

# Are Seed Oils Behind the Majority of Diseases This Century?

Analysis by [Dr. Joseph Mercola](#) ✓ Fact Checked

## STORY AT-A-GLANCE

- › Ophthalmologist Dr. Chris Knobbe says most chronic diseases such as heart disease, cancer, high blood pressure, stroke, diabetes, obesity, metabolic syndrome, Alzheimer's disease and macular degeneration are linked to the consumption of processed seed oils
- › Knobbe says the large consumption of omega-6 seed oil in everyday Western diets is so dangerous it is "a global human experiment ... without informed consent"
- › Polyunsaturated fatty acids, also called PUFAs, found in vegetable oils, edible oils, seed oils, trans fat and plant oils, owe their existence to "roller mill technology," which replaced stone mill technology and removed their nutrients
- › Many people now consume 80 grams of PUFAs a day, which amounts to 720 calories and one-third of their caloric intake
- › Results from studies of tribal peoples and animals have demonstrated the deleterious effects of PUFAs in the diet

What do heart disease, cancer, high blood pressure, stroke, diabetes, obesity, metabolic syndrome, Alzheimer's disease, macular degeneration and other chronic health conditions of modern society have in common? They all have increased by shocking amounts in the last decades. And, they are all linked to the consumption of seed oils.

In a recent speech at the Sheraton Denver Downtown Hotel, titled "Diseases of Civilization: Are Seed Oil Excesses the Unifying Mechanism?," Dr. Chris Knobbe reveals startling evidence that seed oils, so prevalent in modern diets, are the reason for most of today's chronic diseases.<sup>1</sup>

Knobbe, an ophthalmologist, is the founder of the nonprofit Cure AMD Foundation, dedicated to the prevention of vision loss from age-related macular degeneration (AMD).<sup>2</sup> He is a former associate clinical professor emeritus of the University of Texas Southwestern Medical Center.<sup>3</sup>

His research indicts the high consumption of omega-6 seed oil in everyday diets as the major unifying driver of the chronic degenerative diseases of modern civilization. He calls the inundation of Western diets with harmful seeds oils "a global human experiment ... without informed consent."

## The Rise of Polyunsaturated Fatty Acids (PUFAs)

Trans fats and polyunsaturated fatty acids, also called PUFAs, found in vegetable oils, edible oils, seed oils and plant oils, are a fairly recent invention and include **cottonseed**, rapeseed, sunflower, **safflower**, rice bran, **soybean**, corn and other popular oils. PUFAs owe their existence to "roller mill technology," which around 1880 replaced stone mill technology that was used to grind wheat into flour.<sup>4</sup>

Roller mill technology facilitated the entire removal of the bran and the germ of a grain, leaving only the endosperm, a refined product with its nutrients removed.<sup>5</sup> According to Knobbe, writing on the Cure AMD Foundation website:<sup>6</sup>

*"The first of these [PUFAs] was cottonseed oil. This was soon followed by the hydrogenation and partial hydrogenation of cottonseed oil, producing the first ever artificially created trans-fat. The latter was introduced by Proctor & Gamble in 1911 under the name 'Crisco,' which was marketed as 'the healthier alternative to lard ... and more economical than butter.'"*

Crisco, the grandfather of commercially produced PUFAs or **trans fats**, is still widely sold today. The plan of vegetable oil producers, says Knobbe, was to undersell and therefore replace animal fats, which were priced higher.<sup>7</sup> The plan was successful.

PUFAs became so popular that they now make up 63% of the American diet, form the basis of USDA food recommendations and are found in 600,000 processed foods sold in

the U.S. today.<sup>8</sup> In 1909, Americans ate 2 grams a day of vegetable oil, says Knobbe, and by 2010 they were eating an astounding 80 grams of vegetable oil a day.<sup>9</sup>

There are several reasons PUFAs are harmful, says Knobbe. Unlike animal fats, they lack vitamins A, D and K, so they are nutrient deficient. They contribute to most of the chronic diseases associated with modern civilization. And PUFAs also contribute to the epidemic of obesity. The 80 grams of PUFAs a day that Americans are now consuming amount to 720 calories, says Knobbe, which means that one-third of most people's calories are "coming out of factories."<sup>10</sup>

## Chronic Diseases Rose With PUFAs

Many people are aware that diabetes, obesity, cancer, heart disease, metabolic syndrome and other conditions were less common in the first part of the 20th century than they are today. But the rise in the incidence of these conditions is more dramatic than many realize. According to Knobbe:<sup>11</sup>

- In 1900, 12.5% percent of the U.S. population died of heart-related disease; in 2010, that figure was 32%
- In 1811, 1 person in 118 died of cancer; in 2010, 1 in 3 died of cancer
- In 80 years, the incidence of Type 2 diabetes has increased 25-fold
- In the 19th century, 1.2% of Americans were obese; in 2015, 39.8% were obese
- In 1930, there were no more than 50 cases of macular degeneration; in 2020, there are 196 million cases

Are the rises in these chronic conditions correlated with the rise in the dietary consumption of PUFAs? Absolutely, says Knobbe in his lecture. He gives the following explanation:<sup>12</sup>

*"These disorders from heart disease to atherosclerosis to type-2 diabetes to macular degeneration and cancer all have the same thing. They all have mitochondrial dysfunction ...The very first thing that happens when the electron*

*transport chain fails ... is that it starts shooting out reactive oxygen species – these are hydroxyl radicals and superoxide ...*

*These free radicals lead to nuclear mitochondrial DNA mutations ... which contribute to heart failure ... macular degeneration, Alzheimer's Parkinson's ... a catastrophic lipid peroxidation cascade [that] leads to toxic aldehydes."*

At the root of the harmful biochemical reactions enacted by seed oils is linoleic acid, says Knobbe, which is an 18-carbon omega-6 fat. Linoleic acid is the primary fatty acid found in PUFAs and accounts for about 80% of total vegetable oils. Omega-6 fats must be balanced with omega-3 fats in order not to be harmful.

"Most of this linoleic acid, when it oxidizes, it develops lipid hydroperoxides and then these rapidly degenerate into ... oxidized linoleic acid metabolites," says Knobbe.<sup>13</sup>

The oxidized linoleic acid metabolites are a perfect storm. They are cytotoxic, genotoxic, mutagenic, carcinogenic, atherogenic and thrombogenic, says Knobbe. Their atherosclerosis and thrombogenic actions are especially concerning because they can produce strokes and clots.

## **PUFAs Create Insulin Resistance**

Diabetes, **insulin resistance** and metabolic syndrome have become epidemic since the U.S. diet has been based on PUFAs. It is estimated that nearly 70% of Americans are now **overweight** or obese and a substantial amount are metabolically unhealthy.<sup>14</sup>

This puts people at risk for Type 2 diabetes as well as the many chronic diseases associated with insulin resistance, from cancer to Alzheimer's disease. In his lecture, Knobbe explains how these conditions develop:<sup>15</sup>

*"When you consume omega-6 to excess ... it combines with reactive oxygen species like hydroxyl radicals ... so this begins catastrophic lipid peroxidation cascade – these polyunsaturated fats are accumulating [in] your cells,*

*accumulate in your membranes, accumulate in your mitochondria and they cause a peroxidation reaction."*

Because there's so many reactive oxygen species it leads to developing insulin resistance at the cellular level and the production of lipid droplets in your liver, continues Knobbe:

*" ... that creates a catastrophic lipid part or it feeds back to the lipid peroxidation ... so now you're not burning fat for fuel properly so the person gaining weight and getting sick in this regard is now carb dependent – their glycolysis is working but ... [they] start storing the fat ... so this leads to obesity."*

Linoleic acid is especially a culprit in this harmful process, agrees Dr. Paul Saladino, a physician journalist, in a podcast. Linoleic acid "breaks the sensitivity for insulin at the level of your fat cells" – it makes them more insulin sensitive – and, since your fat cells control the insulin sensitivity of the rest of your body by releasing free fatty acids, you end up with insulin resistance.

## **Rat Studies and Indigenous People Show PUFA Harm**

Animal studies have dramatically demonstrated the deleterious effects of PUFAs. In one study Knobbe cites, two sets of rats were put on identical diets except one group received 5% cottonseed oil and the other received 1.5% butterfat.<sup>16</sup> The result of the study was that:<sup>17</sup>

*" ... the rats on the cottonseed oil grow to sixty percent of normal size and live[d] 555 days on average; they're, weak, fragile, sickly little rats. The rats on the butterfat they are healthy; they grow to normal size and they live 1020 days so they grow to almost twice the size [of the cottonseed oil-fed rats], live twice as long and are infinitely more healthy."*

While it's suggested that the American Heart Association and other medical groups might discount such studies, potentially calling them paradoxical, there are also

examples of the positive effects from saturated and animal-based fats upon human health, says Knobbe.

For example, the Tokelau people who live on islands in the South Pacific between Hawaii and Australia eat a diet almost exclusively of coconut, fish, starchy tubers and fruit.<sup>18</sup> Between 54% and 62% of their calories come from coconut oil, which contains saturated fat, Knobbe points out.

Nevertheless, a study of Tokelau men between 40 and 69 years found that they had no heart attacks, no obesity and no diabetes.<sup>19</sup> They were "fantastically healthy," says Knobbe.

Whether we're talking about animal studies or studies of non-Westernized people, at least 80% of obesity and chronic diseases in Westernized countries come from processed foods, Knobbe concludes. "It is driven by vegetable oils and trans-fats ... fast food restaurants almost all cook in soybean oil and canola oil."

## Other Experts Agree With Knobbe

In a previous newsletter with the Saldino podcast mentioned above, I discussed how Saladino and journalist Nina Teicholz decry the popularity and ubiquity of [PUFAs in the modern food system](#) and believe in the healthful benefits of saturated fat.

In the podcast, Saladino and Teicholz review the history of the demonization of saturated fat and cholesterol, which began, they say, with the flawed hypothesis in 1960 to 1961 that saturated fat causes heart disease.

The hypothesis was buttressed by the first Dietary Guidelines for Americans, introduced in 1980, which told people to limit their saturated fat and cholesterol, all the while exonerating carbs, which were increasingly made with PUFAs. It should be no surprise that the hypothesis and dietary guidelines were linked to a rapid rise in obesity and chronic diseases such as heart disease.

In the podcast, Saladino and Teicholz discuss the reasons why this myth has been allowed to persist, despite the scientific evidence against it.

If saturated animal fats were acknowledged to be healthy and **processed industrial vegetable oils** and grains were exposed as unhealthy, it would decimate the major processed food and fast food industries, which rely on vegetable oils and grains. Moreover, statin sales and other Big Pharma profit areas would suffer. Big Food and Big Pharma have financial motives for keeping the health benefits of real food hidden.

Like Knobbe, the experts are convinced that the massive increase in linoleic acid consumption because of its ubiquity in industrial vegetable oils and processed foods is a key metabolic driver of obesity, heart disease, cancer and other chronic disease.

They stress that the belief that high low-density lipoproteins (LDL) – the so-called "bad" cholesterol – are a risk factor for heart disease and that by lowering your LDL you lower your risk of a heart attack, is incorrect. The science simply doesn't bear this out, they say. The reason for this is because not all LDL particles are the same.

Cutting down on red meat and saturated fat and eating more vegetable oil may cause LDL to go down, Saladino explains, but those LDLs will not be oxidized. It is the effect of LDL oxidation that triggers insulin resistance and related problems, including heart disease – something the LDL tests don't detect.

Eating saturated fat, on the other hand, may raise your LDL, but those LDL particles will be large and fluffy and do not cause arterial damage, says Saladino.

The take-home message from both doctors Knobbe and Saladino is that seed oils are responsible for the vast majority of modern diseases and the best thing you can do for your health is renounce them.