

# The Truth About Saturated Fat

Part 1 of 3

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Fats from animal and vegetable sources provide a concentrated source of energy in the diet; they also provide the building blocks for cell membranes and a variety of hormones and hormonelike substances. Fats as part of a meal slow down absorption so that we can go longer without feeling hungry. In addition, they act as carriers for important fat-soluble vitamins A, D, E and K. Dietary fats are needed for the conversion of carotene to vitamin A, for mineral absorption and for a host of other processes.

Politically Correct Nutrition is based on the assumption that we should reduce our intake of fats, particularly saturated fats from animal sources. Fats from animal sources also contain cholesterol, presented as the twin villain of the civilized diet.

## The Lipid Hypothesis

The theory-called the lipid hypothesis-that there is a direct relationship between the amount of saturated fat and cholesterol in the diet and the incidence of coronary heart disease was proposed by a researcher named Ancel Keys in the late 1950's. Numerous subsequent studies have questioned his data and conclusions. Nevertheless, Keys' articles received far more publicity than those presenting alternate views.

The vegetable oil and food processing industries, the main beneficiaries of any research that found fault with competing traditional foods, began promoting and funding further research designed to support the lipid hypothesis.

The most well-known advocate of the lowfat diet was Nathan Pritikin. Actually, Pritikin advocated elimination of sugar, white flour and all processed foods from the diet and recommended the use of fresh raw foods, whole grains and a strenuous exercise program; but it was the lowfat aspects of his regime that received the most attention in the media. Adherents found that they lost weight and that their blood cholesterol levels and blood pressure declined.

The success of the Pritikin diet was probably due to a number of factors having nothing to do with reduction in dietary fat-weight loss alone, for example, will precipitate a reduction in blood cholesterol levels-but Pritikin soon found that the fat-free diet presented many problems, not the least of which was the fact that people just could not stay on it. Those who possessed enough will power to remain fat-free for any length of time developed a variety of health problems including low energy, difficulty in concentration, depression, weight gain and mineral deficiencies.<sup>1</sup>

Pritikin may have saved himself from heart disease but his lowfat diet did not spare him from cancer. He died, in the prime of life, of suicide when he realized that his Spartan regime was not curing his leukemia. We shouldn't have to die of either heart disease or cancer-or consume a diet that makes us depressed.

When problems with the no-fat regime became apparent, Pritikin introduced a small amount of fat from vegetable sources into his diet-something like 10% of the total caloric intake. Today the Diet Dictocrats advise us to limit fats to 25-30% of the caloric intake, which is about 2 1/2 ounces or 5

tablespoons per day for a diet of 2400 calories. A careful reckoning of fat intake and avoidance of animal fats, they say, is the key to perfect health.

## **The "Evidence" Supporting The Lipid Hypothesis**

These "experts" assure us that the lipid hypothesis is backed by incontrovertible scientific proof. Most people would be surprised to learn that there is, in fact, very little evidence to support the contention that a diet low in cholesterol and saturated fat actually reduces death from heart disease or in any way increases one's life span. Consider the following:

Before 1920 coronary heart disease was rare in America; so rare that when a young internist named Paul Dudley White introduced the German electrocardiograph to his colleagues at Harvard University, they advised him to concentrate on a more profitable branch of medicine.

The new machine revealed the presence of arterial blockages, thus permitting early diagnosis of coronary heart disease. But in those days clogged arteries were a medical rarity, and White had to search for patients who could benefit from his new technology. During the next forty years, however, the incidence of coronary heart disease rose dramatically, so much so that by the mid fifties heart disease was the leading cause of death among Americans.

Today heart disease causes at least 40% of all US deaths. If, as we have been told, heart disease results from the consumption of saturated fats, one would expect to find a corresponding increase in animal fat in the American diet. Actually, the reverse is true. During the sixty-year period from 1910 to 1970, the proportion of traditional animal fat in the American diet declined from 83% to 62%, and butter consumption plummeted from eighteen pounds per person per year to four.

During the past eighty years, dietary cholesterol intake has increased only 1%. During the same period the percentage of dietary vegetable oils in the form of margarine, shortening and refined oils increased about 400% while the consumption of sugar and processed foods increased about 60%.<sup>2</sup>

The Framingham Heart Study is often cited as proof of the lipid hypothesis. This study began in 1948 and involved some 6,000 people from the town of Framingham, Massachusetts. Two groups were compared at five-year intervals-those who consumed little cholesterol and saturated fat and those who consumed large amounts. After 40 years, the director of this study had to admit:

**"In Framingham, Mass, the more saturated fat one ate, the more cholesterol one ate, the more calories one ate, the lower the person's serum cholesterol. . .**

We found that the people who ate the most cholesterol, ate the most saturated fat, ate the most calories, weighed the least and were the most physically active."<sup>3</sup> The study did show that those who weighed more and had abnormally high blood cholesterol levels were slightly more at risk for future heart disease; but weight gain and cholesterol levels had an inverse correlation with fat and cholesterol intake in the diet.<sup>4</sup>

In a multi-year British study involving several thousand men, half were asked to reduce saturated fat and cholesterol in their diets, to stop smoking and to increase the amounts of unsaturated oils such as margarine and vegetable oils.

After one year, those on the "good" diet had 100% more deaths than those on the "bad" diet, in spite of the fact that those men on the "bad" diet continued to smoke! But in describing the study,

the author ignored these results in favor of the politically correct conclusion: "The implication for public health policy in the U.K. is that a preventive program such as we evaluated in this trial is probably effective. . . ."5

The U.S. Multiple Risk Factor Intervention Trial, (MRFIT) sponsored by the National Heart, Lung and Blood Institute, compared mortality rates and eating habits of over 12,000 men. Those with "good" dietary habits (reduced saturated fat and cholesterol, reduced smoking, etc.) showed a marginal reduction in total coronary heart disease, but their overall mortality from all causes was higher.

Similar results have been obtained in several other studies. The few studies that indicate a correlation between fat reduction and a decrease in coronary heart disease mortality also document a concurrent increase in deaths from cancer, brain hemorrhage, suicide and violent death.<sup>6</sup>

The Lipid Research Clinics Coronary Primary Prevention Trial (LRC-CPPT), which cost 150 million dollars, is the study most often cited by the experts to justify lowfat diets. Actually, dietary cholesterol and saturated fat were not tested in this study as all subjects were given a low-cholesterol, low-saturated-fat diet.

Instead, the study tested the effects of a cholesterol-lowering drug. Their statistical analysis of the results implied a 24% reduction in the rate of coronary heart disease in the group taking the drug compared with the placebo group; however, nonheart disease deaths in the drug group increased—deaths from cancer, stroke, violence and suicide.<sup>7</sup>

Even the conclusion that lowering cholesterol reduces heart disease is suspect.

Independent researchers who tabulated the results of this study found no significant statistical difference in coronary heart disease death rates between the two groups.<sup>8</sup> However, both the popular press and medical journals touted the LRC-CPPT as the long-sought proof that animal fats are the cause of heart disease, America's number one killer.

## **Studies That Challenge The Lipid Hypothesis**

While it is true that researchers have induced heart disease in some animals by giving them extremely large dosages of oxidized or rancid cholesterol—amounts ten times that found in the ordinary human diet—several population studies squarely contradict the cholesterol-heart disease connection.

A survey of 1700 patients with hardening of the arteries, conducted by the famous heart surgeon Michael DeBakey, found no relationship between the level of cholesterol in the blood and the incidence of atherosclerosis.<sup>9</sup>

A survey of South Carolina adults found no correlation of blood cholesterol levels with "bad" dietary habits, such as use of red meat, animal fats, fried foods, butter, eggs, whole milk, bacon, sausage and cheese.<sup>10</sup> A Medical Research Council survey showed that men eating butter ran half the risk of developing heart disease as those using margarine.<sup>11</sup>

Mother's milk provides a higher proportion of cholesterol than almost any other food. It also contains over 50% of its calories as fat, much of it saturated fat. Both cholesterol and saturated fat are essential for growth in babies and children, especially the development of the brain.<sup>12</sup> Yet, the

American Heart Association is now recommending a low-cholesterol, lowfat diet for children! Commercial formulas are low in saturated fats and soy formulas are devoid of cholesterol. A recent study linked lowfat diets with failure to thrive in children.<sup>13</sup>

Numerous surveys of traditional populations have yielded information that is an embarrassment to the Diet Dictocrats. For example, a study comparing Jews when they lived in Yemen, whose diets contained fats solely of animal origin, to Yemenite Jews living in Israel, whose diets contained margarine and vegetable oils, revealed little heart disease or diabetes in the former group but high levels of both diseases in the latter.<sup>14</sup> (The study also noted that the Yemenite Jews consumed no sugar but those in Israel consumed sugar in amounts equaling 25-30% of total carbohydrate intake.)

A comparison of populations in northern and southern India revealed a similar pattern. People in northern India consume 17 times more animal fat but have an incidence of coronary heart disease seven times lower than people in southern India.<sup>15</sup> The Masai and kindred tribes of Africa subsist largely on milk, blood and beef. They are free from coronary heart disease and have excellent blood cholesterol levels.<sup>16</sup>

Eskimos eat liberally of animal fats from fish and marine animals. On their native diet they are free of disease and exceptionally hardy.<sup>17</sup> An extensive study of diet and disease patterns in China found that the region in which the populace consumes large amounts of whole milk had half the rate of heart disease as several districts in which only small amounts of animal products are consumed.<sup>18</sup>

Several Mediterranean societies have low rates of heart disease even though fat-including highly saturated fat from lamb, sausage and goat cheese-comprises up to 70% of their caloric intake. The inhabitants of Crete, for example, are remarkable for their good health and longevity.<sup>19</sup> A study of Puerto Ricans revealed that, although they consume large amounts of animal fat, they have a very low incidence of colon and breast cancer.<sup>20</sup>

A study of the long-lived inhabitants of Soviet Georgia revealed that those who eat the most fatty meat live the longest.<sup>21</sup> In Okinawa, where the average life span for women is 84 years-longer than in Japan-the inhabitants eat generous amounts of pork and seafood and do all their cooking in lard.<sup>22</sup> None of these studies is mentioned by those urging restriction of saturated fats.

The relative good health of the Japanese, who have the longest life span of any nation in the world, is generally attributed to a lowfat diet. Although the Japanese eat few dairy fats, the notion that their diet is low in fat is a myth; rather, it contains moderate amounts of animal fats from eggs, pork, chicken, beef, seafood and organ meats. With their fondness for shellfish and fish broth, eaten on a daily basis, the Japanese probably consume more cholesterol than most Americans.

What they do not consume is a lot of vegetable oil, white flour or processed food (although they do eat white rice.) The life span of the Japanese has increased since World War II with an increase in animal fat and protein in the diet.<sup>23</sup> Those who point to Japanese statistics to promote the lowfat diet fail to mention that the Swiss live almost as long on one of the fattiest diets in the world. Tied for third in the longevity stakes are Austria and Greece-both with high-fat diets.<sup>24</sup>

As a final example, let us consider the French. Anyone who has eaten his way across France has observed that the French diet is just loaded with saturated fats in the form of butter, eggs, cheese, cream, liver, meats and rich patés. Yet the French have a lower rate of coronary heart disease than many other western countries.

In the United States, 315 of every 100,000 middle-aged men die of heart attacks each year; in France the rate is 145 per 100,000. In the Gascony region, where goose and duck liver form a staple of the diet, this rate is a remarkably low 80 per 100,000.<sup>25</sup> This phenomenon has recently gained international attention as the French Paradox. (The French do suffer from many degenerative diseases, however. They eat large amounts of sugar and white flour and in recent years have succumbed to the timesaving temptations of processed foods.)

A chorus of establishment voices, including the American Cancer Society, the National Cancer Institute and the Senate Committee on Nutrition and Human Needs, claims that animal fat is linked not only with heart disease but also with cancers of various types. Yet when researchers from the University of Maryland analyzed the data they used to make such claims, they found that vegetable fat consumption was correlated with cancer and animal fat was not.<sup>26</sup>

## Understanding The Chemistry Of Fats

Clearly something is wrong with the theories we read in the popular press-and used to bolster sales of lowfat concoctions and cholesterol-free foods. The notion that saturated fats per se cause heart disease as well as cancer is not only facile, it is just plain wrong. But it is true that some fats are bad for us. In order to understand which ones, we must know something about the chemistry of fats.

Fats-or lipids-are a class of organic substances that are not soluble in water. In simple terms, fatty acids are chains of carbon atoms with hydrogen atoms filling the available bonds. Most fat in our bodies and in the food we eat is in the form of triglycerides, that is, three fatty-acid chains attached to a glycerol molecule.

levated triglycerides in the blood have been positively linked to proneness to heart disease, but these triglycerides do not come directly from dietary fats; they are made in the liver from any excess sugars that have not been used for energy. The source of these excess sugars is any food containing carbohydrates, particularly refined sugar and white flour.

## Fatty Acid Classifications By Saturation

Fatty acids are classified in the following way:

**Saturated:** A fatty acid is saturated when all available carbon bonds are occupied by a hydrogen atom. They are highly stable, because all the carbon-atom linkages are filled-or saturated-with hydrogen. This means that they do not normally go rancid, even when heated for cooking purposes. They are straight in form and hence pack together easily, so that they form a solid or semisolid fat at room temperature. Your body makes saturated fatty acids from carbohydrates and they are found in animal fats and tropical oils.

**Monounsaturated:** Monounsaturated fatty acids have one double bond in the form of two carbon atoms double-bonded to each other and, therefore, lack two hydrogen atoms. Your body makes monounsaturated fatty acids from saturated fatty acids and uses them in a number of ways.

Monounsaturated fats have a kink or bend at the position of the double bond so that they do not pack together as easily as saturated fats and, therefore, tend to be liquid at room temperature. Like saturated fats, they are relatively stable. They do not go rancid easily and hence can be used in cooking. The monounsaturated fatty acid most commonly found in our food is oleic acid, the main component of olive oil as well as the oils from almonds, pecans, cashews, peanuts and avocados.

**Polyunsaturated:** Polyunsaturated fatty acids have two or more pairs of double bonds and, therefore, lack four or more hydrogen atoms. The two polyunsaturated fatty acids found most frequently in our foods are double unsaturated linoleic acid, with two double bonds-also called omega-6; and triple unsaturated linolenic acid, with three double bonds-also called omega-3. (The omega number indicates the position of the first double bond.)

Your body cannot make these fatty acids and hence they are called "essential." We must obtain our essential fatty acids or EFA's from the foods we eat. The polyunsaturated fatty acids have kinks or turns at the position of the double bond and hence do not pack together easily. They are liquid, even when refrigerated.

The unpaired electrons at the double bonds makes these oils highly reactive.

They go rancid easily, particularly omega-3 linolenic acid, and must be treated with care. Polyunsaturated oils should never be heated or used in cooking. In nature, the polyunsaturated fatty acids are usually found in the cis form, which means that both hydrogen atoms at the double bond are on the same side.

All fats and oils, whether of vegetable or animal origin, are some combination of saturated fatty acids, monounsaturated fatty acids and polyunsaturated linoleic acid and linolenic acid. In general, animal fats such as butter, lard and tallow contain about 40-60% saturated fat and are solid at room temperature.

Vegetable oils from northern climates contain a preponderance of polyunsaturated fatty acids and are liquid at room temperature. But vegetable oils from the tropics are highly saturated. Coconut oil, for example, is 92% saturated. These fats are liquid in the tropics but hard as butter in northern climates. Vegetable oils are more saturated in hot climates because the increased saturation helps maintain stiffness in plant leaves. Olive oil with its preponderance of oleic acid is the product of a temperate climate. It is liquid at warm temperatures but hardens when refrigerated.

## **Continued Next Issue**

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## [References](#)