FAT IS NOT THE ENEMY: A New Perspective On The Pros And Cons Of Oily Foods

Adapted from The Mood Cure by author Julia Ross, M.A.

Your body is supposed to be full of fat, about 18 percent if you're a man and 28 percent if you're a woman. Your brain must be particularly fatty. At least 60 percent of it should be composed of very particular fatty substances that have to be constantly replaced. The brain and body (including the heart!) require high quality fats to perform very complex physical-and-mental-health-related duties. To feel your best, you need to feed regularly on the finest fatty foods. If you're wondering how *any* fatty foods could actually be good for *anything*, you're about to get a nutritional villain adjustment, so hold on to your hat.

To start with, think of the positive words associated with fat: rich, shining soft, cuddly... In ancient times, fat was associated with joy, wealth, and even sanctity. Healthy fats are essential to life!

By 2006, even the fat phobic American Heart Association became so concerned about our fat needs that it dropped its restrictive 30 percent fat recommendation altogether!¹ Instead it urged us to eat more fatty fish and toughened its stand against high carb foods. Why? It caved under the overwhelming evidence. It recognized that happier and healthier cultures all over the world had a higher intake of certain fats than the AHA had recommended for us in the U.S. and that low fat had led to neither lowered rates of heart disease nor lower weights. (Quite the reverse, in fact.) It also recognized that the "low fat" sweets and starchy carbohydrates that we'd been eating in this country in our efforts to cut fat had led to record rates of a new health and mood scourge—diabetes. The incidence of diabetes had *doubled* in the past 30 years, and one in three children had become victims of this deadly epidemic fueled by carbs, not fats.

HEALTHY FAT SURPRISE: *saturated Fats* - Now for some real fun. Think of the fatty foods you'd love to eat if you thought they wouldn't kill you or cause unneeded weight gain. When I tell my clients that butter and sour cream are safe and healthful, they beam incredulously as if a loved one were being returned from the dead. Little do they know that they may be the loved one in question. We have been "good" for 30 years. We've cut down hard on what we thought were "bad" fats, meanwhile stocking up on "safe" vegetable oils and hydrogenated fats, but the results have been terrible. Heart disease has continued to escalate and cancer and diabetes have become epidemic.

So, now are you ready for some good news about cream cheese, whole fat yogurt, chicken skin, and coconut milk? I know that this is going to be hard for you to swallow. Part of it is the term *Saturated Fats*. Let me give it a new spin. Let's call it *SAT*: short for *SATISFYING*. All saturated fats are complete in their molecular structure, unlike the omega-6 and omega-3 polyUNsaturated fat molecules that look like combs with broken teeth. Their density gives SATs their undisputed stability. It's why they don't get rancid, something we've always known.

Could these disreputable fats actually be healthful? Yes! The same study that convicted the trans fats in margarine and shortening of murder by heart disease, also pardoned the saturated fats. *"There was no association between intake of saturated fat and the risk of coronary death."*² The scientific literature is loaded with this exonerating evidence. In fact, *SATs are the preferred energy source for your heart* because they burn at such a reliable pace, much steadier and longer than carbs do. *Many studies confirm that saturated fats can also protect you from stroke.*³

One of the most extraordinary benefits provided by these creamy fats we've been avoiding all these years is that they protect our tissues from rancidity, especially the precious, but fragile, omega-3 fats in our brains and arteries. SATs also reduce the negative effects of excess omega-6 fat; and they can actually lower levels of the most potentially damaging omega-6 fat, arachidonic acid.^{4 5} (More on the dangers of high omega-6 vegetable fats, like soy and corn oil, later.)

Four recent studies, three on type II diabetics and one on mildly obese men and women, used a *high saturated fat, low carb diet.* Their results: *all showed improvement in cholesterol levels, weight, and insulin levels.*^{6 7} But these studies are really just confirming common sense. Most people all over the world have always consumed lots of saturated fat and thrived physically and emotionally. We did, too. *In 1909 we consumed about 26 pounds of saturated fat per year and nine pounds of omega-6 fats* (on top of what was in eggs, meat, etc.). *In 1998 we consumed less than nine pounds of saturated fat and 66 pounds of omega-6 fat!* SATs are *not* our problem. The omega-6's in margarine and vegetable oils are the problem.⁸

You can safely cook with SATs, because at a heat that would toxify any vegetable oil, the sturdy SATs hold up. *SATs are also great for energy,* converting slowly and steadily into cellular fuel as needed. *This keeps your blood sugar levels rock solid*, which means your mood and vitality level stay more solid, too! Plus your craving for carbs drops off. Saturated fat is a wonderful, steady, stress-relieving energy fuel that *athletes use to perform better*.

Our obesity epidemic is partly due to SAT deprivation. Without SATs, food is not satisfying, so we tend to eat too much of the carbs and vegetable oils that we do allow ourselves. Refined carbs and the commonly used vegetable oils both increase unneeded weight as well as a myriad of health problems that I'll discuss later.

Not only do we experience better endurance with saturated fat, but our immune systems are actually enhanced by it as well, in contrast to the immunity-lowering effects of low fat foods.⁹ Ghee (clarified butter), coconut and palm oils are the fats traditionally used for cooking all over the world by people whose weight and freedom from degenerative diseases are much better than ours are!

The crucial vitamins A, D, and E cannot be absorbed into our bodies without their carrier saturated fats. Nor can calcium! For example, spinach has lots of calcium, which is not absorbed well unless it's eaten with butter (or olive oil, which also contains some SAT). Same principle with collard greens and bacon fat.

Now let's take a look at my personal favorite SAT. *Butter* is so packed nutritionally, with its 10 vitamins, 10 minerals, 18 amino acids, and 11 kinds of fat, that it's hard to know where to begin. It's tremendously high in vitamin A, which it helps deliver to your eyes (night vision is absolutely dependent on an adequate vitamin A supply). Vitamin A regulates the female sex hormone progesterone, too, providing many mood as well as fertility and other benefits. "A" also stands for Anti-tumor, and saturated fats like butter assist vitamin A absorption and uptake in this life-preserving function, but too many Omega-6 fats can block it.¹⁰ Then there's butter's butyrate, the fastest burning of all fats. This very special fatty acid is used extensively in your brain. For one thing it serves as a base for making GABA, your natural Valium (GABA stands for gamma amino *butyric* acid.) It can also protect you from colon cancer and is used as a medicine in precancerous colon problems to do just that.

SATs and Other Fats Fight Food Addiction

How did I lose my own fear of SAT fats? Through twenty years of working with people who had eating disorders. Our under- and overeaters have often had one thing in common. They avoid fats and love carbs. The anorectics still love their bagels, apples, or jellybeans, and the overeaters often avoid fat, too, to save their calories for pure-carb binges.

After years of trial and error, we developed some successful nutritional treatments. The first thing that worked was increasing protein, which helped stop everyone's moodiness, overeating, and obsessiveness. We added lots of vegetables as the only carbohydrates allowed, and tried to keep fat levels low. At the same time we expected our clients to exercise regularly. But this low-fat and low-carb diet didn't give them enough energy. It didn't always lower the high cholesterol levels of some of our overeaters either. Because nuts and seeds were often binge foods, we couldn't recommend them, so we tried a new food plan that ended up working like a charm. It was very simple: high protein, high vegetables, and high--mostly saturated--fat. No sweets (even fruit) or high-starch foods at all. The results: no cravings, high energy, sturdy blood sugar levels, *satisfied* with the food, mood fine, weight normalizing, and lowered cholesterol!

Several cardiologists, notably Robert Atkins, M.D., have since reported the same thing and research on The Atkins Diet—even higher in fat and lower in carbs than our clinic's diet--has confirmed their reports.¹¹

When the brain and body receive the specific fats they've been starved of, they quit sending out desperate calls for fries and chips. If adding saturated fats alone does not stop fat cravings, we add supplements of omega-3 (EPA and DHA) fat, GLA, and the fat-soluble vitamins A, E, and D. (We test vitamin D levels first.)

What Is Carb-Fat?

How is it that too many carbohydrates can cause such an increase in body fat? Because when there are *too many carbs, they have to be converted into stored fat in the muscle*. From there they can be reconverted into carbs for the muscle to burn as fuel if we exercise regularly and vigorously. But we're more sedentary now than ever in history, and there is simply so much carb being converted into body fat that even people who work out daily can't burn off the overload. Worse, sweets and starches are converted into thick substances called *triglicerides* to be carried through the bloodstream to the muscles. This high-trigliceride clogging of the arteries poses an enormous new cardiovascular health risk.

The Good News About Cholesterol

Cholesterol is not a fat, but I could go on at the same length about the health and mood benefits of cholesterol as I just have about the benefits of saturated fat. Let me just say that a cholesterol level between 180 and 260 seems to be ideal.¹² With levels above or below that range, we can have more health troubles, but more of the trouble than you think comes with cholesterol levels that are too *low*, rather than too high. A 40-year study of 4000 people in Hawaii found that *"the earlier that patients start to have lower cholesterol concentrations, the greater the risk of death."¹³ Many other studies concur.*

Surprisingly, cholesterol is one of the most valuable nutrients there is for stress-coping, since it is the substance that's used by our adrenal glands to make our stress-coping hormones. Our sex hormones are also made from it. If you've been avoiding it stringently, you may have innocently compounded all kinds of. problems.

Low cholesterol is firmly associated with depression, anxiety, irritability, violence, suicide, and insomnia partly because, in the brain it is essential for our natural antidepressant serotonin production.¹⁴ Autistic children are typically very low in cholesterol and are actually being treated successfully--with cholesterol!^{15 16} A huge amount of the brain, about 25 percent of it, is cholesterol. Cholesterol is (surprise!) an antioxidant that actually protects our tissues, including our brain tissues and arteries. Cholesterol is not a fat; it's an alcohol that we can make from many foods. Cows obviously make it from grass. Avoiding fat, therefore, is not a particularly effective cholesterol-lowering tactic, even if you are someone with truly high cholesterol. Books that will tell you much more of the fascinating true cholesterol story are *The Cholesterol Myths: Exposing the Fallacy That Saturated Fat and Cholesterol Cause Heart Disease* by Uffe Ravnskov, M.D., and Good Calories, Bad Calories: Fats, Carbs, and the Controversial Science of Diet and Health by Gary Taubes.

Coconut Fat: Now let's talk about my second favorite SAT, the delectable one that makes so many of my clients smile when I recommend it: *coconut milk*. Do you enjoy this food in Thai cooking? I defy you to find more beautiful or cheery people than the Thai. They, like so many equally healthy peoples in southern climates eat lots of this saturated fat. Coconut fat contains powerful antiviral and anti-fungal fats and is a bit more stable even than butter, too, as it is a little more saturated (think satisfying, satiating, and rancidity resistant). That's why the milk and oil of the coconut is so safe as well as yummy to cook with.

The Omega-3 Fats - This health-and-mood-promoting-fat belongs in special places like your brain and your arteries. We don't need lots of O-3, but getting enough is essential to life. Every time you consume this extraordinary oil, your brain gets first dibs, because no other fats can do as good a job. As I'll explain later, the "other" **essential fats**, omega-6s, may be your brain's and heart's worst enemies and the cause of some of your worst mood and health problems. For example, the rate of depression between individuals correlates precisely with the ratio of omega-3 fats to omega-6 fats in their brain. The more omega-3, the better the mood and heart-health; the more omega-6, the worse your mood and heart-health. In the U.S., we are very low in our omega-3s. If we add more omega-3, we can instantly raise a potent chemical called dopamine by 40 percent!¹⁷ That translates to significantly enhanced mental and physical alertness and energy.

It turns out that, among other things, omega-3 is an MAO inhibitor, meaning it paralyzes the MAO enzymes that destroy mood-boosting brain neurotransmitters like dopamine.¹⁸ Believe it or not, these fats can even be over-stimulating to some people. If you find yourself waking up bright and alert at 4 a.m. after too much omega-3 supplements, you'll have to cut back.

Depression is being treated successfully now with this fat, ¹⁹ and ADD and alcoholism are also showing preliminary clinical response. ^{20 21} Alzheimer's and schizophrenia are clearly affected by altered fatty acid function, ^{22 23} and research on omega-3 therapy **looks** promising.

And, as if all this weren't enough, after you've been eating more omega-3s for a few months, and your brain's needs are met, the *omega-3s will move into the linings of your arteries* and remove any plaque that has built up in your body's botched efforts to repair its linings without enough of its preferred omega-3! The many studies on omega-3's positive impact on artery health and heart disease are heartening!^{24 25 26}

How much do you need and where can you get the omega-3? Omega-3 fat comes in two forms: a ready-for-brain-and-artery-use form found only in fish, and a cruder form found in flax seeds and some other foods in very small amounts. The latter is a shorter form of omega-3, ALA (Alpha Linolenic Acid), that has to be worked over by certain enzymes that two thirds of us don't have, and that decline with age. For all of us, ALA helps the body expel the excessive omega-6, but can't be reliably used to form the long chains that our brains need. These brain chains should wrap around in our brain cells, forming very special membranes that can transmit billions of molecular messages instantly and accurately. These fatty chains are called docosahexaenoic acid (DHA) and eicosapentaenoic acid (EPA.)

Fish fat is full of EPA and DHA, the ultimate omega-3 fats. Fish like sole contain some, and there's a little bit of the shorter ALA (flax-like) version in almost all fatty foods, both animal and vegetable. But by far the best sources of the omega-3 fats are wild salmon, sardines, herring, anchovies, and mackerel. They have about *three times more omega-3* than other fish and 5 times more than flax seed oil. Their good-health fat is especially concentrated in and under the skin. (So enjoy this crisp and delicious part of your fish.) These fish are also likely to contain much less toxic mercury than larger fish such as tuna and swordfish.

To get enough vital omega-3 fats, you'll need to eat fish more often, as your ancestors did. For example, the Japanese still eat two and a half pounds of fish weekly, and their depression rates have been historically nil, as have their heart disease rates. But when was the last time *you* ate fish five times a week? That's how much you might need to eat, at least for awhile, to get enough omega-3s to elevate your mood and energy and counterbalance the years of omega-6 build-up.

The recommendations regarding the ideal ratio between the two fats ranges from 1:1 to 4:1, omega-6 to omega-3, but in the U.S. the ratio is now over 25:1.²⁷ The vital ratio has begun to change in Japan now, too. Imitating their friends in the U.S., the Japanese have been eating too much of the omega-6 vegetable oils and trans fats, and depression, heart disease, and cancer rates are increasing dramatically as a result. In fact, *the Japanese scientific community formally announced in 1997 that the high omega-6 vegetable oils are almost solely responsible for their new health problems and are "unfit for human consumption.*"²⁸

In the U.S. we used to get quite a bit of omega-3 from meat and chicken as well as fish, but now most of these animals are fed grain high in omega-6, rather than grass, hay, or bugs with higher omega-3 content. Grass-fed beef is coming back, though, and it's *14 times* lower in omega-6 fats.

According to the FDA, we can safely eat 2.2 pounds of fish a week (preferably not higher omega-6 farmed fish). That's about five or six servings weekly. Unfortunately, because of the recent acknowledgements of high amounts of mercury and other pollutants in many fish, I would not recommend fish more than three times a week, and I would recommend great care in choosing your fish, especially if you are pregnant. *Note: Remember, don't cook that fish in high omega-6 oil, and don't dress it with mayo or tartar sauce, unless made yourself with olive oil.*

Fortunately, we can take contaminant-free, molecularly-distilled fish oil supplements to help fill our omega-3 quotas. Your Basic Supplement Suggestions include about two grams a day of fish oil (combined DHA and EPA). That's the equivalent of one-quarter pound of salmon or sardines a day. If you also eat fish at least twice a week you'll make your omega-3 quota nicely. (And get some excellent, tasty, quick-to-prepare protein, to boot!)

Note: Flax oil is only helpful *in the brain and arteries* for one third of us, at best. The rest of us can't convert its crude ALA omega-3 fat into DHA and EPA. Even those of us who can convert the ALA in flax need to use five times more of it than of the fish oil to get equivalent potency. This much flax oil would be excessive because flax also contains significant amounts of omega-6 fats which seems to pose problems for the prostate gland.

Omega-9 Fats: The oil most endowed with this lovely fat is *olive oil*. Just being the *only* oil that you can still safely use on your salads, now that I've demoted most of the high-omega-6 competition, should qualify olive oil (extra virgin olive oil to be precise) as a major mood and health champion. Olive oil contains very little of anything but *omega-9 fats, which are almost as stable as saturated fats*. It also contains a little saturated fat, and almost no omega-6 fatty acids, so it doesn't get rancid easily. It keeps well in a cool dark place, even after it's been opened. Although it's low in the omega-3s, the omega-9s in olive oil are very supportive of the omega-3s, and they can *specifically help promote serotonin's antidepressant and anti-carb craving activities in your brain.*^{29'30}

The other nuts and seeds highest in omega-9 (but low in omega-6) are cashews and macadamia nuts and high oleic (i.e., high omega-9) sunflower and safflower oils. *Note*: Frying destroys omega-9 fats, but sautéing with them is fine. Peanuts, almonds, filberts, hickory nuts, and pistachios are high in omega-9, too, and somewhat lower in omega-6 than other nuts and seeds. (Eat them in small servings, though, because they do still contain considerable omega-6s.)

Together with happy omega-3 fats from fish and satisfying saturated fats from foods like butter, olive oil is a primary fat source for some of the healthiest people on earth. In the Mediterranean, for example, the people of Crete and Italy, are certified with world-class health. A 93 year old woman from the Mediterranean coast of Syria, in perfect health and mood, told me recently that she still uses only extra virgin olive oil for her salads and vegetable sautés, and eats fish four times a week, plus lots of saturated-fat-rich lamb and butter.

Perfect Blender Olive Oil Mayonnaise

Combine in a blender container:

1 large egg 1 T. vinegar 1/2 t. salt 1/4 t. dry mustard 1/8 t. paprika dash ground red pepper

Cover and blend about 5 seconds. With blender running *on the slowest speed*, add **1/2 cup extra virgin olive oil** in the thinnest stream you can, still making a stream. For best results, the stream of oil should hit the combination in the container halfway between the side of the container and the vortex in the middle.

Add **1 T. lemon juice;** running the blender on the slowest speed, gradually add **1/2 cup more extra virgin olive oil.** If the oil quits moving into the vortex, stop the blender and break the

surface tension of the mayonnaise, using a spatula to scrape the sides (sometimes just turning the blender off and on again will do this). Store for up to 4 weeks in a tightly covered jar in the refrigerator. Makes about 1-1/4 cups.

WHICH FATS CAN'T YOU TRUST?

The top awards for bad-health-fats go to the "lite fats": vegetable oil and the margarine and shortening made from it. I don't mean extra virgin olive oil, which is a Good-Health Fat. I am referring to such staples as corn oil, soy oil, canola oil, peanut oil, sesame oil, wheat-germ oil, and cottonseed oil. The reason that we didn't use these oils much before 1930 was that we preferred traditional fats like butter, cream and lard. We used coconut and palm oil a lot then, too. And not so coincidentally, our rates of depression, heart disease, and cancer were much *lower* then.

All that was changing by 1970, however, because by then the medical establishment had begun telling us that the saturated fat in butter and other dairy products could cause heart attacks, and that the polyunsaturated fat in vegetable oil and margarine was more beneficial for our hearts. By the 1960s, vegetable oil and margarine had become favorites in the American kitchen, at what now appears to be the cost of a significant measure of both our health and our happiness. In what way are these toxic fats "lite"? They are light on the expense side of the food industry ledger. Olive and coconut oils cost more.

What's the problem? First, These oils are very unstable—that is, they can become dangerously rancid very quickly. Rancid means oxidized, and in your body, oxidized means damage to your cells and tissues, especially to the areas rich in fat, such as your brain. You know what happens when an apple is exposed to the air: Oxidation is the process that turns it brown and makes it "go bad." If you eat vegetable oils that are already oxidized from the heat and light as well as the exposure to oxygen in the air during processing and the removal of the unsightly but protective antioxidant vitamin E (its brown in color), you are exposing your own healthy tissues to a volatile substance that will damage them. Here's where butter is truly better. You can keep it on the table for days at a time and it won't spoil. Why? It's not damaged by light and heat, and it's packed with antioxidants that prevent oxidation. But vegetable oils have had their antioxidants-primarily the uply brown-colored, but irreplaceably protective vitamin E-removed and destroyed in processing. The reason they don't smell rancid is that they've been deodorized by being exposed to high heat. Unfortunately, all this processing makes these oils hopelessly rancid by the time we pour them onto our salads and skillets or add them to our recipes. Oxidation, or rancidity, is a major contributor to most degenerative disease, and we consume, on average, 66 pounds a vear³¹ of rancid vegetable oils, 400% more than we did in 1920.

Omega-6 vegetable oils are pressed out of seeds, nuts, and beans. We need a little O-6 on a regular basis. In fact it's considered essential. We need it to clot our blood, shed the lining of the uterus when we menstruate, and constrict our blood vessels, for example. Inflammation, though, is the thing that most of the omega-6 fats are best known for. Inflammation is useful. Up to a point. It helps kill things like viruses and bacteria. But over-consuming omega-6 can result in overkill of healthy tissues all over the body, including the brain. For example, chronic inflammation of the brain can interfere with neurotransmitter functions in any number of brain cells. *Omega-6 interference with the neurotransmitter dopamine can lead to Parkinson's disease, bipolar moods (manic depression), ³² schizophrenia, and obsessive-compulsive disorder³³.*

Too Much of a Bad Thing: It's a combination of rancidity and inflammation, plus excess that makes the omega-6's such a serious modern health hazard. We used to get the small amounts of O-6 we needed from eating meat, whole grains and beans, and from seeds and nuts that we'd keep in their freshness-maintaining shells till we were ready to eat them. Now these damaged vegetable oils are the only oils many people *ever* eat or cook with. They're also the primary oils used in almost all packaged baked goods (baked bads) like crackers and cookies, salad dressings, and mayonnaise.

These fats have even crept into important foods that used to be almost totally omega-6free. Fish, meats, and poultry are now raised on high o-6 grains instead of low-omega-6 algae, grass, and bugs. There is no question that our ever-increasing rates of depression, heart disease, and cancer have been direct results. The Japanese and Israeli scientific communities have concluded, after several decades of consuming these "Western" oils and suffering epidemic increases in "Western" diseases as a consequence, that the high omega-6 vegetable oils have been a disaster for their people. A grim report to the National Institute of Health by the top Japanese lipid scientists concluded that *omega-6 vegetable oils "are inappropriate for human use as foods.*"⁸⁴

Trans-fatty Hearts: Putting its terminal rancidity and inflammatory effects aside for the moment, lets move on to the final nail in the omega-6 coffin (and our coffins, if we eat it). Let's look at what is done to these rancid oils, so liquid by nature, to make them harden into the *margarine* and *shortening* that we find in most prepared food, and use at home to "protect" our hearts.

These fragile, already damaged vegetable oils, so ultra-sensitive to heat, are boiled for many hours with hydrogen and bits of nickel until their essential molecular structure is entirely changed into a "hydrogenated" or "trans" (think trans-formed) fat. The toxicity of this "trans" fat *far* outstrips any dangers attributed to saturated fats (except for saturated fat that is hydrogenated!) Hydrogenation (trans-forming) turns any fat into something that a biochemist friend calls "one step away from a plastic." The process not only keeps liquid fats firm, it keeps them firm forever. Shelf life versus your life.

The evidence, building for decades, exploded in the 90s with dozens of studies describing the fatal effects of the hydrogenation of our arteries and hearts. One of many similar studies found "... a significant association between the intake of trans-fatty acids and the risk of coronary death."³⁵

Okay, so vegetable oils are killing us, but do they really have that much to do with our moods? Yes! For the first time in history, we have been using these oils in huge quantities. When we eat too much O-6, even from fresh, non-rancid nuts or seeds, for example, it takes over. Most notably in terms of our moods, it takes over our brains. In addition to provoking the damaging brain inflammation I've just mentioned, there's another kind of brain malfunction that it sets in motion. O-6 molecules are similar in form (long and slinky) to those of another fat—the omega-3s that we're *supposed* to use to make our brain's cell walls out of. *When we don't get enough of the right omega-3 stuff and pinch hitter O-6 steps in, our brain cells quit sending and receiving signals properly. This is a disaster for our moods. It's very clearly an issue in depression, with rates of depression rising right along with our brain's O-6 levels as they take the place of the Good Mood omega-3 fats³⁶.*

These "partially hydrogenated" fats still corrode nearly every packaged food on the market shelf from Triscuits to Pop Tarts, *though many manufacturers still don't list them among their ingredients*. Trans fats prevent your brain from utilizing brain-protective omega-3 fats, thus contributing to the takeover by omega-6 fats that leads to depression and other kinds of mood disruption.

We do need a small amount of the essential omega-6 fats--where can we safely find them? In *fresh* nuts and seeds. Just a handful a few times a week. (Remember, saturated fat and olive oil also contain some O-6 fats.)

We need to stop using the Bad Health Omega-6 vegetable oils, hydrogenated trans-fats or not, and start using lots more of the healthier fats that I have already discussed. This is a tough order, since it involves avoiding processed foods like mayonnaise and prepared salad dressings, in addition to all those crackers, granola, chips, and cookies. It will take a while for you to identify the culprits at the store and dodge what you can when you eat out. But it will be worth your life as well as your mood! ¹ Closing session resolution of the 2001 American Heart Association Conference held in Anaheim, CA, Nov 14, 2001, due to the doubling of the incidence of diabetes after the earlier recommendation of below 30% dietary fat became policy and practice.

Pietinen P, Ascherio A, Korhonen P, Hartman AM, Willett WC, Albanes D, Virtamo J. "Intake of fatty acids and risk of coronary heart disease in a cohort of Finnish men. The Alpha-Tocopherol, Beta-Carotene Cancer Prevention Study." Am J Epidemiol 1997 May 15;145(10):876-87

Gillman MW, Cupples LA, Millen BE, Ellison RC, Wolf PA. "Inverse association of dietary fat with development of ischemic stroke in men." JAMA 1997 Dec 24-31;278(24):2145-50. Comment in: JAMA. 1997 Dec 24-31;278(24):2185-6. JAMA. 1998 Apr 15;279(15):1171-2; discussion 1172-3. JAMA. 1998 Apr 15;279(15):1172; discussion 1172-3. JAMA. 1998 Apr 15;279(15):1172; discussion 1172-3.

Bibby DC, Grimble RF. "Tumour necrosis factor-alpha and endotoxin induce less prostaglandin E2 production from hypothalami of rats fed coconut oil than from hypothalami of rats fed maize oil." Clin Sci (Lond). 1990 Dec;79(6):657-62.

Tappia PS, Grimble RF. "Complex modulation of cytokine induction by endotoxin and tumour necrosis factor from peritoneal macrophages of rats by diets containing fats of different saturated, monounsaturated and polyunsaturated fatty acid composition." Clin Sci (Lond). 1994 Aug;87(2):173-8.

Wilson MD, Hays RD, Clarke SD. "Inhibition of liver lipogenesis by dietary polyunsaturated fat in severely diabetic rats. J Nutr 1986 Aug;116(8):1511-8.

Westman Eric C., M.D., "Low-Carb Diet Offers Second Tier Therapy for Type II Diabetics" Journal of the American College of Nutrition (1998;17:595-600)

8 Economic Research Service/USDA; Per Capita Consumption Data System. Added Food Fats and Oils 1909-1998.

Singh RB, Niaz MA. "Genetic variation and nutrition in relation to coronary artery disease." J Assoc Physicians India 1999 Dec;47(12):1185-90

Sani BP, Allen RD, Moorer CM, McGee BW. "Interference of retinoic acid binding to its binding protein by omega-6 fatty acids." Biochem Biophys Res Commun. 1987 Aug 31;147(1):25-30.

¹¹ W.S. Yancy Jr., M.K. Olsen, J.R. Guyton, R.P. Bakst, and E.C. Westman. "A Low-Carbohydrate, Ketogenic Diet versus a Low-Fat Diet To Treat Obesity and Hyperlipidemia. A Randomized, Controlled Trial." Annals of Internal Medicine, 2004 May18: 140:769-777).

Taubes, Gary. "Nutrition: The Soft Science of Dietary Fat" Science Mag 2001 Mar ¹³ McGee D, Reed D, Stemmerman G, Rhoads G, Yano K, Feinleib M. "The relationship of dietary fat and cholesterol to mortality in 10 years: the Honolulu Heart Program." Int J Epidemiol 1985 Mar;14(1):97-105

¹⁴ Scanlon SM, Williams DC, Schloss P. "Membrane cholesterol modulates serotonin transporter activity." Biochemistry. 2001 Sep 4;40(35):10507-13.

¹⁵ Tierney E, Bukelis I, Thompson RE, Ahmed K, Aneja A, Kratz L, Kelley RI. "Abnormalities of cholesterol metabolism in autism spectrum disorders." Am J Med Genet B Neuropsychiatr Genet. 2006 Sep 5;141B(6):666-8.

¹⁶ Aneja A, Tierney E. "Autism: the role of cholesterol in treatment." Int Rev Psychiatry. 2008 Apr;20(2):165-70.

Chalon S, Delion-Vancassel S, Belzung C, Guilloteau D, Leguisquet AM, Besnard JC, Durand G. "Dietary fish oil affects monoaminergic neurotransmission and behavior in rats." J Nutr 1998 Dec:128(12):2512-9.

¹⁸ Ibid.

¹⁹ Brunner J, Parhofer KG, Schwandt P, Bronisch T. [Cholesterol, omega-3 fatty acids, and suicide risk: empirical evidence and pathophysiological hypotheses] Fortschr Neurol Psychiatr. 2001 Oct;69(10):460-7. Review. German.

²⁰ Kidd PM. "Attention deficit/hyperactivity disorder (ADHD) in children: rationale for its integrative management." Altern Med Rev. 2000 Oct;5(5):402-28. Review.

²¹ Pawlosky RJ, Salem N Jr. "Ethanol exposure causes a decrease in docosahexaenoic acid and an increase in docosapentaenoic acid in feline brains and retinas." Am J Clin Nutr. 1995 Jun;61(6):1284-9

Corrigan FM, Horrobin DF, Skinner ER, Besson JA, Cooper MB. "Abnormal content of n-6 and

n-3 long-chain unsaturated fatty acids in the phosphoglycerides and cholesterol esters of parahippocampal cortex from Alzheimer's disease patients and its relationship to acetyl CoA content." Int J Biochem Cell Biol. 1998 Feb;30(2):197-207. ²³ Assies J, Lieverse R, Vreken P, Wanders RJ, Dingemans PM, Linszen DH. "Significantly

reduced docosahexaenoic and docosapentaenoic acid concentrations in erythrocyte membranes from schizophrenic patients compared with a carefully matched control group." Biol Psychiatry. 2001 Mar 15;49(6):510-22.

Harv Heart Lett 2001 Nov;12(3):1-2. "Go fish: a good choice for preventing strokes."

²⁵ Segal-Isaacson CJ, Wylie-Rosett J. "The cardiovascular effects of fish oils and omega-3 fatty acids." Heart Dis 1999 Jul-Aug;1(3):149-54

²⁶ Yuan JM, Ross RK, Gao YT, Yu MC. "Fish and shellfish consumption in relation to death from myocardial infarction among men in Shanghai, China." Am J Epidemiol 2001 Nov 1;154(9):809-16

²⁷ Simopoulos AP. "Human requirement for N-3 polyunsaturated fatty acids." *Poult Sci* 2000 Jul;79(7):961-70 ²⁸ Okuyama H, Kobayashi T, Watanabe S. "Dietary fatty acids--the N-6/N-3 balance and chronic

elderly diseases. Excess linoleic acid and relative N-3 deficiency syndrome seen in Japan." Prog *Lipid Res.* 1996 Dec;35(4):409-57.

Thomas EA, Carson MJ, Sutcliffe JG. "Oleamide-induced modulation of 5- hydroxytryptamine receptor-mediated signaling." Ann N Y Acad Sci. 1998;861: 183-189.

Boger DL, Patterson JE, Jin Q. "Structural requirements for 5-HT2A and 5-HT1A serotonin receptor potentiation by the biologically active lipid oleamide." Proc Natl Acad Sci U S A. 1998;95:4102-4107 31

Economic Research Service/USDA Per Capita Consumption Data System Table 14 Added Food Fats and Oils 1909-1998

Chang MC, Contreras MA, Rosenberger TA, Rintala JJ, Bell JM, Rapoport SI. "Chronic valproate treatment decreases the in vivo turnover of arachidonic acid in brain phospholipids: a possible common effect of mood stabilizers." J Neurochem. 2001 May;77(3):796-803.

Oken RJ. Obsessive-compulsive disorder: a neuronal membrane phospholipid hypothesis and concomitant therapeutic strategy. Med Hypotheses 2001 Apr;56(4):413-5

Harymi Okuyama, Ph.D. "Choice of n-3 Monounsaturated and Trans-fatty Acid-Enriched Oils for the Prevention of Excessive Linoleic Acid Syndrome" Workshop on the Essentiality of and Dietary Reference Intakes (DRIs) for Omega-6 and Omega-3 Fatty Acids The Cloisters National Institutes of Health

³⁵ Pietinen P, Ascherio A, Korhonen P, Hartman AM, Willett WC, Albanes D, Virtamo J. "Intake of fatty acids and risk of coronary heart disease in a cohort of Finnish men." The Alpha-Tocopherol, Beta-Carotene Cancer Prevention Study. Am J Epidemiol 1997 May 15;145(10):876-87.

³⁶ USDA: Per Capita Fat Supply for the U.S., 1909-1998.