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EFAs: Essential Fatty Acids. The Healthy Fats

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The Healing Fats

To avoid the killer fats that we hear so much about, many people have turned to low fat diets, decreasing their intake of the healing fats required for life.

Low fat diets, useful for arteriosclerosis, can kill you over the long term. Children are especially vulnerable to damage from low fat diets. To balance the one-sided view on fats, we must talk about essential fatty acids (EFAs).

þÿ Essentiality Of EFAs

Like vitamins, EFAs are essential to health. Older literature, in fact, refers to them as vitamin F. Vitamins and EFAs are essential because:

- We must have them to live and to be healthy.
- Our bodies cannot make them from other substances.
- We must obtain an adequate supply from external þÿsources from food or from supplements.
- Deficiency results in gradual deterioration of cells and tissues, and ultimately, in death.
- Increasing the intake to adequate levels reverses the signs brought about by deficiency.

This definition of essentiality reflects the fact that essential nutrients perform key functions in our cells and tissues that the body cannot live without. EFAs play their essential roles by:

- Helping to form the membrane barrier that surrounds our cells and intracellular factories (organelles).
- Determining fluidity and chemical reactivity of membranes.
- Increasing oxidation rate, metabolic rate, and energy levels.
- Serving as starting material for hormone-like regulating molecules (Prostaglandins) that govern cell activities on a moment-to-moment basis.

Special Properties Of EFAs

A second difference is that EFAs are perishable, deteriorating rapidly when exposed to light, air, heat and metals. Unlike vitamins, EFAs cannot be dried, powdered, and stored for several years. EFA sensitivity makes careful processing and freshness extremely important.

Omega 6 And Omega 3 EFAs

Many lay references and college texts on nutrition suggest three EFAs: linoleic, linolenic, and arachidonic acids. This outdated information is wrong. Two fatty acids are essential to human health. (Fish require only one fatty acid þÿ a n d p l a n t s r e q u i r e n e i t h e r t h e y m a k e E F A s .)

The first is the omega 6 EFA, which is called linoleic acid (LA). LA is abundant in polyunsaturated safflower, sunflower, and corn oils. The second, known as the omega 3 EFA, is called alpha-linolenic acid (LNA). Sometimes referred to as super-unsaturated, LNA is found abundantly in flex and hemp seeds.

LA and its derivatives belong to the omega 6 family of polyunsaturates. In addition to linoleic acid (LA), this family includes gamma-linoleic acid (GLA), dihomogamma-linolenic acid (DGLA), and arachidonic acid (AA).

If LA is provided by foods, our cells make GLA, DGLA, and AA. Bad fats (margarines, shortenings, trans-fatty acids, hard fats, sugar and **cholesterol**), lack of minerals (magnesium, selenium, zinc) and vitamins (B3, B6, C, E), viruses, obesity, diabetes, aging, and rare genetic mutations can all inhibit omega 6 conversion.

In such situations, an oil containing omega 6 derivatives can help. GLA is present in evening primrose, borage, and þÿ b l a c k c u r r a n t s e e d . D G L A i s f o u n d i n m o t h e r s m i l k . A A is found in meats, eggs, and dairy products.

LNA and its derivatives belong to an omega 3 family of superunstaurates. Besides alpha-linolenic acid (LNA), this family includes stearidonic acid (SDA), eicosapentaenoic acid (EPA), and docosahexaenoic acid (DHA).

If LNA is provided by foods, our cells make SDA, EPA and DHA. When the conversion of EFAs to their derivatives is inhibited by the factors listed above, DHA from black currant seed oil, or EPA and DHA from fish oils and northern ocean algae can be given.

Properties Of EFAs

The value of LA and LNA to health results from their chemical properties. EFAs react with oxygen (EFA-rich þÿ o i l s f l a x , h e m p , s a f f l o w e r w e r e t r a d i t i o n a l l y u s e d i n paints because they oxidize, dry and harden quickly when exposed to air).

When fresh, these oils are valuable human foods. EFAs absorb sunlight, increasing their ability to react with oxygen by about 1000-fold and making them very active chemically.

EFAs form associations with sulfhydryl group (cysteine) in proteins, important in reactions that make possible the one-way movement of electrons and energy on which life depends. EFAs store electric charges that produce bio-electric currents important for nerve, muscle, and cell membrane functions, and the transmission of messages.

EFA Functions

As structural components of membranes, EFAs help form a barrier that keeps foreign molecules, viruses, yeasts, þÿfungi, and bacteria outside of cells, and keeps the cells proteins, enzymes, genetic material, and organelles (small organs) inside. They also help regulate the traffic of substances in and out of our cells via protein channels, pumps, and other mechanisms.

They perform similar functions in membranes that surround organelles within our cells. EFAs fulfill many functions:

- Regulate oxygen use, electron transport, and energy þÿproduction our cells most important moment-to-moment processes.
- Help form red blood pigment (hemoglobin) from simpler substances.
- Keep juice-producing (exocrine) and hormone-producing (endocrine) glands active.
- Help make joint lubricants.
- Are precursors of prostaglandins (PGs), three families of short lived, hormone-like substances that regulate blood pressure, platelet stickiness, and kidney function. A delicate balance between PGs with opposing functions, in part determined by omega 6 and omega 3 intake, determines the health of our cardiovascular system.
- Help transport cholesterol.
- Help generate electrical currents that make our heart beat in orderly sequence.
- Are precursors of derivatives like DHA, which are needed þÿby the most active tissues brain, retina, adrenal, and testes.
- Help our immune system fight infections by enhancing peroxide production.
- Help prevent the development of **allergies**.

EFAs play a role in every life process in our body. Life without them is impossible. When foods are EFA-poor, expect a diversity of health problems.

EFA Requirements

One to two percent of calories (1 tsp., 3 to 6 grams/day) prevent signs of deficiency in most healthy adults. LA optimums are around 3 to 6 percent of calories (1 tbsp., 9 to 18 grams/day), requiring about 30 IU of vitamin E. Obese people and those eating hard fats, sugar, and trans-fatty acids require more.

Nutrients essential for LA functions include magnesium, selenium, zinc, and vitamins A, carotene, B3, B6, C and E.

An adult carries about 10- kilograms of body fat. About 1 þÿkilogram (2.2 lbs.) is LA. Vegetarians bodies carry up to 25 percent of their body fat as LA. People with degenerative disease average only about 8 percent of their body fat as LA.

Alpha-linolenic acid (LNA) optimums range between 2 and 9 grams (1 or 2 tsp.) per day, averaging 2 percent of daily calories. Body content in healthy people is around 2 percent of fat, or 200 grams (half a pound) of LNA. LNA requires the same antioxidants, minerals, and vitamins necessary for LA functions.

Omega 6 To Omega 3 Ratio

Omega 3 to omega 6 ratios in healthy populations range from 1:2.5 (Inuit diets) to 6:1 (other traditional diets). Since 1850, omega 3 consumption has decreased to one-sixth its traditional level, resulting in an omega 6 to omega 3 ratio of 20:1 (contemporary polyunsaturated oil diets), associated with degenerative conditions.

Flax, our richest source of omega 3, quickly replenishes a long-standing omega 3 deficiency. A dozen 8 oz. bottles of good quality flax oil consumed over the course of a few months will suffice.

Long--term exclusion or excessive use of flax oil can result in omega 6 deficiency after about two years, because flax oil is omega 3 rich but omega 6 poor.

If a person has cancer, inflammatory conditions, or needs to lose weight, omega 3 should be favored. Otherwise, an omega 6 to omega 3 ratio between 1:2 and 1:3 is suitable.

Processing EFAs

þÿIn nature s package, EFA-rich oils keep for years without spoiling. Out of that package, light, air, and heat attack EFAs. Like perishable produce, EFA-rich oils should be made with care and obtained fresh.

Frying and deep frying destroy EFAs by the combined effects of light, oxygen, and heat, producing toxic substances that produce ateriosclerosis and cancer.

EFA-rich oils should be made and packaged in the absence of light, oxygen, and heat. Frozen solid (which does not damage them), oils remain unspoiled for a long time. Manufacturers should ship them directly to retailers or consumers without stops along the way.

Healing fats, those containing unspoiled EFAs, are vital to health. Both EFAs must be obtained from foods in an appropriate ratio. Hard, hydrogenated, and overheated (killer) fats interfere with vital EFA functions.

To unfold their health benefits, EFAs must be fresh, protected from destruction by light, oxygen, and heat, and accompanied by the minerals and vitamins required for their metabolism in the body. Overheating, refining, and hydrogenation destroys EFAs and their value to human health.

An adequate supply of healing fats is even more important to health than the avoidance of killer fats.

An excellent source of EFAs comes from
www.breathing.com/efa.htm