

FATS: SAFER CHOICES FOR YOUR FRYING PAN AND YOUR HEALTH

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Several weeks ago I was shopping at my local co-op where I overheard a conversation taking place between two fellow co-op members regarding which fats and oils are safest for cooking. I couldn't help but eavesdrop to observe their comments, for I am passionate about the subject of fats and have studied them extensively over the past four years. As I listened to the two individuals exchange recipe ideas and the fats/oils each uses to prepare them, I was alarmed by the types of fats they considered safe for cooking. This co-op conversation inspired me to write this article with hope that our loyal readers will understand the importance of choosing safer fats for their frying pans – and most importantly, their health!

For the past 60 or more years, Americans have been on low-fat and/or poor quality fat diets. It's no surprise as to why we're suffering from such a myriad of degenerative diseases. We are, without a doubt, a society extremely deficient in **healthy** fatty acids! For those who have **not** been on low-fat diets, chances are, the fats and oils you've been purchasing from your local grocer are denatured, refined, unstable and quite frankly, dangerous to consume. The processing methods these fats are exposed to render them poisonous to our bodies - prematurely robbing us of our health and vitality!

The low-fat/no-fat approach was first promoted in the 1950's by nutrition researcher, Nathan Pritikin. Initially, Pritikin advocated a **no-fat** diet, high in un-refined carbohydrates, but long-term research revealed to him that a **no-fat** diet led to many physiological imbalances including fatigue, mood disorders (especially depression), nutrient deficiencies (especially minerals), weight issues and more. Realizing that fatty acids were necessary for balanced health, Pritikin began promoting that a **low-fat** diet, including modest amounts of *vegetable fats* (from nuts and seeds), was actually more healthful than the **no-fat** diet approach. Hence, the **low-fat** diet was born and this dangerously flawed theory is still a core dietary recommendation among dietitians, clinical nutritionists, and doctors to date.

First, let us examine how healthy fats/oils of ALL KINDS BENEFIT our well-being:

- Fats satisfy our appetites.
- Fats aid in healthy hormone production in the body.
- Fats greatly enhance mineral absorption in the diet.
- Fats provide a long-burning source of energy – especially for the heart!
- Fats build healthy bile; a substance made by the liver, stored and released by the gallbladder to aid in optimal fat digestion and emulsification.
- Fats help to nourish every cell in our bodies by providing building blocks to maintain healthy cell membranes. (Nutrients in; Wastes out!)
- Fats aid in the formation of anti-inflammatory substances in the body (prostaglandins)
- Fats allow us to heal quickly and effectively (boosts healing inflammatory processes)

Next, let us look at how fats are classified:

- **Saturated Fatty Acids (SFA's)** – highly stable in nature; do not turn rancid easily - even at higher temperatures. Saturated fat molecules are straight and stack together tightly to form a solid or semi-solid fat at **room** temperature.
- **Monounsaturated Fatty Acids (MUFA's)** – relatively stable; do not turn rancid easily. Liquid at room temperature, but semi-solid upon refrigeration.

Monounsaturated fat molecules are shaped differently than saturated fat molecules. They have a slight bend, which allows them to stack closely, yet not as tightly as SFA's. This is why MUFA's are liquid at room temperature.

- **Polyunsaturated Fatty Acids (PUFA's)** – unstable at even room temperature; easily damaged by heat, light, moisture and oxygen exposure; **refrigeration required**; turn rancid quickly and easily. Polyunsaturated fat molecules have two bends, which will not allow them to stack together well at all. Omega-3 and Omega-6 fatty acids fall in this category.

Keep in mind that all fats are a **combination** of fatty acids. Their classification is determined by the highest percentage of saturated, monounsaturated, or polyunsaturated fatty acids. For example, hemp oil has a fatty acid profile of 1g of saturated fat, *11g of polyunsaturated fat*, and 2g of monounsaturated fat. It is classified as a PUFA because the polyunsaturated type of fatty acid is most abundant in hemp oil.

The **MOST stable** and healthful fats for cooking and occasional frying at higher temperatures/smoke points are certain **animal fats and tropical oils**, which belong to the **saturated fat** family. Saturated fats have been unfairly attacked since the medical and scientific so-called “experts” falsely linked the dietary intake of saturated fat and cholesterol to the increased incidence of heart disease. The study supporting this saturated fat scare, known as the “Lipid Hypothesis”, was proposed in the 1950's by American Physiologist, Dr. Ancel Keys. The fats used in this study were hydrogenated, processed fats, known to be extremely irritating to the body, particularly the vascular system. Cholesterol acts as a healing agent to repair and protect the arteries and veins. Therefore, the more irritation, the more cholesterol will mobilize to save the day! Research now shows us that dietary cholesterol intake has VERY LITTLE to do with over all cholesterol levels, so this part of the theory was off target, as well. Today, the “Lipid Hypothesis” continues to be promoted by most medical professionals and pharmaceutical companies, as well as the modern food processing giants, who profit from such **flawed** research. Saturated fatty acids from *healthy* sources nourish the vascular system, enhance immune function, protect the liver from certain toxins (including alcohol), aid in calcium absorption, and increase cellular membrane integrity. Keep in mind that heart disease was considered a **rare** condition before the 1920's, but spiked dramatically from 1910 to 1970 as Americans began consuming less saturated animal fats to consuming increasing amounts of vegetable fats in the form of margarine, shortening and adulterated, refined oils of all types. Our not-so-distant ancestors consumed healthy sources of saturated fats each and every day with no adverse health effects whatsoever!

The **LEAST stable** fats for cooking are from **vegetable, nut, and seed sources**. High in omega-6 and/or omega-3 fatty acids, these particular types of fat molecules are extremely delicate and reactive. They become damaged and rancid easily when exposed to mild to moderate temperatures, light, moisture or oxygen. **They must remain refrigerated at all times, should NEVER be used for cooking, and should only be consumed in moderate amounts.** I personally do not keep my omega-3/omega-6 oils any longer than six months – even when refrigerated in opaque, tightly sealed bottles. I also keep fatty acid supplements in the refrigerator at all times because they can turn rancid, too!

An important note about omega-3 and omega-6 fatty acids:

Omega 3's or Alpha-Linolenic Fatty Acids are “essential” to our health. The term “essential” applies because the human body cannot manufacture these types of fatty acids on its own. We must obtain them through diet. But, please do not translate the essential status of omega-3 fatty acids as meaning that you need an abundance of them in your diet to be healthy. The opposite is true. A little goes a long way, so a modest amount (no

more than 1 teaspoon per day) is sufficient. This principle also applies to omega-6 fatty acids (Linoleic Fatty Acids). They are classified as “essential”, but we do not need to consume much of these omega-6’s. Only small amounts are needed. The Standard American Diet (SAD) contains **too many** omega-6’s and **too little** omega-3’s resulting in a grossly distorted omega fat ratio of nearly 19:1. The ideal ratio of omega-6 to omega-3 fats is 1:1. An easy way to incorporate the proper amount of omega-3 and omega-6 fatty acids into your diet is to add them in small amounts to other healthy oils. For example, prepare a balanced fatty acid salad dressing using 4 to 6 tablespoons olive oil with no more than 1 teaspoon each of omega-6 (pumpkin or hemp oil) and omega-3 (flax oil) fatty acids, sea salt and organic, raw apple cider vinegar.

The easiest way to stay within the optimal 1:1 ratio of omega-6’s to omega-3’s is to avoid ALL processed foods, which are highest in rancid, denatured omega-3 and omega-6 PUFA’s. Prepare your foods at home as often as possible from fresh, local, and organic ingredients where YOU have control over the fats you cook with, or seek out a co-op or community kitchen preparing traditional foods with the correct fats if you have a busy schedule and cannot cook often. If you decide to dine out, take your oils (and sea salt, too) along with you! My local Thai restaurant is happy to cook my dinner with the virgin, organic coconut oil I bring in when dining there. In fact, now they keep my jar of coconut oil in a special place, so it is already there when I decide to dine at their establishment! Instead of BYOB (Bring Your Own Bottle) applying to alcohol alone, perhaps we can all start a healthy fatty acid revolution where BYOB will also mean “bring your own bottle OF OIL”!

Now, let’s review how fats and oils are processed and why we should avoid these toxic “frankenfats”:

Before you add that bottle of commercially produced corn oil, vegetable oil, or tub of margarine or shortening to your shopping cart, first be sure you know *how* your oils of choice have been processed, so you may make an educated decision about the safest fats to consume to improve or maintain good health.

The ugly truth about commercially prepared oils: It’s not the oil! It’s the processing!

The first step of fatty acid processing is the **EXTRACTION** phase. Oils, naturally occurring in nuts and seeds, first need to be released for collection. To aid in the release of these oils, modern processing methods crush the nuts/seeds then expose them to heat in excess of 230 degrees! Next, the crushed nuts/seeds are pressed under great amounts of pressure to “squeeze out” the oils. The pounds of pressure used to force the oils generate additional heat, further damaging the fatty acid molecules. Next, a dangerous chemical solvent called hexane (a so-called “food grade solvent) is added to the crushed nuts/seeds to draw out the last bit of oil. Hexane is a derivative of petroleum that may cause impaired infertility and central nervous system depression, among other serious health dangers. Edible oil processors then boil off the hexane solvent for the most part, but traces of it remain – nearly 100 parts per million – in the oil! If the nuts and seeds being processed are not from organic sources, solvents like hexane act as a magnet – capturing the pesticides sprayed on them before harvesting. These pesticide concentrations show up in the end product, which is now a rancid, refined oil!

Another popular method used to process oils is **HYDROGENATION**. Examples of hydrogenated PUFA’s are margarine and shortening. This process transforms PUFA’s, which are naturally liquid at room temperature, into solid at room temperature fats so they are stable for long periods of time. This is a big plus for the processed food industry because PUFA’s are cheap oils to extract in the first place. Extending their shelf-life through the hydrogenation process makes them even more economical. It’s the health of

the public that pays the price! The hydrogenation process usually begins with extracted, already rancid PUFA oils from the EXTRACTION phase. *[Please be aware that MUFA's may also be processed, as well as certain saturated fats - mainly tropical oils. Do not consume processed/refined MUFA's or tropical oils! They are as damaging to the body as any other refined/hydrogenated PUFA oil!]* Next, tiny particles of metal in the form of nickel oxide are added to the oil, so that when it is exposed to hydrogen gas in a high-heat, high-pressure reactor, the fat molecules will be forced to chemically change their structure from a natural PUFA structure (two bends in the molecule) to that of a saturated fatty acid structure (a straight molecule). These altered molecules are called TRANS FATS. At this point, the oil has become thin and watery, as well as foul smelling – a by product of rancidity. To return the oil to a thicker, more viscous state, processors add in multiple fillers/thickeners. The odors are then removed through a steam-cleaning process, which subjects the oil to more heat, causing further molecular damage. Next, the oil is bleached to remove its dull gray color. This odorless, colorless white substance is now packaged as vegetable shortening. To produce margarine, artificial colors and flavors are added to make it resemble real butter. The end product is now a cheap PUFA oil acting as a stable saturated fat. Nature did not intend for PUFA molecules to be arranged this way and the human body cannot recognize these kinds of fats as food! When we consume extracted and hydrogenated fats, we lose the ability to utilize **healthy fats** properly. Healthy fatty acids are displaced by the “*franken-fatty acids*” cascading the body into serious health problems such as cancer, diabetes, birth defects, sexual dysfunction, heart disease, and poor bone health, to name a few. A word of advice from fat experts Dr. Mary Enig and Sally Fallon, “Your best defense is to avoid partially hydrogenated fats like the plague!” I agree wholeheartedly!

Myth: Consuming a moderate amount of TRANS-FATS is considered safe.

Deceptive labeling practices are rampant among the processed food industry. Products containing extracted/hydrogenated fats are legally allowed to claim a “no trans fats” status, when in fact trans fats are indeed present in these products. How is this possible? Trans fatty acids are clearly a by-product of processing, but the FDA allows the food manufacturer to claim “zero trans-fats” on the label if the trans-fats content is under a certain “acceptable” amount *per serving*. **FACT:** NO AMOUNT of trans fatty acids is safe to consume! In the exact words of the National Academy of Sciences, “Trans fatty acids are not essential and provide no known benefit to human health!” We must avoid these unhealthy fatty acids at all costs if we wish to be truly healthy.

How to tell if an oil is chemically processed: SIMPLY READ THE LABEL!!

AVOID all fats, oils and the products that contain them if the following processing terms are listed ANYWHERE on ANY food label:

- Refined
- Hydrogenated
- Partially-Hydrogenated
- Cold-*PROCESSED* (do not confuse this trick phrase with Cold-*PRESSED*)

INSTEAD, look for these safer processing terms on your fat/oil labels:

- Organic
- First-cold pressed or Cold-Pressed
- Expeller-Pressed
- Unrefined
- Extra Virgin

Note: These “safer” processing techniques help to retain the antioxidant profile found in fats through low-temperature, low-light and low-oxygen extraction methods. Naturally occurring antioxidants protect fats from oxidizing (turning rancid) during extraction.

What exactly happens to PUFA’s when they are improperly processed?

When PUFA’s are exposed to the stressors of processing they become rancid or oxidized forming “free radicals”. These chaotic, skewed fatty acid molecules, now in the form of free radicals, wreak havoc on the body attacking and damaging DNA/RNA, cell membranes, vascular walls, and red blood cells; all of which cascade into deeper physiological damage such as tumor formation, accelerated aging, arterial plaque accumulation, autoimmune imbalances, and more! Consuming PUFA’s in moderate amounts - unprocessed or minimally processed through safer methods - **is healthful**, so please do not avoid PUFA’s altogether. Rotating them into the diet in small amounts along with a balance of healthy sources of mostly monounsaturated and saturated fats will provide you with a BALANCED, FULL-SPECTRUM FATTY ACID PROFILE that will undoubtedly serve your health in more ways that you can imagine!

So, which fats and oils should you choose for cooking? Below is a color-coded guide to help you determine which fats/oils are safest to include in your favorites recipes.

(**Green** = Safest for cooking; **Yellow** = Safer for Cooking; **Red** = UNSAFE for Cooking)

SAFEST FOR COOKING (frying, baking, broiling, grilling and roasting)

- Lard
- Ghee
- Beef and Lamb Tallow
- Chicken, Duck, and Goose Fat
- Coconut Oil – organic and virgin
- Red Palm Oil – organic and virgin (*Palm kernel oil is also acceptable*)

Tropical vegetable fats in this category should be organic and unrefined in nature. The animal fats should be from organically raised, grass-fed/pastured animals.

Lard: Lard is the fat from pigs (pork fat). It is safe for cooking and frying due to its nearly equal fatty acid profile of 40% saturated and 48% monounsaturated fats. Lard has only 12% PUFA’s and will vary depending on the animal’s diet. Lard is a healthful source of vitamin D.

Ghee (Indian Clarified Butter): Ghee is a stable, saturated butter fat with the milk solids (casein proteins) removed. It is safe for cooking and light frying. If you are intolerant to butter, try ghee. Ghee is prepared by melting and simmering unsalted butter at a medium temperature until the water content of the butter has evaporated off. This allows the casein to separate and sink away from the butter fat. Next, the butter fat is carefully removed leaving the milk proteins behind. The butter fat is then allowed to cool and solidify to be packaged as ghee. Be sure the ghee you purchase is made from organic, grass-fed butter. There are several brands of ghee available at health markets, but if you wish to prepare your own homemade ghee, please view this helpful instructional video: <http://video.about.com/indianfood/How-to-Make-Ghee.htm>.

Beef and Lamb Tallow: Very safe for cooking and frying. Tallow fats are 50-55% saturated, 40% monounsaturated and only 3% or less polyunsaturated. Purchase from <http://www.grasslandbeef.com> (US Wellness Meats). McDonald’s first fried their French fries in 93% beef tallow (along with 7% cottonseed oil) before changing over to

vegetable oils with added chemical flavor enhancers in 1990.

Chicken, Duck and Goose Fat: These bird fats are quite stable. They are highly regarded as healthful fats in Europe and beyond. Duck and Goose fats are somewhat superior to chicken fat due to their higher saturated fatty acid content and are safer for sautéing and frying at higher temperatures. Chicken fat has a higher MUFA profile and a lower saturated fatty acid profile, so chicken fat is best used for low to medium heat cooking (quick stir-frying, light sautéing, and slow/low simmering).

Coconut Oil: This healthful tropical oil is almost fully saturated (92%). It has powerful antimicrobial and antifungal properties and contains a medium-chain fatty acid called lauric acid, which is found in abundant quantities in breast milk. I like to combine coconut oil with ghee or lard when I don't want to taste coconut in my recipes. Coconut oil is safe for cooking and frying at higher temperatures. My favorite brand of coconut oil is Nutiva. I often use it in place of butter on toast and toasted mochi.

Red Palm Oil: This deep orange/red tropical oil has a pungent, paprika-like flavor that is, in my opinion, best suited for roasting root vegetables. Try roasting red and white potatoes, red, yellow, and orange bell peppers, fresh garlic and herbs in red palm oil. Butternut squash and parsnips are also delicious when roasted in red palm oil. It is a nice change from the usual oils used for cooking and brings color to your plate.

SAFER FOR COOKING (quick stir-frying, light sautéing, and slow/low simmering)

- Olive Oil (*Unfiltered is best; should be golden yellow/green in color and cloudy.*)
- Peanut Oil
- Avocado Oil
- Macadamia Nut Oil
- Sesame Oil

These oils should ALWAYS be extracted via expeller-pressing! Read the label first!

The Olive Oil (oleic acid) Myth: Olive oil contains 75% MUFA's. It is relatively stable for cooking. There has been a rumor moving its way through the holistic community for the past several years stating that trans fats are formed when olive oil is exposed to higher temperatures. Fat expert Mary Enig does a beautiful job of explaining that this rumor is not only *untrue*, but completely lacking in supportive scientific evidence. Lightly cooking with olive oil over a medium heat (less than 400 degrees) is considered safe. Can olive oil and its MUFA molecules be damaged at high heats resulting in free radical production? Yes, but these unstable molecules are different from trans fats, so please do not confuse the two. Again, to form a true trans fat, the fat must be exposed to *extreme* pressure and temperatures, metal catalysts, chemical solvents, etc, in a closed container to actually alter the chemical structure of a fatty acid molecule from its natural "cis" formation to a "trans" formation.

Peanut Oil: Peanut oil is relatively stable due to its MUFA content. Use it occasionally for a quick stir-fry, but the key word here is "occasional". Peanut oil also has a significant PUFA content, so limited use is recommended.

Avocado Oil: A relatively new *edible* oil to the market since 1999, avocado oil has been previously used for many years as a moisturizing agent in cosmetic and hygiene products. Avocado oil is **not** extracted from the pit, rather it is extracted from the fatty pulp, which is high in MUFA's. It is similar to olive oil, so the same cooking rules apply.

Macadamia Nut Oil: Macadamia nut oil contains nearly 80% MUFA's. It is very close to the fatty acid profile of olive oil, so the same cooking rules apply. Mac oil has a distinctive, nutty flavor and is delicious in salad dressings. Look for expeller-pressed, organic UNBLENDED versions of this oil. Stores in the refrigerator for up to one year.

Sesame Oil: Like peanut oil, sesame oil is relatively stable. Sesame oil falls right between a MUFA and a PUFA (42% MUFA, 43% PUFA), but it has high levels of antioxidants for protection against oxidation, so sesame oil may be used for low-heat stir-frying or a quick sauté on a very limited basis. Combining sesame oil with olive oil and/or other stable saturated animal fats will help protect sesame oil when cooking.

UNSAFE FOR ANY KIND OF HEAT EXPOSURE! DO NOT USE FOR COOKING!

- Vegetable/Soybean Oil
- Corn Oil
- Flax Oil
- Hemp Oil
- Pine nut Oil
- Pumpkin Oil (safely roasted or raw versions)
- Safflower Oil (80% omega-6!)
- Sunflower Oil
- Grapeseed Oil

These PUFA oils are comprised of nearly half omega-6 fatty acids and should NEVER be used for cooking! If you do wish to consume these oils, do so in moderation, buy them from healthy sources and be sure that they are never refined or processed; although finding truly unprocessed versions of these oils is a difficult task! Corn and soybean oils are best avoided due to their genetically modified status and heavy pesticide levels.

Use omega-3 rich oils, like flax (and even smaller amounts of omega-6 oils) sparingly in salad dressings (add flax in small amounts to a base of olive oil); in small servings in a condiment such as homemade mayonnaise; stir them in small amounts into freshly prepared smoothies, lightly drizzle them over cold soups, dips, and hors d'oeuvres, or consume them right off the spoon in very limited quantities as a dietary supplement.

Grapeseed oil: There are many conflicting opinions about the safety of cooking with grapeseed oil. Like sesame oil, it has a higher smoke point due to its antioxidant content. Regardless, grapeseed oil is very high in PUFA's and **should not** be used for cooking.

A note about liquid Evening Primrose, Borage, and Black Currant Oils: These omega-6 fatty acids, whether liquid or contained in a soft-gel supplement, are widely available in health markets. They are nutritionally supportive to the endocrine system and are mass marketed to women especially to help balance hormones. PLEASE DO NOT COOK WITH LIQUID BORAGE, EVENING PRIMROSE, OR BLACK CURRANT SEED OILS! They are highly reactive and should never be heated. If you do wish to supplement with these oils, consume them in very small amounts as you would any other omega-6 PUFA.

The following oils are UNSAFE to consume under any circumstances!

CON-ola (Canola Oil): Even though Canola is classified as a monounsaturated fat, it is also naturally high in omega-3 fatty acids. Extracted from the hybridized rapeseed, which is a genetically modified crop, canola is a HIGHLY PROCESSED oil! The

omega-3 fatty acids in canola are delicate and turn rancid quickly during processing. Therefore, given the fact that canola oil must move through damaging extraction processes to be harvested and deodorized, it is safe to say that canola oil is **unfit for consuming**, much less cooking! It is an oil of industry and DOES NOT belong in the human digestive tract! Canola is the current oil of choice for prepared foods at Whole Foods Markets across the country.

Cottonseed Oil: Cotton is one of the most genetically modified, pesticide-laden crops in America. Besides the danger of ingesting these pesticides, when did cotton and its seed become a food? Is there anyone out there eating cotton for breakfast? I certainly hope not! Mentioned earlier in this article, the extraction and hydrogenation processes quarantine pesticides in the oil, therefore the high pesticide levels found in cotton is reason enough to recommend it as inedible! Cottonseed oil is hydrogenated most of the time and is one of the main ingredients in Crisco shortening along with hydrogenated soybean oil. Avoid cottonseed oil at all costs!

Don't forget about the health benefits of good, old-fashioned REAL BUTTER!

Butter is a dirty word among today's general population, but the **TRUTH** is our ancestors prized butter for its life-giving nutrients! Raw, unprocessed butter fat from grass-fed cows has a comprehensive fatty acid profile that protects its consumer from developing *imbalances such as hardening of the arteries, calcification of organs, glands and joints (arthritis), and cataracts. Most of us receive enough calcium from our regular diets, yet our bodies lose the ability to properly utilize this calcium intake. As a result, we show as having a calcium **deficiency** in an actual state of calcium **excess** due to a lack of the necessary cofactors (healthy fats and fat soluble vitamins) found in foods like raw butter, to aid our bodies in using calcium and other minerals in an effective manner. The excess calcium must be stored **somewhere**, so the innate intelligence of the body begins to store it in unusual places (arteries, kidneys, gallbladder, eyes, joints, etc.), resulting in the aforementioned imbalances*.

Quality raw butter contains: **Omega-3 and omega-6** fatty acids in small amounts in a healthful ratio; **CLA or Conjugated Linoleic** fatty acids for better weight management, muscle growth, and protection from cancer; **Fat soluble vitamins A, D, E, and K** to help us absorb and properly assimilate naturally occurring trace minerals (zinc, selenium, iodine, chromium, manganese, etc.) found in raw butter; **Butyric** fatty acids for protection against fungal infections and tumor growth; and **Arachidonic** fatty acids for proper inflammatory and anti-inflammatory responses to heal effectively. Butter fat enhances brain function and increases cell membrane integrity. With all these health benefits, raw organic butter should be a central dietary fat consumed each and every day.

A word to the wise about fats!

Choose your fats wisely and with GREAT CARE to ensure they have been minimally and safely processed, or better yet, not processed at all; and remember... healthy fats are **not** the enemy and healthy fats **do not** make you fat! Consume a wide variety of fats from whole oils to whole foods containing healthy fats and carefully monitor and limit your consumption of PUFA's. If you want to learn more about fats and the important role they play in balanced health, visit www.westonaprice.org and navigate to the "Know Your Fats" link in the menu on the left and read two eye-opening articles titled, "*The Skinny on Fat*" and "*The Oiling of America*". These articles are a must read for anyone wishing to regain their health and vitality. Much of the information stated in this article is from the brave and wonderful work of Dr. Mary Enig, PhD and Sally Fallon, coauthors of the aforementioned articles.

Sources:

Nourishing Traditions, by Sally Fallon

Know Your Fats, by Mary G. Enig, PhD

www.westonaprice.org – Articles: “The Skinny on Fat” and “Fats and Oils FAQ’s”, “The Great Con-ola”,
by Mary G. Enig, PhD and Sally Fallon

Nutritional Therapy Association, Inc., “Fatty Acids Module – NTT Curriculum

“The Big Fat Lie”, by Colleen Dunseth, NTP, NTA Instructor

Safety Data for Hexane: [www.http://msds.chem.ox.ac.uk/HE/hexane.html](http://msds.chem.ox.ac.uk/HE/hexane.html)

National Academy of Sciences – Article: “Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fat,
Fatty Acids, Cholesterol, Protein, and Amino Acids”

Fast Food Nation, by Eric Schlosser