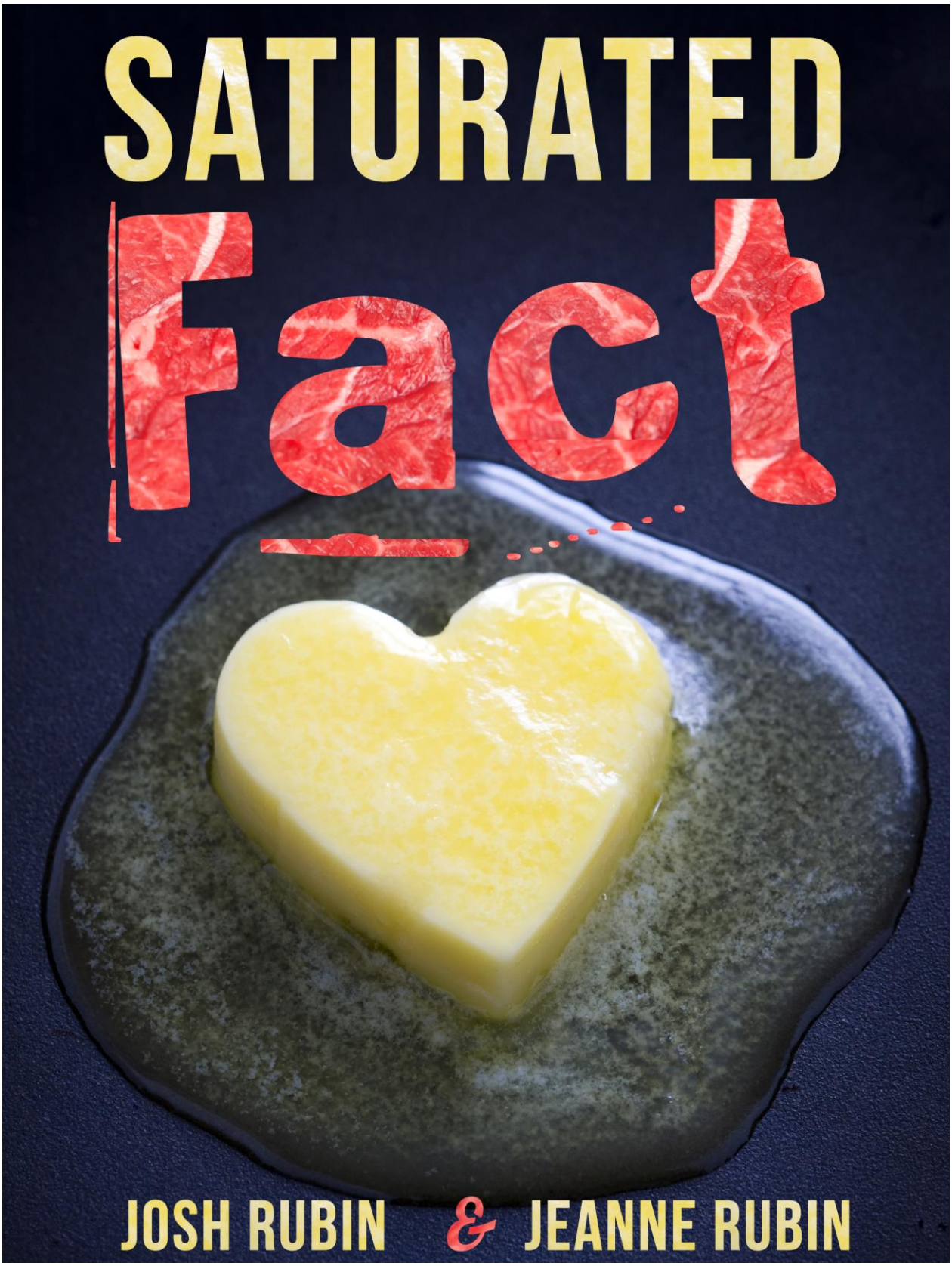
SATURATED
Fact
JOSH RUBIN & JEANNE RUBIN

Saturated Fact: A Closer Look at "Healthy Fats" and the Truth about Saturated Fat

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Introduction

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"Understanding the complexity of the physiology of fats offers a deeper appreciation of the complexity of the living organism." - Ray Peat, PhD

The word "fat" has been demonized since the mid-1970s because it is misunderstood. This is proven by the fact that most American physicians still think fats are bad. Despite the efforts of low-fat diets and low- and non-fat foods, 97 million Americans are overweight. The primary focus on fats has been on their caloric density, adiposity, and excessive intake, while the actual function of fats has been largely ignored.

The issue of "fat" has been convoluted and confused by the medical community, food producers, and lots of businesses just out to make a buck. So now, especially after decades of fat-bashing propaganda, the American public is left uncertain what to believe, unsure what to buy, and definitely nervous about what they're putting in their mouths. Which fats are the best to eat? Which promote health and which promote illness? Is eating a low-fat diet a good idea?

And that's why we've written this book—to clear up the misconceptions about fat once and for all.

At a time when obesity rates are at an all-time high and diseases like cancer and heart disease are reaching epidemic proportions, it's vital that we examine our diets and other factors that we have control over, in relation to our health. We are exposed to more food products than ever, and yet there is a severe lack of true nutrition. Thankfully, "real" food is making a comeback with farmers' markets, CSAs, and traditional food producers popping up all over the map. It's a trend away from diet fads and toward a new (and old) beginning, a way of eating familiar to our ancestors but still somewhat foreign to most of us brought up on fast food and microwave dinners.

What is real food, anyway? Real foods are foods that have been eaten for the majority of the time that humans have inhabited the planet. As you'll soon learn, these traditional diets were often full of saturated fats—those fats that have been demonized for so long—and yet the people eating these diets were remarkably healthy.

Clearly, there is a disconnect between what we've been taught and what is actually true, and that is what we're going to examine in this book.

We're going to start out with fat basics. What are fats and what do they do in the human body? Then we'll move on to debunk some popular fat myths and discover the truth about traditional human diets and how much fat some populations have been able to eat with no ill effects (hint: it's a lot!). We'll look at the specific types of fat that promote illness and what *really* causes

heart disease (you won't want to miss this one!). Another doozy will be the chapter on cholesterol. You've been trying to reduce your cholesterol levels (or know someone who has), right? Well, we'll explain why that may not be the best idea.

And just when you think all is lost, we'll take a look at those good fats and how you can incorporate more of them into your diet on a daily basis. It's easier than you think and we're here to support you every step of the way. Ready to get started?

Chapter 1: FAT BASICS - What's a PUFA, anyway?

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All fats are not created equal. To understand how fats affect the human body and how they can either promote health or disease, we must first dive into a little bit of chemistry and biology.

All fatty acids consist of a chain of carbon atoms with a varying number of hydrogen atoms attached. These fatty acids are: short-chained fatty acids (SCFA) containing 2-4 carbons, commonly found in butter and vinegar; medium-chained fatty acids (MCFA) containing 6-12 carbons, found in certain tropical plants like coconuts; or long-chained fatty acids (LCFA) containing more than 12 carbons, the most common found in nature.

Fatty acids are classified by their degree of saturation, and, as you may already know from reading food labels, there are three types: **saturated**, **monounsaturated**, and **polyunsaturated**. When a carbon atom in the fatty acid has a hydrogen atom attached to all positions, it is called a saturated fatty acid. Just like a saturated sponge is holding all the water it can possibly hold, a saturated fatty acid holds all of the hydrogen it can possibly hold. A fatty acid that is missing a pair of hydrogen atoms on one of its carbons is called a monounsaturated fatty acid. If more than one double bond is missing, it is called a polyunsaturated fatty acid (aka PUFAs).

Saturated fatty acids are very stable and remain solid at room temperature. These include:

Coconut oil
Heavy cream
Butter
Animal tallow

They are fully surrounded by hydrogen molecules and cannot be broken down or changed by oxygen. Saturated fats are the best fats for cooking.

Monounsaturated fats are not as stable as saturated fats and are liquid at room temperature. Although they are more stable than polyunsaturated fats, they can be affected by oxygen over time and should only be used for taste after cooking. These fats include:

Olive oil
Avocados

Polyunsaturated fats are liquid at room temperature and consist of vegetable and seed oils like:

Safflower
Sunflower
Corn
Soybean
Cottonseed
Peanut

Canola

It is the degree of saturation and the length of the carbon chain that determine the chemical properties of fatty acids and their effects on health. The shape of the fatty acid regulates membrane function while membrane permeability is often directly altered by the composition of fatty acids in the cells. Tissue structures that are highly fat-dense are influenced by both the amount and quality of fat.

Red meat, chicken, fish, dairy, eggs, nuts, and seeds are rich in fat. Fruits and vegetables also contain fats. Another more common term for fat is "lipid," which includes several fat-like compounds in the body. Lipids are defined as substances that are insoluble in water and soluble in organic solvents (i.e. bile). Lipids include fatty acids and triglycerides, phospholipids, and sterols/cholesterol. Sterols like cholesterol are not only found in cell membranes but also serve as the starting point for the synthesis of bile, vitamins, and steroid hormones.

Triglycerides are the storage form of fat from excess protein and carbohydrate consumption, making up 95% of the lipids found in the body. Triglycerides are what make up human body fat, and are the fats consumed in animal foods. When triglycerides are metabolized, the glycerol is converted to glucose. Although all the hype focuses on the negative impact of cholesterol on health, the actual focus should be on triglycerides. Triglycerides are composed of fatty acids, and it is the food we eat that determines which fatty acids are attached to the glycerol molecule to form a triglyceride.

Ninety-five percent of the fat in the body consists of a combination of monounsaturated, saturated, and polyunsaturated fat; the remaining five percent consists of phospholipids and sterols. The optimal ratios of fatty acids in the body are 45 percent saturated, 50 percent monounsaturated, and five percent polyunsaturated. When the body makes its own fats, it predominantly makes monounsaturated and saturated because that is what it prefers. Remember, the fat that goes into the construction of the cell is influenced by the fat in our diet.

Fatty acids are found in every cell in the body. They help to regulate cell membrane fluidity. Fatty acids are involved in keeping the structure of the cell membrane stable so that proteins, ion channels, hormone receptors, and the glycoproteins can function optimally. Fats help transport and store fat-soluble vitamins (A, D, E, and K), protect our vital organs, and affect growth, reproduction, immunity, and metabolic function. Fats are absolutely essential to our health and vitality, which is why low-fat diets or diets including the wrong kinds of fats can be detrimental.

Chapter 2: FAT MYTHS - Debunked!

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Fat has been demonized for so long that it's hard to know what to believe anymore. Let's get some things cleared up right from the beginning!

Myth #1: Polyunsaturated fats (PUFAs) are good for you.

We hear everywhere that fatty fish (i.e. salmon), nuts, seeds, and their oils are beneficial for our health because they contain "essential fatty acids" (EFAs). Other examples include fish oils, flaxseed, hemp seed, canola, leafy vegetables, and walnuts. We are here to tell you that this is not true. To add to the confusion, most of the healthy, saturated fats have been substituted out for these highly toxic polyunsaturated fats (PUFAs) and heavily marketed as safe. The truth is, in excess, polyunsaturated fats are a detriment to our health because they inhibit the production of the natural and protective non-essential fatty acid, Omega-9. Omega-9 is produced by the body from unsaturated fats converted from glucose.

Although these foods and supplements are marketed as safe, there is legitimate research proving the toxicity and adverse effects of these foods and oils. The oxidation of PUFA perpetuates inflammatory cycles in the body, causing a breakdown in energy production and symptoms of fatigue. We will be going into the connection between PUFAs and illness later on in this book.

Other sources of PUFAs include: legumes, grains, and poultry.

Myth #2: Saturated fat is the enemy.

Did you know that there has never been a study demonstrating that high blood cholesterol causes heart disease? Disturbing, right? For the past 50 years, Americans have been convinced that cholesterol, from the ingestion of saturated fats, is the leading cause of heart disease. Ironically, Americans have avoided foods such as butter, cream, eggs, lard, and red meat, yet the incidence of heart disease continues to be on the rise.

In short-term, double-blind studies, unsaturated fats were shown to slightly lower cholesterol, opening the door for massive marketing campaigns stating that PUFA lowers the level of cholesterol in the blood. It was shown at this same time that the only biological effects of unsaturated fats were sterility and dementia. Today, 1 in 6 couples is infertile, and as of 2013, an estimated 2.5 million Americans of all ages have Alzheimer's disease.

For these reasons alone, unsaturated fats should have never been introduced as safe for human consumption. We have been severely misled and need to relearn about food and how it affects our body.

Myth #3: Eating fat will make you fat.

The WRONG types of fats can make you fat, not because they are "fat" but because of their effects on the health of the metabolism. Fats are essential to survival and although they yield a greater caloric value, they do not require insulin to break down. Insulin is a fat-storing hormone. In fact, the fat in any of your favorite dessert treats will help slow down the sugar spike brought on by the consumption of something sweet, thus reducing the insulin surge.

Given how essential fat is to the health of the human body, it really is a shame we use the same label "fat" for such a vitally important macronutrient as we do for the bodily condition we are all trying to avoid!

Instead of doing something drastic like eliminating an essential macronutrient, let's consider the different types of fat. Throughout this book, we will be exploring the different types of fat and their effects on health. Hopefully by the end, you'll see that you can enjoy plenty of the healthy kinds of fats while enjoying the best health of your life!

Myth #4: Eating fat will increase your cholesterol.

According to the cholesterol hypothesis, the fat we eat is directly responsible for the amount of cholesterol in our blood. This hypothesis is false! As much as 80% of the cholesterol in the body is produced by the liver and 20% comes from food in the diet. The amount of cholesterol consumed is not important. The liver manufactures only the amount needed to maintain homeostasis, and that amount is very specific to the individual. When a diet is low in cholesterol, the liver produces it from other dietary sources like other fats and sugars.

When we deprive the body of fat, the body experiences this as deprivation—a time of crisis or famine. During this crisis, insulin will activate an enzyme in the liver that begins to overproduce cholesterol from the carbohydrates you eat. So not eating *enough* fat increases cholesterol!

The production of cholesterol is the first stage in handling the stress reaction because it is required for the production of all the steroidal hormones. The increased production of cholesterol itself is a primitive, defensive, anti-stress system. It has a direct effect on producing the steroidal hormones as well as interfering with the toxic effects of chemical and physical stress. The steroidal hormone system is the most powerful stress-induced system.

In summary, high cholesterol:

Is not from the foods you eat

Is a large antioxidant to help fight stress/inflammation

Is a marker for hypothyroidism

Myth #5: Raw vegetables (salads) and juicing are healthy.

Human beings are not the only inhabitants of this earth, so it is crazy to think that all nourishing substances were meant for our consumption.

Most above-ground vegetables contain high amounts of cellulose and polyunsaturated fats (PUFAs). In raw form, these foods place a huge load on the digestive system and can lead to inflammation. Unless you are a cow or other ruminant animal, these foods were not created for you. They were created to nourish the animals that you, as a human, consume.

Fatigue is a symptom of poor energy production. Any suppression in the system leads to a compromised digestive system. Eating foods we cannot digest in a system that is already deficient creates more burden and more suppression and provides the perfect breeding ground for bacteria. We have an entire society trying to treat candida when the very reason candida is overgrown is in response to a breakdown in the whole!

Drinking fruit juice is preferable to drinking vegetable juice. Vegetable juice is anti-thyroid and offers up high concentrations of toxic PUFA while stripping away the protection of the fiber.

Factual Fat Recommendations:

Avoid the consumption of polyunsaturated fats as much as possible.

Fats should make up 20-30% of daily food intake.

Animal proteins contain fat, so additional fat is not always necessary. Avoid over-doing coconut oil and butter when cooking.

Most restaurants use vegetable and/or seed oils and are more than accommodating when they are asked to reduce or eliminate the use of oil when cooking your food.

Chapter 3: FATS - A Historical Perspective

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"… Eskimos, when still on their native meats, are never corpulent – at least I have seen none. They may be well-fleshed. Some, especially women, are notably heavier in middle age than when young. But they are not corpulent in our sense ...

[However,] there is no racial immunity among Eskimos to corpulence. You prove that by how quickly they get fat and how fat they grow on European diets."

- Canadian explorer and ethnologist, Vilhjalmur Stefansson, in 1936

Fats have always played an important role in the human diet. Whether hunting or herding, animal fats—both from meat and from dairy products—have been a staple for the entirety of our evolution on this planet. Sometimes these traditional diets even came close to being 100% animal-based, such as in the Inuit populations studied by Vilhjalmur Stefansson. When animal fats were not as readily available, however, humans turned to tropical fats like coconut oil, which is abundant in healthy, saturated fats.

One such example is the Tokelauans in the South Pacific, who – when eating their traditional diet – get 40-50% of their calories from coconut fat. (By comparison, Americans today are instructed to get less than 10% of their daily calories from saturated fat.) The Tokelauans were the subject of a major epidemiological study between 1968 and 1982. The results showed that they had low rates of diabetes and no recent heart attacks. Their cholesterol levels were good and they all had healthy blood pressures. The same can certainly not be said of most Westerners today.

Also widely cited is the Kitava study, which was a series of papers produced primarily by Dr. Staffan Lindeberg. Like the Tokelauans, the Kitavan also consume a lot of coconuts, though they only derive about 20% of their daily calories from coconut fat. Still, this is twice as high as we are told is "safe." Again, these people were found to be remarkably healthy and free of the diseases that plague Western society, including diabetes, obesity, heart disease, stroke, and dementia. Also of note was that although infant mortality was high (common in regions without Western medical access), if you survived, you were likely to live into your 70s. One man had even made it to 100. In the Kitavan diet, the ratio of omega-6 to omega-3s was approximately 1:2.

Several sources of information suggest that human beings evolved on a diet with a ratio of approximately 1:1 omega-6 to omega-3s. Today, the ratio is 15:1-16.7:1; perhaps even as high as 20:1 in diets that include lots of packaged and fast foods. Western diets are deficient in omega-3 fatty acids and have excessive amounts of omega-6 fatty acids compared to diets in the past,

from which human genetic patterns were established. This change comes from the increased amount of polyunsaturated fatty acids found in vegetable and seed oils.

So why the changeover? If traditional peoples maintained excellent health while eating an abundance of delicious saturated fats, why did we ever stop?

Like so many things, the answer mainly comes down to money (and some creative political lobbying).

In the nineteenth and the early part of the twentieth century, Americans were still buttering their bread (with real butter!) and saving up bacon grease to cook with. Along with butter and bacon, cream, lard, beef tallow, and meat comprised the majority of the nation's fat intake. Coconut oil was used in many commercially produced products (though most people still cooked the majority of their food at home from scratch). If you were sick, you were instructed to consume steak and eggs for breakfast. Saturated fats were considered healing foods and an important part of a healthy diet. But this was all about to change.

Trouble was a-brewin' in the seed and oil industry. Cotton manufacturers in particular had all these extra seeds after processing the usable cotton and needed to find a way to put the waste to use. Ingenuity and the search for more profits lead to the realization that this waste product of the cotton industry—cotton seed—could be used to produce tons of cheap oil. And thus the vegetable oil takeover was born.

At the turn of the twentieth century, consumption of margarine hovered around two pounds per person per year, but by 1950 that amount shot up to eight pounds. Meanwhile, butter consumption dropped from 18 pounds per person per year to just over ten, and the use of vegetable oils like cottonseed and soybean more than tripled. Because of the Japanese occupation of the Philippines, coconut oil was in short supply and was quickly replaced by hydrogenated oils in most convenience foods, which turned out to be much cheaper. So even after the occupation ended, coconut oil was all but forgotten.

Today, vegetable oils can be found in most commercial foods. They're lurking in even the most unsuspecting places, in everything from cookies and crackers to salad dressings, meat, and baby formula. They are so prevalent that a person today consumes roughly 70 pounds of vegetable oils each year.

Though humans are able to survive on an astounding variety of diets, at no point in our history in any place around the globe have we ever consumed this many PUFAs. And though evidence in the beginning seemed to be inconclusive, it's now becoming quite clear that these fats—polyunsaturated and trans fats—can be linked to an astounding number of modern diseases.

Chapter 4: KILLER PUFAs - The Real Cause of Disease

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Most doctors still tell their patients to cut back on saturated fats, which they consider "bad," and to replace them with "healthier" options like canola (rapeseed) oil and "heart-healthy" margarine. Unfortunately, doctors' views on nutrition are often marred by biased studies and a severe lack of nutrition education in med school.

The trouble is that these polyunsaturated fats are highly unstable and susceptible to oxidation and free-radical formation. The funny thing is that although the processing of these oils often uses chemical solvents, etc., it is not the processing of these oils but rather the unsaturation (double-bonded carbons missing hydrogen atoms) itself that makes PUFAs toxic.

The double-bonded carbons act as hot spots on the fatty acid. These hot spots are quick to react with radicals and other energy shifts like light, heat, and oxygen. The human body is full of heat and oxygen and in a constant shift towards maintaining homeostasis.

Polyunsaturated fatty acids are interactive and susceptible to oxidation in human tissues. These oxidative processes damage enzymes and energy production at the cellular level.

"One reason the polyunsaturates cause so many health problems is that they tend to become oxidized or rancid when subjected to heat, oxygen and moisture as in cooking and processing. Rancid oils are characterized by free radicals—that is, single atoms or clusters with an unpaired electron in an outer orbit. These compounds are extremely reactive chemically. They have been characterized as "marauders" in the body, for they attack cell membranes and red blood cells and cause damage in DNA/RNA strands, thus triggering mutations in tissue, blood vessels and skin. Free radical damage to the skin causes wrinkles and premature aging; free radical damage to the tissues and organs sets the stage for tumors; free radical damage in the blood vessels initiates the buildup of plaque. Is it any wonder that tests and studies have repeatedly shown a high correlation between cancer and heart disease with the consumption of polyunsaturates? New evidence links exposure to free radicals with premature aging, with autoimmune diseases such as arthritis, and with Parkinson's disease, Lou Gehrig's disease, Alzheimer's and cataracts." Weston A. Price Foundation

Saturated fatty acids, on the other hand, interact the least with other molecules in the body and provide the most stable structure. Saturated fats like butter and coconut oil are much more stable at room temperature because of their straight structure. This makes them much less likely to go rancid and cause inflammation in the body, which is now being implicated as a major cause of disease.

For those who may be unconvinced as to the radical effects of polyunsaturated fats in the body, what follows is a partial list. PUFAs:

• Contribute to all phases of holistic decline. They increase histamine, estrogen, serotonin, and lactate, which are all immunosuppressive and are involved in tumor growth.

• Decrease crucial respiratory enzymes

• Decrease thyroid hormone activity (essential for many vital functions, including metabolic rate) and progesterone activity

• Activate the aromatase enzyme and estrogen

• Inhibit proteolytic enzymes in the gut, leading to maldigestion, malabsorption, leaky gut syndrome, and the production of endotoxin … thus over-burdening the liver.

    • The inhibition of proteolytic enzymes by unsaturated fats will act at many sites: digestion of protein, digestion of clots, digestion of the colloid in the thyroid gland that releases the hormones, the activity of white cells, etc.

• Cause blood sugar dysregulation. Low blood sugar can create GI system dysfunction and immune system stress secondary to certain inflammatory markers such as histamine, serotonin, and prostaglandins.

• Have been shown to be immunosuppressive by causing damage to the beta cells (insulin producing cells) of the pancreas. This blocks sugar from getting into the cells, affects cellular respiration, and perpetuates the stress reaction in the body.

• Lower body temperature and pulse (markers of metabolic function)

• Suppress mitochondrial respiration and metabolize carbohydrates into fat

• Cause deterioration of brain, muscles, and gonads by their destruction of Vitamin E

    • PUFAs pull vitamin E from the blood and into the tissues, lowering vitamin E in the body

• Increase clotting due to their relation with increased estrogen

    • Increased clotting is secondary to decreased vitamin E levels

• Cause advanced glycation end products and calcification/fibrosis of arterial walls

    • Unsaturated fats activate protein kinase C, which increases vascular tension

• Oxidize cholesterol and produce LDL

• Inhibit the enzymes that help to detoxify PUFAs, estrogen, and serotonin

- Damage the thymus and influence immunodeficiency
- Inhibit the production of progesterone and synthesize the production of estrogen, causing the release of more PUFAs from the tissues
    - Sex steroid-binding globulin (SSBG) neutralizes estrogen by binding to it and keeping it out of the cells; PUFAs block SSBG from binding to estrogen.
- Decrease glucose oxidation and increase lipid peroxidation
    - This is a cause of type-2 diabetes
    - Impairs the beta cells of the pancreas
- Inhibit the conversion of glucose to glycogen and into lactic acid, leading to inflammation, bacterial overgrowths, liver burden, and insulin resistance
- Produce free radicals, possibly leading to cancer. *"In the skin, ultraviolet light's primary 'target' appears to be polyunsatured fats, from which is produced free radicals."* - Ray Peat, PhD
- Stimulate stress hormones, which increases lipolysis, producing more free fatty acids in a vicious circle

A Special Note on PUFAs and Immunity

Polyunsaturated fatty acids derived from foods have a special role in the immune system. PUFAs intensify the effects of stress in the body by killing off lymphocytes and blocking the proliferative response to thymic cells. This shifts immune function from cellular immunity to humoral immunity. This pattern predisposes one to autoimmunity.

"Vegetable oil is recognized as a drug for knocking out the immune system. Vegetable oil emulsions were used to nourish cancer patients, but it was discovered that the unsaturated oils were suppressing their immune systems. The same products, in which vegetable oil is emulsified with water for intravenous injection, are now marketed specifically for the purpose of suppressing immunity in patients who have had organ transplants. Using the oils in foods has the same harmful effect on the immune system. [E. A. Mascioli, et al.,Lipids 22(6) 421, 1987.] Unsaturated fats directly kill white blood cells. [C. J. Meade and J. Martin, Adv. Lipid Res., 127, 1978.]"

- Ray Peat, PhD

Chapter 5: SAT-FAT CONSPIRACY - The Truth About Heart Disease

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Though the effects of polyunsaturated fats extend throughout the human body, there is probably one topic that has received more attention than any other in the realm of "fat talk." That topic is heart disease.

In the United States today, heart disease is the number one cause of death. But this wasn't always the case. In the early twentieth century, heart disease accounted for only 10 percent of total deaths. As consumption of vegetable oils increased, however, so did the rates of heart disease, rising to 30 percent by the 1950s.

This is not unique to America, however. All over the world, studies have been conducted comparing people who are eating their native diets with those who have adopted Western foods. Time and time again, the studies show the same thing: when Western foods are introduced, Western diseases—like heart disease—follow very soon after. It's not hard to believe when considering that a large part of the Western diet is now comprised of polyunsaturated fats.

In the 1980s in Greenland, less than 3.5% of the indigenous population (who were still eating mostly a traditional diet) died of heart disease. Their diet was nearly identical to that of the Inuit, which, if you recall, was mostly comprised of very fatty animal meat. It's interesting to note that when the native Greenlanders moved to Denmark and began eating a more European diet (more plant foods), their apparent immunity to heart disease was completely obliterated and they suffered the same fate as their new European neighbors.

A similar observation was made of the Maasai people in Africa, who traditionally subsisted on a diet of raw full-fat milk, raw meat, and raw blood from their herds of grazing cattle. At one time, 600 Maasai men, most over the age of 40, were studied and it was discovered that only one had ever had a heart attack. The crazy thing is that these men were getting about 66% of their daily calories from fat—most of it saturated. They were also consuming about 600mg of cholesterol each day, which is twice the amount recommended as healthy by the American Heart Association.

A separate study of the Maasai, in which electrocardiogram tests were administered to 400 young adult males, found no evidence of heart disease, abnormalities, or malfunction. It was also noted that cholesterol levels were about 50% that of the average American. Clearly there is a disconnect here.

Back to the Inuit: it seems that despite their fat- and cholesterol-laden diets, like the Maasai, their blood cholesterol was low.

"Rabinowitch, discussing the contention of others that arteriosclerosis was rare in Eskimos, stated that this was not the case in those he examined in the eastern Arctic of Canada, where contact with white man had altered the diet, but in the most northerly parts there was no evidence of arteriosclerosis; total cholesterol in serum was low." (Lancet 1983)

And remember the Kitavan with their coconut-heavy diet? The official result from that study was that "stroke and ischaemic heart disease appear to be absent in this population."

But how can this be? After all, for the past 50 years, Americans have been convinced that cholesterol and saturated fats are the causes of heart disease. Consequently, Americans have avoided foods such as butter, cream, eggs, and red meat in favor of margarine, chicken, and skim milk. What is disturbing is that there has never been a study that demonstrates that high blood cholesterol *causes* heart disease. In fact, the studies show just the opposite!

In the middle of the twentieth century, the only biological effect of unsaturated fats—other than sterility and dementia—that was established for the seed oils was their influence on lowering blood cholesterol. It was observed over decades that cholesterol accumulated in the walls of blood vessels, causing atherosclerosis. What was not published in these studies was the fact that in these experiments, the cholesterol was being dissolved in unsaturated vegetable oils. Cholesterol itself was not the problem! However, this research opened the door for massive marketing campaigns stating that cholesterol was found in the hardened arteries and in the blood, and that PUFA lowers the level of cholesterol in the blood.

The oil and seed industry argued that if it is in the blood vessels and blood, then the use of unsaturated vegetable oil can lower cholesterol in the blood and prevent disease. This argument proved lethal.

"The strange idea that cholesterol causes atherosclerosis was revived in the 1950s when the vegetable oil industry learned that their polyunsaturated oils lowered serum cholesterol. (Many other toxins lower cholesterol, but that is never mentioned.) The industry began advertising their oils as 'heart protective', and they enlisted some influential organizations to help in their advertising: the American Dietetic Association, the American Heart Association, the U.S. Dept. of Agriculture and FDA, and the AMA.

"The correspondence between heart disease and consumption of saturated fat and cholesterol is little more than advertising copy. If people were looking for the actual causes of heart disease, they would consider the factors that changed in the U.S. during the time that heart disease mortality was increasing. Both increases in harmful factors and decreases in protective factors would have to be considered.

"The consumption of manufactured foods, pollution of air and water, the use of lead in gasoline, cigarette smoking, increased medicalization and use of drugs, psychosocial and socioeconomic stress, and increased exposure to radiation—medical, military, and industrial—would be

obvious things to consider, along with decreased intake of some protective nutrients, such as selenium, magnesium, and vitamins." - Ray Peat, PhD

There are some studies from this time period that showed contrary evidence to what was widely marketed. The Anti-Coronary Club Project was launched in 1957, comparing two groups of New York businessmen between the ages of 49 and 59. The results (published in 1966 in the Journal of the American Medical Association, ironically enough) were rather astounding, given what we've been led to believe about heart disease.

The men were divided into two groups. The first group of men was instructed to eat what they referred to as a "Prudent Diet." They replaced butter with corn oil and margarine, eggs with cold cereal, and beef with chicken and fish. The second group ate eggs for breakfast and meat three times per day.

If we were to believe the mainstream hype, we should expect that the Prudent Dieters would have been vastly healthier all around than the group eating lots of cholesterol and saturated fats. However, although the Prudent Dieters had average cholesterol levels that were 30 points lower than the meat-heavy group, they also experienced eight deaths from heart disease.

That's right – in the group eating cereal and chicken and margarine, **eight people died**! From heart disease! Kind of blows your mind, doesn't it? You may not be surprised to learn that there were **zero deaths** in the second group … and they probably enjoyed their food a whole lot more.

There was a similar study published in The British Medical Journal in 1965 that explored the difference between consuming corn oil (very high in PUFAs), olive oil, and saturated animal fats. The corn oil group did have 30 percent lower cholesterol after two years … but only 52 percent of the participants were still alive! Fifty-seven percent of the olive oil eaters were still alive after two years—a slight improvement. But the winners were clearly the consumers of the animal fats, 75 percent of whom were still alive after two years.

The evidence is certainly there that intake of saturated fat and cholesterol does not cause heart disease, but this knowledge has been largely suppressed by the mainstream. And despite many studies like the ones above that have been published in reputable medical journals, the medical community—probably unwilling to admit the error of their ways—still espouses a doctrine of low-fat diets in most cases.

How PUFAs - NOT Cholesterol - Cause Atherosclerosis

PUFAs that are unavoidable in our diet are constantly breaking down, producing free radicals and causing inflammation and tissue injury. Anything disturbing the metabolism of a cell increases the likelihood of this happening. For example, the healthy normal oxidation through the mitochondria keeps the electrons tightly controlled while being transferred from a glucose molecule to an oxygen molecule. If there is a reduction in oxygen, the electrons in the

mitochondria will have nowhere to go and the electrons will escape as free radical potentiators. The cells become more oxidized in the absence of sufficient oxygen.

Any stress on a cell puts out these electrons that can attack the exposed electron bonds in unsaturated fats. Saturated fats, because they are saturated, are not available to stray electrons. When the oxygen going into the cell is limited, the unsaturated fats attach to the stray electrons and lead to chain reactions and the formation of lumps of age pigment called lipofuscin. These free radical oxidized fat fragments attach to proteins and collect bits of iron and other breakdown products from the free radical attacks on the cells. These lumps of age pigment, due to their iron and fat fragments, are able to catalyze the consumption of energy and deliver energy from enzymes to oxygen. This creates a false mitochondrial effect, consuming energy and wasting oxygen. This accelerates the process because the "real" mitochondria are further deprived of oxygen by these lumps of age pigment.

Oxygen deprivation and stress lead to inefficiencies in cellular communication. Signals that the body needs more energy are sent, changing the conditions of the organism and activating hormones such as cortisol, estrogen, and growth hormone. **These three hormones are closely connected to the rising triglycerides and the damage to the blood vessel wall (atherosclerosis) supposedly caused by cholesterol.** Cortisol increases estrogen, estrogen increases cortisol, and they both increase growth hormone, leading to the breakdown of triglycerides into free fatty acids, which are more reactive, are oxidized more quickly, and cause more cellular injury. It is the circulating fats in the bloodstream, in the first place activated by stress and unsaturated fats, that are problematic. Even though cortisol, estrogen, and growth hormone would normally be part of a defensive process, in the presence of the unsaturated fats, they further magnify the damage.

Chapter 6: CHOLESTEROL - The Hidden Hero

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As we learned in the preceding section, dietary cholesterol does not cause heart disease. Blood levels of cholesterol are also a poor indicator of heart disease risk, because the theory that lower cholesterol levels equate to lower incidence of heart disease turns out to be false. Obviously, we need to examine the issue of cholesterol more closely.

According to the cholesterol hypothesis, the fat we eat is directly responsible for the amount of cholesterol in our blood. This hypothesis is false because 80% of the cholesterol in the body is produced by the liver and only 20% comes from food in the diet. The amount of cholesterol consumed is not important. The liver manufactures only the amount needed to maintain homeostasis, and that amount is very specific to the individual. When a diet is low in cholesterol, the liver produces it from other dietary sources like other fats and sugars.

According to Diana Schwarzbein, MD, "*When you do not eat cholesterol, your body sees this deprivation as a time of 'crisis' or 'famine.' During this 'famine,' insulin activates an enzyme in your liver called HMG Co-A Reductase that begins to overproduce cholesterol from the carbohydrates you eat."*

Cholesterol is the precursor to all the protective steroidal hormones. Levels of cholesterol are determined by the body's ability to adapt to stress. The steroidal hormone system is the most powerful stress-induced system. Under stress, the adrenal glands take up cholesterol as well as synthesize cholesterol from raw materials because cholesterol is the precursor to all the protective steroidal hormones (pregnenolone, progesterone, DHEA, and cortisol). One of the main effects of the specific defense reaction of cortisol is the conversion of protein to sugar so that the sugar can be used for energy to increase adaptive ability to handle the stress.

When stress becomes too chronic and cortisol remains too high for too long, the cortisol will destroy excessive amounts of protein tissue. Prior to the cortisol response from stress, the continually adaptive adrenal tissue will be producing pregnenolone, progesterone, and DHEA, and it is only when those are not enough to handle the stress that progesterone will be further converted into cortisol.

The production of cholesterol is the first stage in handling the stress reaction for the purpose of its conversion to all the steroidal hormones. The increased production of cholesterol itself is a primitive, defensive, anti-stress system. It has a direct effect on producing the steroidal hormones as well as interfering with the toxic effects of chemical and physical stress.

"Cholesterol is an important antioxidant, which the body uses to repair damaged blood vessels. It is probably for this reason that serum cholesterol levels rise as people age. With age comes more free radical activity, and in response the body produces more cholesterol to help contain and control the damage. One of the basic functions of cholesterol seems to be the stabilization of

mitochondria, preventing their destruction by stress. Serious stress lowers ATP, magnesium, and carbon dioxide. When ATP and intracellular magnesium are decreased, cholesterol synthesis increases." - Ray Peat, PhD

What is an optimal level of cholesterol?

Research has not established an optimal range of cholesterol. There are factors to consider when levels are too high or too low. Dr. Dicken Weatherby recommends a range of 150-220.

(To see a long term study of the variation of serum cholesterol in humans, visit: www.jci.org/articles/view/101024/pdf)

Elevated Cholesterol

Blood cholesterol is a reflection of thyroid function. Thyroid hormones and vitamin A are required for the conversion of cholesterol to the protective steroidal hormones. The higher the thyroid function, the more cholesterol the body is consuming. Thyroid also supports the ability to produce cholesterol.

In the 1930s, it was observed that elevated cholesterol was an indication of hypothyroidism and slowed energy production. Supplements of thyroid hormone were enough to prevent atherosclerosis and at the same time lowered cholesterol. Over the last 10-15 years, a Swedish doctor, Uffe Ravenscroft, has reviewed the literature and without a doubt concluded that there is no evidence showing the relationship between atherosclerosis, heart disease, and the level of cholesterol in the blood. They are associated, however it is not causal. Altered metabolic pathways are more likely.

"A level of serum cholesterol of 500mg/dL can be reduced to within normal ranges over a week period when T3 is taken in small doses …

"*Since the 1930s, it has been clearly established that suppression of the thyroid raises serum cholesterol (while increasing mortality from infections, cancer, and heart disease), while restoring the thyroid hormone brings cholesterol down to normal. In this situation, however, thyroid isn't suppressing the synthesis of cholesterol, but rather is promoting its use to form hormones and bile salts. The thyroid is functioning properly, the amount of cholesterol in the blood entering the ovary governs the amount of progesterone being produced by the ovary, and the same situation exists in all steroid-forming tissues, such as the adrenal glands and the brain. Progesterone and its precursor, pregnenolone, have a generalized protective function: antioxidant, anti-seizure, antitoxin, anti-spasm, anti-clot, anti-cancer, pro-memory, pro-myelination, pro-attention, etc. Any interference with the formation of cholesterol will interfere with all of these exceedingly important protective functions."* - Ray Peat, PhD

Is low cholesterol good?

When the body is lacking the nutrients (sugar) necessary to convert energy to cholesterol, levels will be low. Too much starch and unsaturated fat, coupled with deficiencies in certain nutrients, are all factors that alter the body's ability to produce cholesterol. Low levels of cholesterol are just as harmful as high levels. Low levels may increase the risk of cancer.

A Hungarian study found that when serum cholesterol was chemically lowered, the mortality rate increased from accidents, homicides, suicides, and cancer. The protective hormones that are not being produced are the reason associated with the mortality.

Studies of older people in rest homes showed that those who lived the longest had cholesterol levels of over 200. In the Framingham study, people over age 50 who did not have cholesterol levels over 200 were more likely to develop dementia.

Statins and other cholesterol-lowering drugs cause depression, rotting bones, muscle wasting, and dying (rhabdomyolysis).

"Around 1985, a big study in Hungary showed that lowering cholesterol with drugs caused a huge increase in the cancer death rate. Hundreds of publications appeared in the U.S. saying that wasn't possible, because low cholesterol is good – the lower the better. The extreme increase in cancer mortality in the Hungarian study was probably the result of the drug that was commonly used at that time to lower cholesterol, but the pattern of mortality in that study was approximately the same pattern seen in any group with very low cholesterol. In the last 20 years, there have been many studies showing that lowering cholesterol increases mortality, especially from cancer and suicide, and that people with naturally low cholesterol are more likely to die from cancer, suicide, trauma, and infections than people with normal or higher than average cholesterol.

"The increased mortality from accidents and suicide when cholesterol is lowered is reminiscent of the problems seen in progesterone deficiency, and it's very likely that a deficiency of the neurosteroids accounts for it. A deficiency of progesterone and other neurosteroids (the steroids synthesized by the nerves themselves) causes depression of mood and impaired learning ability, among other neurological changes. As was the case with cancer, the pharmaceutical industry continues to deny that their anti-cholesterol drugs cause suicide, depression, and dementia, but there is a large amount of evidence from human as well as animal studies showing that mood and intelligence are depressed by lowering cholesterol. Simply injecting cholesterol into animals can improve their learning ability. In the Framingham heart study of 1894 people extending over a period of about 20 years, people with cholesterol naturally in the 'desirable' range, below 200 mg.%, scored lower on verbal fluency, attention/concentration, abstract reasoning, and a composite score measuring multiple cognitive domains than those with higher cholesterol (Elias, et al., 2005).

"The next step in studies of this sort should be to see how the combination of extra thyroid with adequate cholesterol influences longevity. The rising cholesterol that commonly occurs with

aging is probably only partial compensation for declining thyroid function, and by optimizing all of the protective factors, radical changes in the aging process may be possible." - Ray Peat, PhD

What is the difference between HDL and LDL?

Low-density lipoprotein (LDL) is the protein transport system that carries cholesterol out of the liver to places in the body where it is needed (i.e. brain, ovaries, testes, adrenal glands, skin). High-density lipoproteins (HDL) are more specific with anti-toxic effects over delivery like LDL. Toxins will tend to increase HDL relative to the LDL. Chlorinated hydrocarbons, radiation, estrogen, and alcohol will increase HDL relative to LDL due to its more specific anti-toxic effects.

Both HDL and LDL participate in detoxification. The protein that helps to carry the cholesterol in the bloodstream plays a role in the anti-stress mechanism in the body. Both are defensive and important.

Cholesterol increases with any toxin, heavy metal, etc. to protect our cells.

Chapter 7: FATS THAT HEAL - A Pantry Makeover

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Hopefully by now, it is clear which variety of fats are best for maintaining health (saturated and some monounsaturated fats) and which promote illness and degeneration (PUFAs). Let's get into some specifics now, so that you can begin to realign your kitchen with your health goals!

In order to better serve your health, it's best to eat the fats near the top of the following chart. These fats contain the highest proportion of saturated to polyunsaturated fats. Butter and coconut oil are particularly healing, and we will look more closely at each of those.

Composition of Common Fats

(in order of increasing PUFAs)

	Saturated	Monounsaturated	Polyunsaturated
Butter	64%	34%	2%
Tallow (beef/mutton)	50-55%	40%	3%
Coconut Oil	91%	6%	3%
Lard (pork fat)	40%	48%	12%
Olive Oil	13%	75%	12%
Duck / Goose Fat	35%	52%	13%
Chicken Fat	31%	49%	20%
Peanut Oil	18%	48%	34%
Canola Oil	5%	57%	33-38%
Sesame Oil	15%	42%	43%
Cottonseed Oil	27%	18%	55%
Soybean Oil	15%	24%	61%
Corn Oil	13%	25%	62%

Remember the long list of negative effects PUFAs have on our bodies? Luckily, we have other choices. To improve our health, we must eat more saturated fats. Still not convinced? Consider that saturated fats:

Improve cardiovascular risk factors - We've already established that consumption of saturated fat does not increase the risk of cardiovascular disease, but we may go so far as to say that saturated fat can help prevent it. Eating more saturated fats reduces lipoproteins, which do correlate to a risk of heart disease.

Help you build stronger bones - Saturated fat helps the body absorb fat-soluble vitamins like vitamin D, which is essential for bone health. Saturated fat also aids in the absorption of bone-dependent minerals like calcium. Dr. Mary Enig states that for this

reason alone, there's a case to be made for having as much as 50 percent of the fats in your diet as saturated fats.

Help maintain healthy lungs - The airspaces of the lungs are coated with a thin layer of surfactant, which is made up entirely of saturated fats. Without this coating, your lungs will not function properly. If the saturated fats are unavailable, they are replaced with other fats that are not as effective, potentially causing breathing difficulties.

Aid in satiety and weight loss - Saturated fats help you feel full longer, decreasing cravings and the urge to snack between meals. Studies have also shown that eating most of your fat as saturated fat aids in weight loss. You cannot lose weight if your cellular energy is low, and we already know that PUFAs decrease cellular energy.

Improve liver health - PUFAs detract from liver health, but saturated fats act as protection from toxins such as alcohol and medications.

Strengthen the immune system - We've already seen how PUFAs affect immunity. Saturated fats, especially those found in butter and coconut oil, act as antifungal, anti-toxin, and anti-viral agents.

Create and maintain a healthy brain - Your brain consists mainly of fat and cholesterol. Cholesterol acts as an antioxidant in the brain, protecting from the damage that can lead to dementia and Alzheimer's. In addition, saturated fats are needed to create nerve cell membranes. If these cell membranes are created from lesser quality fats, it can prevent these nerve cells from functioning at peak capacity.

Improve sexual function - A diet rich in saturated fat usually increases free testosterone levels, which improves sexual function. Saturated fats also promote a healthy metabolism, which is necessary for libido and performance.

Aid in muscle repair and recovery - The aforementioned free testosterone also helps to repair tissue and preserve muscle.

Now let's take a look at some of the specific foods that are high in saturated fats and how they are beneficial to human health.

"Saturated fats have many protective functions, and butter and coconut oil contain mostly those protective fats and only a very small percentage of the unstable PUFA, so they are the best natural fats that are available as food." - Ray Peat, excerpt from an interview with East West Healing

BUTTER

The Benefits of Butter:

Butter is an ancient food. Evidence of milk fat, most likely from sheep or goats, has been found in 8,000 year old Stone Age containers. The first reference to butter made from cow's milk comes from a Sumerian tablet that is approximately 4,500 years old.

When Weston A. Price, the now famous dentist, did his travels to different indigenous populations and studied their diets, he found that many of these societies ate butter. Particularly prized was the butter from animals who were eating fresh grass. These people knew instinctively that this butter was life-giving and especially good for children and expectant mothers. We now have the science to back this up.

Butter is the richest source of true vitamin A that is widely available in the United States today. It is also rich in other fat soluble vitamins, D, E, and K. Dr. Price called these vitamins "activators" because they are vital to so many functions in the human body. They help us to properly absorb the minerals we eat and are essential for growth, healthy bones, proper development of the brain and nervous systems, and normal sexual development.

Butter is also rich in vitamin K2, which Dr. Price called "Activator X." Along with vitamins A and D, this vitamin is essential for the proper absorption of minerals. Without these vitamins that are so abundant in butter, you could eat an extremely mineral-rich diet and simply pass the minerals without absorbing them. Vitamin K2 is found in organ meats from grazing animals and in some seafood, but butter remains the star in this field, especially from cows who are grazing on the rapidly growing grass of spring and fall. K2 is NOT found in butter produced from cows that were fed cottonseed meal or soy-based feeds (which, as you now know, are both loaded with PUFAs).

In addition to fat-soluble vitamins, butter is also an excellent source of short- and medium-chain fatty acids. These fatty acids are beneficial to the body because they do not need to be broken down by bile. Instead, they are absorbed directly by the small intestine and provide a quick source of energy. These fatty acids—especially lauric acid—are also antimicrobial and antitumor, and provide support for the immune system. While lauric acid is also found in coconut oil, butyric acid—which has antifungal and antitumor effects—is unique to butter.

An interesting component of butter that isn't discussed very often are Glycosphingolipids, which are a type of fat that protects against gastrointestinal infections. It is especially effective for the young and elderly, two groups more susceptible than others to infection. It has been noted that children who drink skim milk are three to five times more likely to experience diarrhea than children who drink whole milk. It's thought that this is due to these unique fats.

What Type of Butter to Consume:

The best butter (and dairy products in general) is organic, grass-fed, and raw. Though many of the vitamins in butter are preserved after the pasteurization process, raw dairy contains delicate

heat-sensitive enzymes that aid in its digestion. People who thought they were allergic to milk often have better luck with raw milk because it contains these essential enzymes.

Homemade Butter Recipe:

If you have a reliable source for raw cream, you can easily make your own butter at home! It will obviously be the freshest and have the best flavor. If you cannot find raw cream, you may substitute a grass-fed or 100% organic brand.

Ingredients:

2 cups raw heavy cream or 100% organic heavy cream

1/2 tsp pure sea salt or Morton's Pickling Salt

Directions:

1) Pour the cream into a mixer with a whisk attachment. The cream should not be too cold: approximately 55 F.

2) Whisk the cream on medium speed for 8-12 minutes, depending on the cream. The cream should become stiff and begin to break down.

3) Once the butter has collected on the whisk and the milky liquid has been separated, place the butter in a fine sieve and rinse with cold water until the water runs clear. This removes the remaining whey, which turns the butter sour. The remaining liquid is true buttermilk. Strain and drink if desired.

4) Squeeze as much excess water as you can out of the butter with your hands. Place on a work surface and knead it with your hands while adding the salt.

5) Wrap or place butter in a container. It will keep for 7-10 days in the refrigerator, or you can freeze it for future use.

GHEE

What is Ghee?

Ghee is a type of clarified butter that is most frequently used in Indian and other South Asian countries. It has gained some popularity in the West and can be found in many health food stores. During production, butter is simmered and the milk solids are separated and drained away from the fat (the fat that is left being the ghee). Because it does not contain milk solids, people with dairy allergies can often consume ghee without having the same reaction they might to butter. It can also be used to cook at high temperatures. Ghee keeps for a long time at room temperature, making it a great fat to take with you when traveling, so you always know you have a healthy fat option available!

Homemade Ghee Recipe:

Like butter, ghee is quite easy to make at home. You can start with your own homemade butter or with a store-bought brand (preferably organic and grass-fed). Ghee keeps for many months at room temperature, but you can also refrigerate it if you choose to.

Ingredients:

1 lb. butter, cubed

Directions:

1) Put butter into a small saucepan over low heat. Let the butter melt gently.

2) Once the butter has melted, the clear fat will separate from the milk solids. Continue to simmer gently.

3) As the bubbles get smaller, the surface of the butter will resemble a foam. The milk solids will begin to brown, clump together, and stick to the side of the pan.

4) Once the solids turn a deep golden brown color and begin falling to the bottom of the pan (approximately 8-10 minutes after bubbling begins), remove the pan from the heat.

5) Strain the ghee through a cheesecloth or fine sieve into a clean glass jar.

COCONUT OIL

Coconut oil has been used for thousands of years in tropical regions where the coconut palm abounds. As we have seen, it has been eaten—sometimes in great quantities!—by people who maintain excellent health.

Coconut oil has received a lot of attention in the past few years, and for good reason—it's an extremely healthy fat with lots of seemingly miraculous properties. As you may remember, earlier in the twentieth century, many processed foods were made with coconut oil. Coconut oil is not nearly as cheap as vegetable oils are to produce, however, which is why the latter have taken over supermarket shelves. Luckily, coconut oil is now readily available in both health food stores and regular grocery stores, making it easy to find and incorporate into your daily diet.

Healing Properties:

Nature has provided natural protective properties during growth to plants and animals. Tropical warm weather is a breeding ground for bacteria and organisms. It is for this reason that coconut oil has evolved to have antimicrobial, antiviral, and anti-fungal properties. It is the MCFAs themselves that provide the antimicrobial properties of coconut oil. Forty-eight percent of

coconut oil consists of lauric acid. When lauric acid is present in the body, it is converted into monolaurin, a compound which exhibits antiviral, antimicrobial, and antifungal properties, which may be helpful in the treatment of everything from herpes and influenza to listeria and giardia lamblia. It has also been shown to kill Staphyloccoccus Aureus, a potentially deadly pathogen that is often resistant to antibiotic treatment, and Candida Albicans, a common cause of yeast infections.

Without a plentiful source of lauric acid, the body cannot produce monolaurin and all these important benefits are lost.

Besides coconut oil and butter, breast milk is the only other natural source that contains high concentrations of lauric acid, which might explain the lower rate of infection in breast-fed babies.

Brain Health:

Coconut oil contains medium-chain triglycerides, which are absorbed by the liver and are used for quick energy or are converted into ketone bodies, which have been shown to be helpful in the treatment of certain brain disorders, such as Alzheimer's and epilepsy. The fact that coconut oil is absorbed readily makes it easier on your digestive system, allowing more energy for repair and recovery.

Weight Loss:

Coconut oil can act as an appetite suppressant and increase fat burning, even when you are at rest; therefore, it is considered a thermogenic food. In a study comparing 40% medium-chained fatty acids (MCFAs) versus 40% long-chained fatty acids (LCFAs), the thermogenic effect of the MCFAs was almost twice as high as LCFAs: 120 calories versus 66 calories!

Coconut oil has also been shown to reduce abdominal fat, which has been linked to many Western diseases, including diabetes. In one study, 40 women with abdominal obesity supplemented their diet with one ounce of coconut oil per day. This resulted in a significant decrease in BMI and waist circumference in just 12 weeks. Another study was conducted with obese men who also supplemented with one ounce of coconut oil per day. This resulted in an average of 1.1 inches lost off their waists. The remarkable thing about these studies is that there were no other changes to these individuals' diet or exercise routines. It was only the coconut oil causing the weight loss.

Coconut oil has less fat calories than other fat. Because MCFAs are smaller than other fatty acids, coconut oil contains more glycerol per gram then other oils. Glycerol is an alcohol, therefore yielding only seven calories per gram instead of nine, like regular fats.

Coconut Oil and Cholesterol:

Coconut oil's metabolic effects on the thyroid supports the conversion of cholesterol into pregnenolone. Adequate thyroid hormone and vitamin A are also essential in the conversion of cholesterol into the necessary anti-aging steroids.

Nutrient Absorption:

Coconut oil improves the absorption of calcium, magnesium, and amino acids. Also, since it is a saturated fat, it aids in the absorption of fat-soluble vitamins.

Gallbladder Removal:

When the gallbladder is removed, the small amount of bile that is transferred from the liver to the small intestine is not enough to adequately function in fat digestion, even when moderate amounts are consumed.

People who have had their gallbladder removed benefit greatly from the use of coconut oil, as the MCFAs do not require bile to be digested.

Improving Digestion:

Coconut oil is a good choice for those suffering from GI disorders and for infants because it is easily absorbed. Coconut oil places less stress on the digestive and enzyme systems, consequently conserving the body's energy.

Diabetes:

In diabetes or any other hypo-metabolic state, the cells are deprived of glucose, the fuel needed for energy. Because coconut oil does not require enzymes for metabolism, it places less demand on the enzyme production of the pancreas. Coconut oil supplies energy to the cells and improves insulin secretion and the utilization of glucose.

Topical Uses for Coconut Oil:

If you wouldn't eat it, it probably doesn't belong on the skin! Most lotions contain high amounts of PUFAs, which penetrate the skin and are absorbed into the tissues and bloodstream. The free radical deterioration of these oils dries and ages skin.

Try using coconut oil as a moisturizer in place of commercial lotions. Coconut oil is easily absorbed into the skin and makes a great ointment for the relief of dry, rough, and wrinkled skin. It is also useful as a topical ointment for eczema and other skin conditions. The antiseptic fatty acids help to prevent fungal and bacterial infections on the skin.

Coconut oil has some sun-protective qualities but is also excellent to use after sun exposure to help replenish moisture in the skin.

Coconut oil can be used as a hair treatment to help prevent breakage, soothe an irritated scalp, and improve shine. You can leave the coconut oil in your hair for an hour or even up to a day.

Oil pulling, which is a traditional Ayurvedic technique that involves swishing oil in the mouth for 5-20 minutes and then spitting the oil out, can be performed with coconut oil. This practice is said to whiten teeth, kill bacteria, remove toxins, and freshen breath. Coconut oil is particularly effective in this application because it can kill bacteria that cause gum disease and other dental issues.

Cooking with Coconut Oil:

Coconut oil is very heat-stable, which makes it well-suited to high temperature cooking as well as the temperature of the human body. Unlike unsaturated fats from vegetable and seed oils, coconut oil is slow to oxidize and is thus resistant to rancidity.

Coconut oil contains a small percentage of unsaturated fats that would be expected to become rancid. However, many experiments have shown that after over a year's worth of time at room temperature, coconut oil showed no signs of rancidity. Ray Peat suggests this is because the other fatty acids work as antioxidants.

The molecular composition of coconut oil is what distinguishes it from other fats. Coconut oil requires less energy for breakdown and is the only fat that does not require pancreatic enzymes for digestion. Coconut oil is also easily absorbed and used for immediate energy rather than being stored as fat.

How to Introduce Coconut Oil Into Your Diet:

Start by introducing one teaspoon per day and increase slowly over 3-5 days. Adverse reactions may occur if this amount is increased too quickly. If you increase to a higher intake and experience any adverse reactions, taper back down until your digestive system is strong enough to tolerate it. This will vary for everyone.

Ideas for Including Coconut Oil in Your Diet:

Coconut oil can be used in just about every recipe. In cooler temperatures, coconut oil is solid and may require gentle warming for use in certain recipes, like salad dressing.

- Add it to coffee, tea, soup or broth
- Use it to saute vegetables and fruit, or to cook eggs
- Add it to smoothies
- Take it by the spoonful
- Use it to grease pans when baking

• Soften it and use it on a carrot salad

Coconut Oil Mayonnaise Recipe:

Coconut mayonnaise is a great alternative to conventional mayonnaise minus the PUFAs. It will harden in the refrigerator, so be sure to remove it from the refrigerator for softening prior to use.

Ingredients:

1/2 cup coconut oil, melted

1/2 cup extra-virgin olive oil

1 whole egg, room temperature

2 egg yolks, room temperature

1 Tbsp mustard

1 Tbsp fresh lemon juice

1/2 tsp. pure sea salt or Morton's Pickling Salt

dash of paprika powder

Directions:

1) Mix both coconut oil and extra-virgin olive oil together in a measuring cup for easy pouring.

2) Mix the remaining ingredients in a mixing bowl or a Kitchen aid mixer and beat together with a whisk. (Please don't use a food processor or blender because the metal blades tend to give the mayonnaise a metallic taste, plus the heat from the machine can heat the oils, which needs to be prevented.)

3) Slowly add the oil into the egg mixture. Start off drop by drop until it starts coming together, then add more oil as it begins to thicken. Adding the oil too quickly will cause the mayonnaise to separate.

4) Store in a glass container.

Coconut Oil Vinaigrette Recipe:

Because of the inclusion of gelatin, this simple vinaigrette recipe is a great way to boost your protein intake! Pour it over some fresh grated carrots, beets, or jicama, or use as a marinade.

Ingredients:

1/3 cup balsamic vinegar (raw apple cider vinegar, lemon juice, or any other vinegar)

2 Tbsp Great Lakes gelatin hydrolysate

2 Tbsp Dijon mustard

2-3 roasted garlic cloves, mashed into a paste

1 cup extra-virgin olive oil

1/2 cup coconut oil, melted

pure sea salt or Morton's Pickling Salt and ground white pepper

Directions:

1) Mix vinegar and gelatin in a small bowl until incorporated.

2) Place the vinegar/gelatin mixture, mustard, garlic cloves, salt, and pepper in a glass jar or large bowl.

3) Mix with a hand-blender and slowly add the oils in a steady stream until it is fully emulsified. If you don't have a hand-blender, then a whisk by hand will be fine.

4) Keep in a glass jar. It can be stored at room temperature for a few weeks.

**Remove from refrigerator one-half hour before use to soften the coconut oil.

Conclusion

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It's obvious that the fats we eat have a direct effect on our health and well-being. It's easy to feel powerless in the face of the rising tide of illness that has swept our nation—obesity, heart disease, cancer, diabetes …

But there is something we can do. We can make a different choice about the fats we consume. We can choose not to believe the hype and propaganda that have been perpetuated by the medical and oil industries. We can continue to be pioneers and researchers in the realm of our personal health. After all, our lives depend on it!

About The Authors

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Josh grew up on the East Coast, in Boston, MA and Jeanne was born and raised on the West Coast in San Diego, California. That's right, California girl meets East Coast boy. They could not have come from two more different backgrounds, but as destiny would have it, united as EastWest Healing and Performance in 2007.

Their journeys from where they came from to where they are today, are just as different as *they* are; Josh, growing up an athlete in a very health conscious home, and Jeanne, well, not so much. As the only girl out of 5 children, affordable food, and enough of it, was the primary goal. None of which supported the severe menstrual cycles, brain fog, extreme mood fluctuations and low energy she experienced from puberty and into her late 20's.

Josh and Jeanne have spent over 20 years establishing themselves in the fitness and nutrition industry. As authors, mentors, consultants, speakers and educators to individuals around the world, Josh and Jeanne Rubin pride themselves on their approach to working with the wholeness of each individual and have dedicated their practice to helping people help themselves.

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We hope the information contained here was valuable to you. For a more personalized look at your health and to receive a FREE e-book, check out our website, www.eastwesthealing.com. We'll teach you how to use food as supplementation, manage stress and restore your health.

Once you have downloaded The Stress Reduction Manifesto, you will also begin receiving our "Understand your health, heal your metabolism!" 12-part e-course, ALL FOR FREE!

This series is loaded with valuable information regarding metabolism, physiology and nutrition, and how each one pertains to your health. In addition, we will include some simple at home assessments to help monitor your success.

Our goal is to provide you a new and refreshing outlook on how to discover long lasting and sustainable health.

Thank You!

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Thanks for reading through our short informational book about our friend, saturated fat. We sincerely hope this book was eye-opening, and that the incorporation of saturated fats in your diet in preference to other fats is as health-promoting as it has been for us, our clients, and the thousands we have inspired over the years to give it a try.

If you would be so kind, please take just a moment to leave a review of this book on Amazon. As authors, this is a big help to us, and it will also help spread the word about the falsely-maligned saturated fat. Extensive research as well as our personal experience confirms that we've been led astray on this important substance, and we'd love more than anything for this book to reach as many people as possible. The best way you can help make that happen is to take the time to leave a thoughtful and honest review on Amazon. Please do that now before you get busy doing other things and forget.

Many thanks and best of luck to you in all of your health endeavors,

Josh and Jeanne

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