in 2011-2012, according to The Journal of the American Medical Association. Meanwhile, half of U.S. adults had **diabetes or prediabetes** in 2012, the journal found. America spent \$245 billion on diagnosed diabetes in 2012, **according to the American Diabetes Association**. Of that, \$176 billion was in direct medical costs and \$69 billion was in reduced productivity.

Today, diabetics in the U.S. number about 24 million. That number could grow to anywhere from 76 million to 100 million by the year 2050, according to a 2010 report published by **Population Health Metrics**.

“In simple terms, this fat phobia that's been created by (federal) guidelines and health organizations who have embraced these guidelines (has) backfired as people have tried to replace fat with carbohydrates, especially sugars and starches. So we're over-consuming carbohydrates relative to our tolerance,” explained Jeff Volek, kinesiology professor in the Department of Human Sciences at The Ohio State University.

Volek focuses on the clinical application of ketogenic diets, including the management of insulin resistance and Type 2 diabetes, as well as athletic performance and recovery. With Phinney, Volek co-authored “The New Atkins for a New You,” “The Art and Science of Low Carbohydrate Living” and “The Art and Science of Low Carbohydrate Performance.”

“The average person is now metabolically ill,” Volek continued. “It's just unbelievable that that's where we're at. And it's getting worse. We're definitely not plateauing or going in the other direction.”

Fixing Broke

The solution, Lustig said, is simple.

“Processed food is the problem. There's one diet that always works: It's real food.”

Real food is whole, clean, unprocessed fare rich in nutrients, high in fiber and free of additives, according to the **Institute for Responsible Nutrition**, an organization of which Lustig is one of the founders and board president. That includes produce, meat and dairy—the food found at a grocery store's perimeter.

But Taubes sees potential problems with how people might interpret the directive “eat real food.”

Fresh-fruit smoothies, for example, are real food, he noted, but provide an unusually high serving of fructose that the body rapidly ingests because it's liquid. That, in turn, overwhelms the pancreas and leads to body-fat accumulation.

“In an ideal world we get back to the place where the food environment is such that the choices you're making from birth onward don't predispose you to obesity and you can eat what's around you and you can remain healthy and lean,” Taubes said.

How to get there he said he doesn't know.

Jean-Marc Schwarz, a professor and researcher in the College of Osteopathic Medicine at Touro University in California, said more research needs to be done on nutrition because scientists have provided the public with confusing and contradictory messages for centuries.

“I wish that people would value the capacity of prevention, of having a good lifestyle and of nutrition, and for that we need to have good science associated with this.” ■

About the Author

Andréa Maria Cecil is assistant managing editor and head writer of the CrossFit Journal.

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