



# IMAGE AWARENESS WELLNESS INSTITUTE

## *Queen of Fats (Part 2)*

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### BALANCE

Omega-3 fatty acids have their origin in plant life. They are the engine which powers the ability of the plant to capture the energy of the sun. Plants synthesize large quantities of omega-6 fatty acids when they enter into the reproductive phase of their lives. The seeds of many plants like corn have high quantities of omega-6 fats. Consumption of both the green part of plants and the seeds would probably be harmless. Unfortunately, modern man tends to drop the green parts of plants out of the diet and concentrates the seed part of the plants in the diet with high intake of processed grains and refined seed oils.

Even though the simpler forms of the eight master molecules of the omega-3 family of fats are all that is needed for plant life, but this is rarely true for animal life. Animals require the powerful crown jewels of the omega-3 family—the highly unsaturated DPA, EPA, and DHA molecules.

These precious members of the omega-3 family must either be synthesized from plant fats or these fats must be consumed fully formed. There is little evidence demonstrating the ability of most people to synthesize the more complex members of the omega-3 family from plant sources of omega-3 like flax oil. There are a number of reasons for this, but the primary factor is prob-

ably the very high intake of omega-6 fats by the average individual.

### KING CORN

Why are omega-6 fatty acids so abundant in the diet and omega-3 fatty acids so uncommon? One important factor is the manner in which animals are fed. Prior to the 1970's many animals were fed a combination of grasses and grains.

In 1971 President Richard Nixon appointed Earl Butz as Secretary of Agriculture. He was assigned the task of removing food from the po-



litical agenda according to the documentary *King Corn*. (I highly recommend watching this documentary for an understanding of modern agriculture.) Butz changed American agriculture. He told farmers to get big or get out and encouraged farmers to plant corn and other commodity crops from fencerow to fencerow.

It was the rise of Earl Butz that spelled the end of the small farm in America and the rise of huge agribusiness corporations. Corn became the king of all crops and became the primary dietary staple of feedlot animals in the United States. Unfortunately, corn contains virtually no omega-3 fatty acids and large quantities of omega-6 fats.

Corn feeding soon began to alter the health of domestic animals. This change did not take place without being noticed and commented upon. One astute observer was William Albrecht. He wrote, "...we fail to see that while there is the increased shrouding of every capillary of the blood vessels and every cell with a thickening layer of fat, the cells normally fed by the diffusion of the nutritives from the capillaries to them will become more starved. Their excretory products will accumulate, since fat hinders the two-way ionic and molecular exchanges between the capillaries and the cells to give hidden hungers and excessive accumulation of metabolic wastes. Such conditions represent a lazy and



sick body of our domestic animals.”

Albrecht was quite concerned with the modern emphasis on fattening animals with grain feeding, not allowing them to exercise, and use of estrogens to promote weight gain. He referred to such practices as “perverted animal husbandry.” He observed that the only reason our farm animals do not become ill is because they are slaughtered before they become ill. He felt that if we consumed the flesh of these animals we would have an increased likelihood of becoming ill as well.

REFERENCE:

Albrecht, William, *The Albrecht Papers*, Acres USA, 372.

## GRASS FED VS. GRAIN FED

The change in diet of farm animals has changed the composition of their bodies. This is most dramatically illustrated by the alterations of the fat composition of the bodies of farm animals. A number of readily observable changes have been commented upon in the medical literature.

**SATURATED FAT:** A major difference between domesticated animals and wild animals is the total amount of fat. The total amount of fat (5.63 grams) in 100 grams of grain fed beef (trimmed of all visible fat)

is more than double that of antelope, deer, elk, cape buffalo and eland.”

**POLYUNSATURATED FAT (PUFA):** Wild animal flesh contains a relatively high percentage of unsaturated fat when compared to domesticated animals. The ratio of polyunsaturated fatty acids to saturated fatty acids is altered.

**DISTRIBUTION OF FATTY ACIDS:** The total amount of saturated fat in a grain fed animal tends to be 2-3 times that of an animal eating grass.

**OMEGA-3/OMGEA-6:** The ratio of omega-3 to omega-6 fats has been drastically altered by corn feeding of domestic animals. A grain-fed steer will average about 11 milligrams of omega-3 fatty acids per 100 grams of meat while a pasture-fed steer will average 24 mg, more than twice as much. Wild game has even higher levels of omega-3 with a deer coming in at 99 mg., an elk at 58 mg., and an antelope at 87 mg/100 grams.

The researchers who conducted this important work wrote, “The practice of feeding linoleic acid containing grain to cattle not only increases the total amount of atherogenic saturated fats in the meat, but it also substantially reduces the concentrations of n-3 PUFA while simultaneously increasing the concentrations of n-6 PUFA. Consequently, feed-lot produced beef does not contain an optimal fatty acid profile that would help to reduce the incidence of several chronic diseases.”

REFERENCE:

Cordain, L., et al, Fatty acid analysis of wild ruminant tissues: evolutionary implications for reducing diet-related chronic disease, *European Journal of Clinical Nutrition*, 2002, 56, 189.

## ARACHIDONIC ACID

Grain feeding tends to increase tissue levels of the pro-inflammatory fat arachidonic acid beyond what is desirable. This fat regulates inflammation and clotting at the tissue level. It tends to turn both processes on. This tendency to promote inflammation

and clotting makes arachidonic one of the most dangerous dietary fats, yet it is the very one which tends to become elevated with corn feeding of animals.

A study conducted by researchers illustrates the point. They injected a small quantity of arachidonic acid into the ear vein of rabbits. The injection resulted in death within three minutes while other fats injected in the same manner did not cause death. The following is a direct quote from the research paper:

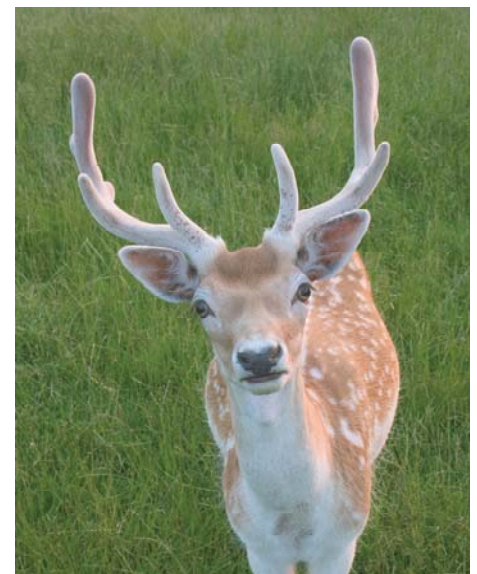
“Injection of sodium arachidonate (1.4 milligrams per kilogram) into the marginal ear veins of rabbits caused death within 3 minutes. Histological examination showed platelet thrombi in the microvasculature of the lungs. Rabbits were protected from the lethal effects of arachidonic acid by pretreatment with aspirin. Fatty acids closely related to arachidonic acid did not cause death.”

Other researchers found that arachidonic acid could kill cells in the test tube “at concentrations that overlap physiological ones.”

REFERENCES:

Silver, M.J., et al, Arachidonic acid causes sudden death in rabbits, *Science*, March 15, 1974, 183(129):1085-7.

Pompeia, Celine, et al, Arachidonic acid cytotoxicity: can arachidonic acid be a physiological mediator of cell death? *Cell Biochemistry and Function*, Vol. 21 Issue 2, 97-104.





## CONTROLLING FACTORS

The EPA, DHA, and AA (arachidonic acid) present in foods is determined by a number of factors. Key considerations are the following:

**GENETICS:** Genetic capacity of a fish or animal to convert one fatty acid to another. Not all creatures are equally efficient at converting plant fats into complex animal fats. Fish are particularly efficient at this task. Which fats are produced depend largely on feeding.

**DIET:** You are what you eat. Farmed Atlantic salmon are fed large quantities of omega-6 fats and thus a four ounce serving according to the USDA contains 1,306 milligrams of arachidonic acid, while the same size piece of wild Atlantic salmon will only have 303 milligrams of arachidonic acid--less than one quarter the amount. Wild Chinook salmon would only have 175 milligrams of AA.

Wild salmon eat algae while farmed salmon eat soybean and corn meal.

**TEMPERATURE:** A final factor which determines the ratio of EPA to AA is temperature. The colder the water the higher levels of EPA and DHA tend to be in fish and the lower levels of AA tend to be. The higher quality omega-3 fats become essential for survival in very cold temperatures. Thus a sardine from Norway is likely to have more omega-3 fatty acids and less arachidonic acid than a sardine from Portugal.

It is not mandatory that farmed fish have lower levels of omega-3 fatty acids than wild fish. Farmed rainbow trout contain 260 mg. of EPA while wild ones only contain 167 mg. The farmed salmon has only 25 mg. of arachidonic acid while a wild trout will have 109 milligrams per serving, four times more.

Eggs are generally quite high in arachidonic acid. The ratio of omega-3 fatty acids to omega-6 can be improved considerably by feeding the chickens a diet high in omega-3. The arachi-

onic acid does not decline much, but the omega-3 fats rise significantly.

### REFERENCE:

Chilton, Floyd H., *Inflammation Nation*, New York: Simon and Schuster, 2006, 88-93.

## SALMON OIL PLUS

One of the best omega-3 fatty acid products available is GNLD Salmon Oil Plus. Of first importance is that it is screened for more than 160 potential contaminants with an allowable detection limit of ZERO! The major problem with eating fish is that they are often contaminated with a variety of contaminants.

I am frequently asked what products I would recommend for detoxification. I always encourage Salmon Oil Plus as a first choice for this purpose. Medical facilities which focus on detoxification promote sweating with exercise and dry sauna to encourage mobilization and elimination of fats within the body which are contaminated with a wide variety of fat loving environmental pollutants such as pesticides and herbicides.

Detoxification programs almost always focus on supplementation with quality phospholipids (such as Tre-en-en) and fish oils which are not contaminated. The fish oils are particularly helpful because the body avidly takes up fish oils and incorporates them into body structures. An uncontaminated fish oil product such as Salmon Oil Plus will tend to displace contaminated fats in the body and allow them to be excreted.

Salmon Oil Plus is a complete omega-3 supplement with standardized amounts of all eight of the members of the omega-3 family. Most fish oil products are standardized to only two of the members of the omega-3 family, EPA and DHA. Recent research suggests benefits for some of the members of the omega-3 family which are often overlooked. For example, DPA appears to concentrate in heart tissue and may be at least par-

tially responsible for the very low incidence of heart disease of the Eskimos.

Salmon Oil Plus also contains an ultra high potency omega-3 concentrate. This concentrate is achieved with a technology called "molecular differentiation." This unique technology makes it possible to keep the capsules small but very potent. This makes a tremendous difference for people who have difficulty swallowing capsules. Molecular differentiation makes it possible to select individual molecules so it is possible to remove rancidity factors, fishy smell and other undesirables in the finished product.

Salmon Oil Plus has also undergone human clinical trials which demonstrated remarkable benefits. The trials demonstrated that this product significantly increases levels of EPA, DHA, and DPA in red blood cell membranes. It is bioavailable and assimilable.

Secondly, Salmon Oil Plus demonstrated heart healthy benefits. Triglycerides dropped more than 17% in just 8 weeks. The total omega-3 index rose to levels associated with the zone of greatest protection from cardiovascular disease in 8 weeks. The total intake of the supplement was only three capsules a day, the company's recommended intake.

Finally, Salmon Oil Plus manifested powerful anti-inflammatory effects. The balance of omega-3 to omega-6 improved significantly--a 43% improvement in 8 weeks. Arachidonic acid was displaced from red blood cell membranes. The inflammatory index dropped by a remarkable 68% in 8 weeks. This is highly significant because the inflammatory index is





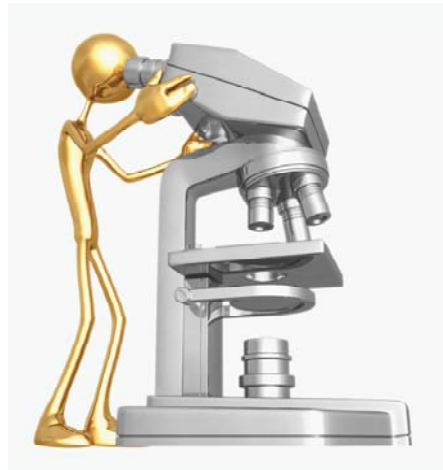
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an indicator for the tendency to develop a wide range of inflammatory conditions. This change was accomplished in apparently healthy subjects. Most apparently healthy people in the United States are inclined toward excessive inflammation.

Dr. Bruce Dewe, MD., elegantly and powerfully describes the benefit of this form of supplementation when he writes, "If ongoing low-grade chronic inflammation is the likely background for age-related diseases, (*Exp Gerontol.* May 31, 2005) then this pilot study strongly suggests that a full factor omega-3 supplement, with all 8 omega-3's, can provide a safe solution to the postulates that anti-inflammatory mechanisms become less efficient with age and that the inflammatory switch becomes 'stuck on' with age. Omega-3 Salmon Oil Plus turns off the 'stuck' inflammatory switch."

Case studies are always interesting. One healthy man with an elevated triglyceride level of 436 saw his triglycerides drop to 210 after 8 weeks of supplementation. This is the kind of change most doctors hope to see in their patients with elevated triglycerides.



A woman who did not eat fish saw her inflammatory index drop from 6.0 to 1.0 after 8 weeks of supplementation, a remarkable change for the better. A healthy man who eats fish once a week had an inflammatory index of 4.0 which dropped to 1.0 after 8 weeks of supplementation. This man's triglycerides dropped from 270 to 197 over the 8 weeks. Here a healthy man achieved healthier metabolic status simply by supplementing with 3 Salmon Oil Plus capsules a day.

The western diet is so impoverished with regard to omega-3 fatty acids that this is a supplement which will benefit almost everyone. Health care reform should begin with addressing the issue of nutrient deficiencies. The most

prominent of these is lack of balanced and uncontaminated omega-3 fatty acids in the diet. GNLD Salmon Oil Plus is a superior means of addressing this serious nutritional problem.

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