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Dear Hank,

The interview of Spencer Feldman and his information on Live Cell Analysis in our the last issue of Free Spirit was brilliant. Spencer was quite right to stress the importance of oil in human health, and as a result, I am forwarding to you the piece I wrote some time ago for friends to introduce them to the vital importance of the right fats.

Essential Fatty Acids

"Fatty acid" is the technical name for fats and oils, as is the term "lipid". Essential fatty acids are lipids that are essential in the diet. Without them the body malfunctions and degenerates — indeed the body can't properly rebuild and maintain itself without them, and dies off from an array of apparent other causes.

In a natural circumstance you would get your essential fatty acids (EFA's) from certain seeds and cereal germs (wheat germ for example). In modern society we are totally deficient in EFA's with the resulting incidence of degenerative disease being at epidemic proportion.

There are three kinds of fats/lipids:

a) saturated fats (means all sites on the carbon chain of the fat molecule are fixed with a hydrogen atom) — these fats come in two main forms: i) a long chain molecule as in the case of stearic acid from beef fat which is mainly only good for calories, ii) short or medium chain molecules which perform many vital functions in the body (such as cell differentiation),

b) mono-unsaturated (one site on the carbon chain is "unsaturated" — olive oil is an example which is 90% or so oleic acid and classified as omega 9, and this oil is good only for calories), and

c) polyunsaturated fats, which have many sites on the carbon chain without hydrogen atoms attached which enables the human body to elongate the molecule with other elements to form *activated* essential fatty acids.

It is these polyunsaturates and their elongated derivatives that are the vitally important good fats the body must have. That's why they are called essential fatty acids (EFA's).

EFA's actually become an essential and integral part of the human cell structure. They are that important. It's fat, after all, that forms the barrier to the water solution contained in our cells! In nature, you would normally get the two EFA's — one classified as omega 3 (as for example in soy oil), and the other classified as omega 6 (as found in [the original, not the newer hybridized] safflower oil and in wheat germ) from an unrefined diet that included seeds and grains. Generally, seed oils mix these two fats in varying proportions.

Dr. Joanna Budwig in Germany has for 30 years demonstrated cure of cancer by using flaxseed oil (it's roughly four parts omega 3 and one part omega 6 EFA's, which is generally the right ratio to consume for these lipids) along with powered skim milk as a source of sulphur based protein and the use of red (ruby) laser-light as a source of photon energy that the body uses in exactly the same way as it uses sunlight photon energy. Dr.

Budwig wrote several wonderful books. My favorite is “*Photo-elements of Life*.” It deals brilliantly on the issue of energy exchanges in life.

For full details on lipids I recommend Udo Erasmus’s book *Fats That Heal, Fats That Kill*, or his earlier version of the same book, *Fats and Oils*. These are the definitive books for the layman on the subject.)

The other author who I recommend *most* strongly is Dr. Barry Sears. He is one of the world’s leading lipid scientists who was for many years on the faculty of Boston College Medical School. He wrote the Book: “*The Zone Diet*” among many others. See his website here: <http://www.zonediet.com/blog/author/bsears/> and his Wikipedia information here: http://en.wikipedia.org/wiki/Barry_Sears.

When the polyunsaturated precursor EFA's are present, the body then works them over with the enzyme Delta 6 desaturase to form GLA (omega 6) and EPA (omega 3); and it is these two *activated* EFA's that are the critical issue. Human breast milk is the only food that contains both these lipids, and without them, the baby cannot make certain brain cells or the myelin sheathing on nerves — these fats are that important. When there are deficiencies in EFA's in adults, the body cannot make the more than 150 needed hormone like biochemicals called prostaglandins — and it is these prostaglandins that modulate every cellular activity and hormone balancing/utilization function in the body. The whole lipid chain from these *activated* EFA's down through the various prostaglandin series are also critical to, and an integral part of, the body's immune function — as without these lipids, the body's immune capacity is crippled because prostaglandins are what go into play to facilitate the response. The (obscure and ignored) medical literature actually states that “polyunsaturated fatty acids are proven to disintegrate the viral envelopes (their outer skin) of whole classes of viruses, thereby rendering them uninfective.” And use of them has proved to routinely eradicate viruses and other organisms. Even the U.S. Department of Agriculture showed that EPA (your body makes it from omega 3 EFA and you can buy it in healthfood stores in fish body oil

capsules) eradicates drug resistant strains of the malaria causing bug! All it takes is a daily dose of about 4,000 mg for a couple of weeks which is about half of what the Greenland Eskimos get in their daily diet of fish! And, believe it or not, these two activated EFA's are actually recommended in the ignored medical literature "for the prevention and/or cure of AIDS" — and with good cause.

These lipids are also critical for cardiovascular health in that they modulate cholesterol to normal and maintain healthy condition of veins, arteries, heart muscle, etc., as well as preventing dangerous blood clotting. Contrary to the junk science and product selling motivated PR stories hyped by our media, saturated fats have not been proven to lead to high cholesterol or incidence of cardiovascular disease (but the margarine touted to replace butter has been proven to do so!), and polyunsaturated fats in their natural *cis* state (the molecule is bent and not excessively energized and thereby able to take donations of photonic or electron energy) has *not* been shown to "cause cancer" when consumed in "excessive amounts" but the junk oils foisted off on the unsuspecting public by food processors in the form of *trans* fats has! Cooking oils, vegetable oils and margarine were of course touted big time as the alternative to cheap animal fats and other low cost and safe saturated fats from vegetable sources such as palm and coconut oils by the giant food processor corporations. This suited the big American agri-businesses, because they could then sell domestic soy, corn and other vegetable oils after they destroyed the reputation of "saturated" fats. What they foisted on the public instead was bastardized fats that kill. *Trans* fats (as in commercial vegetable oil) are bastardized by excessive heat that transforms (hence their designation, *trans* as against *cis*) their molecular structure so that they straighten out and being now highly energized do not take the donations of energy needed in the various metabolic processes required for a healthy body. They actually have a corrosive effect on cell membranes instead of becoming part of the integral structure of cell walls. That's why junk science utters such inanities as "polyunsaturated fats in excess cause cancer," when in fact it's *trans* fats that kill you and *cis* fats that cure you!

The real story on fat is as follows. Saturated fats have not been factually proven to cause anything except you getting fat from eating too many calories. It so happens that saturated fat is present in the diet that is responsible for the poor health of Americans, but is not the cause of it. Heavy animal protein eaters get lots of certain metabolites (metabolized extensions) of the above EFA's in their meat, eggs, poultry etc., but miss balancing it with other EFA's and end up with a disease producing *imbalance*. Indeed one big problem of the typical American diet is an over-abundance of the omega 6 EFA derivative, arachidonic acid (it's what our own bodies also will produce in balanced amounts if we get the basic precursor fat in our diet) — and meat and eggs are stacked with it!. The problem here is that the animal protein we eat in such quantity contains an abundance of arachidonic acid produced by the animal from the omega 6 EFA it eats. Arachidonic acid and some of its derivative prostaglandins are proven to be a cause of platelet aggregation (the blood clots you don't want that kill), vasoconstriction (narrowing of arteries and veins, resulting in reduced circulation and higher blood pressure) and inflammation. But that is the picture for *heavy* animal protein eaters: three giant meals a day of it unbalanced with other essential nutrients. Of course dosing our American diet with sugar and refined carbohydrates isn't helping either, because when the blood sugar is booted up the body kicks in with insulin and this knocks out the fat mobilizing hormones and enzymes and you are in even deeper strife! And as Spencer so rightly stated in your interview, sugar knocks the immune system unconscious for five hours — well here is the reason why. The immune system depends upon prostaglandins that are derived from fats which derivation depends upon fat mobilizing hormones and enzymes. You get the picture — unless the fats are present and can be converted, you can't have a properly functioning immune system.

At age 30 our body's production of the critical D6 desaturase enzyme is at its peak — by age 60 it is reduced to 30%. Other factors also impact the production of this enzyme or its effectiveness such as viral infections or booze, with the result that any precursors EFA's we might get do not get converted. Therefore, the trick is to take supplements of the already activated GLA & EPA so that this “enzyme blockade” is

bypassed and the body can then make the essential prostaglandins. GLA & EPA are the top of the *activated* EFA chain, and from that level down the body can do all the things it needs . . . the activated EFA's are the key to all else. And you can get these from special seed oils and fish body oil. They are called EPA and GLA — these are the familiar healthfood store names for rather long scientific names. Being able to bypass the enzyme blockade like this is of the utmost importance for older people, and it will extend their lives.

The other point of utmost importance, is the issue of ratios. My friend, Dr. Barry Sears of EICO, Inc., 21 Tioga Way, Marblehead, MA 01945, (800) 346-2703, is the guru on this and perhaps the leading lipid scientist in the world and the guy who figured all this out and actually has patents on his discoveries. Typically, the ratio between the omega 3 EPA, and the omega 6 GLA is about four to one (that is 4 parts EPA to 1 part GLA). That is the ratio between these two lipids in mother's milk and also in flaxseed of their precursor fatty-acids (from which your body makes these two activated EFA's). Some individuals differ (what's new!), and need to vary the ratio to suit their individual biochemistry — the ratio can vary from between 1:1 to 6:1 or even 8:1, 4:1 happens to be the median and most common. What Barry Sears has demonstrated is that the ratio between these two fatty acids determines the particular kind of prostaglandin the body will produce. This is of the utmost import, for if the ratio is improper, the body will end up producing either too much of certain Series 2 prostaglandins (remember there are over 150 prostaglandins derived from the two basic fatty acids) that are produced by conversion from arachidonic acid (omega 6) — and you will end up with various undesirable conditions — or otherwise too much of the Series 3 prostaglandins (from the omega 3 lipid) and you will end up with a reduced immune system like the Eskimos and be highly susceptible to infection! So, the trick is to modulate your individually correct ratio of these two lipids so that you maintain the ideal balance of prostaglandin production. Barry Sears has figured all this out and he wrote a book on it, *The Zone*, by Dr. Barry Sears, (Harper Collins) — it's for the layman and in the stores now (1996), and I recommend it.

In simple terms, you can figure your prostaglandins ratio by the following physical manifestations. If your bowel action is too loose, you have too much omega 3/EPA. Other signs of too much EPA are increased appetite, increased urination, fatigue, nausea, gas. If you become constipated, you have too much omega 6/GLA. Other signs of too much GLA are prolonged need for sleep grogginess on waking, minor skin problems, dry skin, brittle hair, headaches, lack of appetite. Being in your correct “Zone” as Barry Sears calls it, will give you increased energy, a sense of well being, reduced need of sleep, alertness on waking, improved skin, increased athletic performance.

For the record, use of these two activated fatty acids, EPA and GLA in athletics is now well tested. We are able to take an elite Olympic level marathon runner and increase his cardiovascular efficiency by as much as 18%, that on top of his already super efficient state! I won't bore you with all the reasons for this, but that is the level of proven effectiveness of these nutrients when properly employed. Further, tests on college football players and NFL stars confirms not only increased endurance, but increased muscular strength and reduced stress injury and lactic acid burn from training. (GLA is the key to being able to produce the collagen needed for connective tissue — so if you ladies are interested in a wrinkle or two less, this is factually for you!)

This subject of lipids is where medical science is going to be at in the 21st century — that's if we have honest medical science, for I can assure you that this stuff has been ignored already for some time, and there is no money in using cheap and correct nutrition for healing when you can corner the market and make \$Billions on a vaccine that they can legislate everyone has to be given (as is currently touted to “prevent” the 23 million annual malaria cases that result in 2 million deaths). Other data you need on this, is that you must avoid all commercial fats and oils. This includes margarine (made by bombarding oils with hydrogen under pressure with heat to saturate carbon sites — the process is called hydrogenation), avoid any hydrogenated or partially hydrogenated oils/fats as they are proven to cause arteriosclerotic malfunction (that means avoiding

virtually all commercial salad dressings, mayonnaise, most packaged or mass produced foods — example, any fat used to replace butter or palm oil in pastry or baked goods will be this hydrogenated death food). Avoid typical supermarket cooking or salad oils, as these have been converted into *trans* fats from their natural *cis* form. Health food stores have "expeller extracted" oils which are wonderful. All cooking oils in restaurants are typically these junk fats, and they have been proven to damage the body. (edit: 2011— these bastardized trans-fats have been outlawed in New York City restaurants.)

What I recommend you take daily is the following:

Depending on age and activity/Calorie burning level (training athletes need more)

90 mg-200mg GLA

360 mg-1,000mg EPA — monitor your ratio of these fats as above, and adjust as needed.

vit. B complex that contains some NIACIN along with the usual niacinamide (be sure to get about 25 mg of Niacin/niacinamide on top of what you get in food.)

vit. C minimum 1000 mg — best is mixed ascorbates with bioflavonoids

Nature's Plus "Ultramins" (mixed minerals chelated)

mixed carotenoids (pro vit. A) 10,000 -25,000 daily

vit. E be sure to get 200 mg minimum, get MIXED tocopherols and best also is a capsule with tocotrienols along with the tocopherols.

I also take a few ounces of ground up flaxseed daily (I use my Braun coffee mill).

Edit 7/17/10 for folks 50+ years of age:

Also take Co-enzyme Q10 **best is in the form of ubiquinol** 100mg

Vit D 2000mg, be sure it is the natural form, cholecalciferol . . . this for those in northern latitudes; those in the sun belt may not need this.

By the way, I don't recommend using aspirin. Reason is, it interferes with the body's enzyme production . . . and this has all sorts of side effects that have not been taken into account — example, the medicos don't talk too much about the increased incidence of cerebral strokes, or the fact that as a result of knocking out a key enzyme responsible for lipid conversion they interfere with the production of prostaglandins that

are needed for immune system function and thereby impair immunity to infections and viruses, etc., etc.

The recommendation to take a small daily dose of aspirin for those “at risk of heart attack” is of course bum science devised by those who wish to sell aspirin.

So that you know what’s going on, here is the scientific “rationale” for aspirin. GLA is converted by the body into two metabolites: Dihomo GLA (DGLA), and arachidonic acid (AA). These are each converted down through a further chain of prostaglandins: Dihomo GLA down the series 1 prostaglandins chain which is critical to proper immune function, and arachidonic acid down the series 2 chain that is associated with cardiovascular disease, blood clots, inflammation, arthritis and such. Now it is at this point that idiot think bum science has a chance to be exploited to sell product. The geniuses have found out that Enzyme A (Cyclo-oxygenase) is the enzyme that affects the conversion of both DGLA and AA to the prostaglandins below, so, guess what? They decide that knocking out Enzyme A with aspirin is a good idea to prevent heart attacks — screw the fact that it leads to higher incidence of cerebral strokes, and interferes with the production of the entire series 1 and series 2 prostaglandins and thus impairs immune function, and the entire balance of bodily function. Just sell aspirin!

It is to be noted that the enzyme aspirin (and other COX inhibitors) target, Cyclo-oxygenase (enzyme A), is a vital enzyme in the metabolic conversion of EFAs into prostaglandins — and it is prostaglandins that line the stomach against stomach acids, which stomach lining is in need of replacement every several days. And this is the reason aspirin has a history of causing stomach ulcers.

The same story is true for those of you who have been put on “anti-inflammatory” drugs and other over-the-counter pain-killers like aspirin, to handle “inflammatory diseases” such as arthritis, rheumatism (all associated with an excess of arachidonic acid in the diet).

The smart answer for those who want good science, is to use EPA to inhibit the conversion of DGLA into AA. This occurs because EPA uses the same enzyme in its conversion processes as DGLA does, and thus leaves less enzyme available to make an imbalance of AA and “bad” prostaglandins. You see the specificity of this — you get all of what you do want and less of what you don’t want. You haven’t killed off everything in sight just to get at what you want to prevent. It’s balance we are after here, the correct balance — for each of the prostaglandins have their role to play when in correct balance. EPA and GLA is the way to go.

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