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Dietary Fats – What You Need To Know!!

By Joanne L. Gordon, ND, PT

When patients come to see me, I often advise them to increase their intake of dietary fats. What I've found is that many people are confused about the benefits of eating healthy fats, especially since they have been told so many times over the years to decrease their fat intake. I wrote this article to help explain what fats are and why they are an important addition to a healthy diet.

WHAT ARE FATS AND OILS?

Fats and oils have the same basic chemical structure, the only difference is that fats are solid and oils are liquid at room temperature. All fats are made out of carbon, hydrogen and a molecule or two of oxygen. Fats and oils are technically named lipids which are further made up of molecules called triglycerides. Triglycerides are formed by the addition of 3 fatty acids to a glycerol molecule. The length and structure of each fatty acid determines how the fatty acid will function within the body.

There are 3 types of fats found in food – saturated, monounsaturated, and polyunsaturated fats. They also come in different lengths – short, medium and long-chain.

Saturated Fats – By name, saturated fats are fully saturated. This means that all the carbon atoms have hydrogen atoms attached to them. In medical books they may be pictured as C-C-C-C-C-C.

Saturated fats are found primarily in animal fats and tropical oils like coconut and palm kernel oil. They are solid at room temperature because the molecules are straight and they are able to pack together. Some saturated fats like coconut and palm oil will liquefy at 76 degrees.

Monounsaturated Fats are the most commonly available fats in our food. They include olive oil, sesame oil, almond oil, pecan oil, avocado oil, and peanut oil. “Mono” indicates one, so this type of fat has one double bond. It is delineated as C-C-C=C-C-C. When there is a double bond present in a fat molecule, it causes the structure to bend. These oil molecules cannot get close together so they are liquid at room temperature. They may solidify when refrigerated.

Polyunsaturated Fats have more than one double bond. They are represented as C-C-C=C=C-C=C. These fats are oils such as corn, safflower, soy and sunflower oil. Polyunsaturated fatty acids have lots of “curves”, so in turn; they will be liquid rather than solid. They are liquid at all temperatures.

WHAT ARE TRANS FATS?

Trans fats are fake fats. They are vegetable oils that are processed to look like saturated fats in order to prolong shelf life. Trans fats behave as saturated fats in baking; however, they do not behave the same biologically.

Trans fats do not behave like a natural fats in the body. These altered fats compromise the body's function and recent studies have proven that partially hydrogenated oils are a major cause of heart disease. Dr. Mary Enig reports that numerous studies have been done in regards to the safety of trans fats and a committee of scientists have concluded that "processed trans fats are unsafe at any level".

Luckily, the FDA has mandated a new food labeling requirement. As of January 1, 2006, food labels will have to list the amounts of trans fats present in all food products.

Trans fatty acids are formed by a process called hydrogenation. Hydrogenation is a process which changes unsaturated fatty acids into phony saturated fats. In order to make a fake fat you first have to break the C=C double bond by forcing hydrogen atoms onto the molecule. This results in a C-C single bond. The problem with hydrogenation is that it adds hydrogen to the *opposite* sides of a carbon (trans position). When the body naturally makes a saturated fatty acid, hydrogen atoms always go on the *same* side (cis position). The placement of hydrogen atoms may seem trivial, but it is extremely important for cellular function and health.

BEWARE OF FOOD LABELS

Trans fats are found in many packaged and frozen products. They are disguised with words like "hydrogenated soybean oil" or "partially hydrogenated vegetable oil". So when you read a label that says "hydrogenated", consider it to contain ingredients that are detrimental to your health.

Common products that contain trans fats are french fries, biscuits, cookies, crackers, chips, frozen pies, pizzas, peanut butter, cake frosting and candy.

Processed vegetable oils, such as corn or safflower oil, also contain trans fats because the high heat used in the extraction and refining process creates trans fatty acids. Dr. Mary Enig recommends that *processed* polyunsaturated oils such as corn, safflower, soy and sunflower oils be strictly avoided because they form free radicals that can initiate cancer and heart disease.

Vegetable oils that have been *cold-pressed* or *expeller pressed* generally do not contain any unnatural trans fats.

Vegetable oils are not recommended for cooking because polyunsaturated fats are highly unstable and will breakdown and form dangerous free radicals when heated.

WHY ARE TRANS FATS UNHEALTHY?

Dr. Bruce Fife, N.D., author of the Coconut Oil Miracle, states that trans fatty acids have been linked with a variety of adverse health effects, including cancer, heart disease, multiple sclerosis, diverticulitis, complications of diabetes and other degenerative diseases.

WHY WAS COCONUT AND SATURATED FATS CONSIDERED BAD?

Lorna Vanderhaeghe, author of *Healthy Immunity*, states that nearly 4 decades ago experimental diets mistakenly concluded that coconut oil raised blood cholesterol levels. She states that scientists now conclude that coconut oil was not the villain and health problems were caused by the omission of essential fatty acids (EFAs) in the diets, not by the inclusion of coconut oil in them. Diets that include any hydrogenated products always result in high serum cholesterol levels because these products contain harmful fatty acids and lack heart-healthy EFAs. She goes on to state that MCT found in coconut oil do not clog arteries, nor do they cause heart disease.

WHICH FATS ARE RECOMMENDED FOR COOKING?

Saturated fats are highly stable and do not break down with high temperature cooking. They are preferred oil for high heat cooking because they are less likely to form dangerous free radicals. Polyunsaturated fats are not recommended for higher temperatures because they easily breakdown and form dangerous free radicals. Excess free radicals are detrimental to our health and contribute to heart disease and increased cholesterol.

Sally Fallon, author of *Nourishing Traditions*, says that the best oils for cooking are animal fats such as butter, ghee, lard, tallow, duck fat and goose fat. She also recommends coconut oil for baking and frying.

Dr. Jordan Rubin, NMD, author of *The Maker's Diet*, states that natural, unprocessed coconut oil is the healthiest most versatile dietary oil in the world. Coconut oil can withstand high temperatures and cooking with it doesn't denature the health supporting properties of the oil – and it's not prone to rancidity, like many other more fragile oils.

Extra virgin olive oil, a monounsaturated fat, is best used as a salad dressing and for light sautéing. Olive oil will breakdown with high heat cooking.

WHAT ABOUT ESSENTIAL FATTY ACIDS?

There are 2 essential fatty acids – Linoleic acid (omega-6) and linolenic acid (omega-3). Both are polyunsaturated fatty acids. They are essential because the body cannot make them and they must be taken in through diet.

Dr. Schmidt, MD, author of *Smart Fats*, states that “essential fatty acids are the foundation upon which our bodies make the vital brain-fats and vital messengers that help regulate a vast array of body activity and without them our bodies will run out of the building blocks our cells require to maintain peak function.”

There are four conditionally essential fatty acids; gamma-linolenic acid (GLA), arachidonic acid (AA), eicosapentanoic acid (EPA), and docosahexanoic acid (DHA). These fatty acids can be made by the cell; however there are many instances where people have difficulty producing them.

Linoleic acid (LA) is commonly found in foods such as the oils of sunflower, safflower, corn and sesame. Alpha-linolenic acid (ALA) is found in foods such as the oils of flax and walnut, and green leafy vegetables.

Other healthy fats include omega-3 fatty acids (cod liver oil, egg yolks, flax oil), medium-chain fats (coconut oil, palm kernel oil, butter) and long-chain saturated fats (found in meat and dairy).

DO FATS MAKE YOU FAT?

Having the right kind of fats in your diet will not make you fat. Medium chain triglycerides (MCTs) are saturated fats found in coconut oil. MCTs do not cause weight gain, but actually cause weight loss! Drs. Murray and Pizzorno, authors of *The Encyclopedia of Natural Medicine*, stated that MCTs promote weight loss by increasing thermogenesis (body heat). They report that MCTs are rapidly burned as energy and actually promote the burning of other fats.

THEN AND NOW

Before I began researching more about fats, I was led to believe that vegetable oils (polyunsaturated fats) were good for me. However, after learning about Dr. Mary Enig's work, I have learned more about the benefits of saturated fats and essential fatty acids. I began adding saturated fats into my diet in the form of coconut oil, 3 -4 TBSP per day (I was already taking cod liver oil daily). Since then, I have noticed a tremendous difference in my health and well-being, especially in regards to my energy and appetite.

References:

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Schmidt, Michael. 1997. *Smart Fats*.
Vanderhaeghe, Lorna. *Healthy Immunity*.
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Murray, M., and Pizzorno, J. 1998. *Encyclopedia of Natural Medicine*.
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Temperature Chart for Cooking

High Heat (375°F / 190°C) - high heat sautéing
Saturated fats – Coconut oil, Ghee

Medium Heat (325°F /165°C) - light sautéing
Monounsaturated fats
almond oil, hazelnut oil, olive oil, pistachio oil, sesame oil, macadamia nut oil, avocado oil

Low heat (212°F / 100°C) - sauces / baking
Polyunsaturated fats
safflower oil, sunflower oil, pumpkin oil

No Heat (120°F / 49°C) - condiments, salad dressings
Superpolyunsaturated fats
Flaxseed oil, walnut oil, EFAs