Toll Free: 1-877-563-8848
Fax: 250-380-2681
Email: info@innatechoice.com
Website: www.innatechoice.com

Omega 3 Facts

What are Essential Fatty Acid (EFA) nutrients?

To properly understand what essential fatty acid (EFA) nutrients are it is necessary to understand the scientific meaning of three terms – essential, fatty acid, and nutrient.

Essential: If something is classified as essential in nutritional or biochemical terms it means that the body cannot make it and must therefore receive it from the diet.

Fatty Acid: A fatty acid is simply a type of fat that is classified according to its structure and biological function. Fat has gotten a bad rap over the last few decades and this topic deserves some clarification. I like to classify fats as good, bad, and ugly. The good fats, the fats that are absolutely essential for health and protection from illnesses are the EFAs. The bad fats, the fats that when overconsumed can lead to heart disease, obesity, and other illnesses are the saturated fats from farm raised animals who are fed omega 6 grains such as corn and soy. The ugly fats are the unnatural human made fats such as trans fats and hydrogenated fats. These fats are literally toxic. Sadly they are found in almost all junk foods and even a lot of 'health' foods.

If you are buying a packaged food read the label and check for trans, hydrogenated, or partially hydrogenated or fractionated fat or oil. If you see this put the product back on the shelf!! In fact, these fats are so toxic that the Canadian government is making them illegal; other countries will surely follow as will lawsuits against the companies who put them in their products.

Nutrient: A nutrient is something that the cells of the body require in order to function properly, express health and avoid sickness. You are probably familiar with nutrients such as vitamins, minerals, fats, carbohydrates and proteins.

Essential Fatty Acid Nutrient: An essential fatty acid (EFA) nutrient, in scientific terms, is a nutrient required for health and protection from sickness that the cells of the body cannot produce or make; it is a nutrient that must be derived from our diet. Without these essential nutrients proper health is impossible and illness is inevitable – they are literally that important in terms of determining quality and quantity of life.

Differentiation Between Omega 3 and Omega 6 Fatty Acids

There are two main classifications of essential fatty acids, omega 3 fatty acids and omega 6 fatty acids. These classifications are based on the structure of the fatty acid and as they differ in structure they also differ in biological function. It is useful to think of omega 6 fatty acids coming from corn, soy, safflower, and sunflower sources. Think of omega 3 fatty acids as coming from flax (LNA) or from fish or wild game meat (EPA/DHA).

The different types and sources of omega 3 fatty acids will be discussed in detail in a later section – this is a very important topic which includes information clarifying why humans and other meat-eating animals require the consumption of EPA and DHA from fish or wild game and cannot rely on flax (LNA) in order to supply sufficient EPA and DHA Omega 3 EFAs.

Without getting too biochemically technical the best word to think about with regard to the proper relationship between omega 6 and omega 3 fatty acids is balance. Literally, the ratio of omega 6 to omega 3 fatty acids in both your diet and your body should be 1:1. Too much omega 6 (toxicity) or too little omega 3 (deficiency) leads to improper cell function which causes excessive inflammation, decreased immune function and increased susceptibility to virtually every chronic illness including heart disease, cancer, arthritis, diabetes, depression, Alzheimer's, osteoporosis, allergies etc.

It is a scientific fact that due to our dietary and food processing habits virtually every citizen in Industrial or Western nations is both toxic with omega 6 EFAs and deficient in omega 3 EFAs. This is responsible for significantly contributing to poor physical and mental health and increased incidence of illness. In fact research indicates that the ratio of omega 6 to omega 3 fatty acids in the average diet is now up to 20:1 in favor of omega 6!! This is because farmed meat and virtually every packaged or fast food is loaded with corn, soy, safflower, or sunflower derivatives.

Furthermore, fish, including farmed fish, is now so riddled with pollutants such as heavy metals and PCBs and dioxins that eating enough fish to get your omega 3 EFAs is considered dangerous. In fact, pregnant women are now being advised by the federal government to avoid eating some fish due to the documented high levels of these contaminants. This is why supplementation with a purified, toxin free fish oil like Omega Sufficiency™ is now crucial for every person starting from infancy. We simply cannot safely get enough EPA/DHA omega 3 fatty acids without proper supplementation.

Wild game sources of omega 3 EFAs are not available to the vast majority of citizens and simply raising deer or other "wild" animals on a farm and feeding them corn or soy produces the same omega 6 rich and omega 3 deficient meat as is found in domesticated farmed animals.

Description and Biological Importance of Omega 3 Essential Fatty Acids

The role of Omega-3 EFAs (specifically EPA and DHA) in the promotion of health and the prevention of illness has been studied a great deal in recent years. Both scientists and practitioners are celebrating the results that have been found to date and with every research study the importance of EFAs for health promotion and illness prevention becomes more evident.

Omega 3 essential fatty acids (EFAs) are some of the most crucial essential nutrients for human and other animal health ever identified. Over 2000 scientific studies provide evidence of the importance of EPA and DHA essential fatty acids for the maintenance and restoration of health and the prevention of disease.

Omega 3 EFAs are extremely important in the structure and function of every cell in the body and the function of your cells is what determines your health. Your cells are what determine your immune function, healing, hormone levels, heart function, cholesterol levels, blood pressure, digestion, moods etc. Literally, the function and health of your cells determines every aspect of your health.

EPA and DHA omega 3 EFAs are part of every cell membrane and are required to maintain the proper shape, flexibility or fluidity, and "slipperiness" of cell membranes. The flexibility and "slipperiness" of cell membranes is important for the flow of blood through blood vessels and decreasing the risk of high blood pressure, stroke and heart attack. This fluidity or flexibility of cell membranes is also crucial to ensure the proper flow of nutrients into cells as well as the proper shape of cell receptors for hormones such as insulin (insulin sensitivity).

In addition, EFAs are required for proper nerve signal transmission (memory, concentration, cognitive ability, muscle coordination and strength) and immune function including defense against cancer.

EPA and DHA omega 3 EFAs also play a major role in regulating inflammation via substances called prostaglandins. EPA and DHA Omega 3 fatty acids produce anti-inflammatory prostaglandins while Omega 6 fatty acids produce pro-inflammatory prostaglandins.

Having a diet that is toxic with Omega 6 or deficient in Omega 3 EFAs creates a pro-inflammatory state within the body. This is very significant because inflammation is at the root of virtually all of the common chronic illnesses such as cancer, heart disease, stroke, diabetes, and depression as well as the autoimmune and atopic diseases such as arthritis, Crohn's Disease, irritable bowel, psoriasis, eczema, allergies, fibromyalgia, lupus, and multiple sclerosis. Inflammation is also a major factor in dysmenorrhea (menstrual pain and/or cramping), headaches, and back and neck pain.

Omega 3 EFAs play a role in virtually every human function including growth and development, digestion, brain and nerve function, immune function, hormone production and regulation, maintenance of skin and bones, regulation of healing and inflammation, heart function, vision, cholesterol levels, and even emotions and behaviour.

This is why supplementing with Omega 3 EFAs has been shown to help people with so many different illnesses. In reality supplementing with Omega 3 EFAs will help anyone that is deficient in Omega 3 EFAs whether they have a diagnosed illness or not. The fact of the matter is that everyone needs Omega 3 EFAs and due to dietary practices virtually everyone in Western society is deficient. Without these essential nutrients cells cannot function properly and illness is inevitable even though it may take years before symptoms arise.

This does not mean that a deficiency in Omega 3 EFAs is the only cause of all illness; that would be an unscientific and illogical claim. However, it does absolutely mean that if someone is deficient in Omega 3 EFAs their cell function and thus their health is compromised and will be improved when they begin to supplement – this is an indisputable scientific fact. Obviously if Omega 3 EFAs are needed for proper cell function and cell function determines our health then Omega 3 EFAs are a significant determining factor in health. This is exactly what research indicates.

The above information is why we stress the importance of supplementation BEFORE illness develops. It is both dangerous and illogical to wait until illness develops to begin to take care of yourself or your children or your pets! How can we PREVENT ILLNESS or PROMOTE HEALTH if we wait until we are already ill before we take action?

As previously mentioned, what is even more alarming than the pandemic deficiency in EPA and DHA omega 3 fatty acids is that virtually all people living in industrial nations are now toxic with the omega 6 fatty acids and saturated fat that is so common in modern diets. Research indicates that the ratio of omega 6: omega 3 fatty acids in the average modern diet is as high as 20:1. The evidence indicates that the proper healthy ratio is 1:1.

Being toxic with omega 6 fatty acids and deficient in omega 3 fatty acids is a deadly combination that is shown to increase the chances of illness in people of all ages. Illnesses associated with omega 6 fatty acid toxicity and/or omega 3 fatty acid deficiency include ADHD, allergies, eczema, asthma, breast cancer, colon cancer, prostate cancer, lowered immunity, heart disease, strokes, diabetes, high blood pressure, depression, fibromyalgia, ulcerative colitis, Crohn’s disease, arthritis, osteoporosis, and Alzheimer’s, painful menstruation, back pain, neck pain, and headaches. YIKES!

Differentiation Between LNA from Flax and EPA and DHA from Fish

The omega 3 fatty acids can be further categorized according to their structure and biological function. This categorization is done by the number of carbons in the fatty acid or if you like the size or length of the chain of carbons that make up the fatty acid.

Alpha Linolenic acid (LNA or ALA) derived from flax has a shorter carbon chain and is much less biologically important than the longer chain fatty acids EPA and DHA. In fact, when LNA from flax is consumed it has to be converted to EPA and DHA inside the body by adding carbons and making the chain longer. This requires the action of enzymes, the most important of which is an enzyme called delta 6 desaturase. The action of this enzyme determines how much LNA will ultimately be converted to EPA and DHA.

Research is clear that humans and other meat consuming animals are genetically designed to consume the longer chain omega 3 EFAs (EPA and DHA) directly from wild game meat or fish and not rely on converting LNA from flax. This makes complete sense. Our genetic ancestors had virtually no flax or other omega 3 rich vegetable sources in their diets!

Further supporting this are research studies that show that the delta 6 desaturase enzyme responsible for the rate of conversion of LNA from flax to EPA and DHA is incapable of doing so in sufficient amounts even if large amounts of flax oil are consumed. In a recent study, ALA converted to EPA was only 0.2%, concluding that flax seed oil was not a good source of EPA and DHA. In another study, the conversion rate of ALA to EPA and DHA was approximately 6% for EPA and 3.8% for DHA. With a diet rich in omega-6 fatty acids, conversion is further reduced by 40 to 50%. Other lifestyle factors including consumption of alcohol, high saturated fat intake, stress and vitamin/mineral deficiencies can reduce the rate of ALA conversion even further. Fish oil provides up to 200 times more EPA and DHA per gram than flax.

Again, this makes sense. Why would humans or other animals that did not eat flax but did consume large amounts of EPA and DHA directly from wild game meat and fish be genetically designed to have an efficient enzyme pathway to convert flax to EPA and DHA? Arguments trying to convince you that you can get enough EPA and DHA from flax are genetically unfounded, nutritionally unfounded (humans or our ancestors have NEVER eaten large amounts of flax) and scientifically unfounded because the research shows this is not the case. The fact is that flax oil is a healthy source of LNA but it is not a healthy alternative to fish oil as a source of EPA and DHA.

Furthermore, and perhaps most significantly, human breast milk is full of DHA. Scientific research clearly shows that children born to mothers who are deficient in EPA and DHA omega 3 fatty acids have neurological development impairments. Scientific research also demonstrates that children born to women who supplement with omega 3 fish oil like Omega Sufficiency™ can avoid these problems. In addition, children who supplement with EPA and DHA from fish oil like Omega Sufficiency™ have been shown to have less allergies, less eczema, learn better, and be less likely to have ADD or ADHD.

The data from scientific research and clinical trials is indisputably clear. Everyone needs to ensure that they have sufficient amounts of EPA and DHA from fish in their diets. Sadly, eating fish is not a viable option because of the documented dangerous levels of pollutants and toxins. Supplementing with Omega Sufficiency™, the world's premier purified, toxin and pollutant-free omega 3 EPA/DHA fish oil is not only scientific, it is common sense when it comes to maintaining and/or restoring your health and preventing disease.

Natural Triglycerides vs Chemical Concentration and Synthetic Esters

Here at Innate Choice™ we base our product development around the scientific fact that human beings and all other animals are genetically designed as part of nature and to derive all nutritional requirements from nature. We also understand that human beings have never intervened in nature and made it better. For this reason we go to great lengths to provide products that are as close to their natural, whole form as possible. Humans and all other animals are genetically designed to ingest, digest, absorb and utilize whole foods in their natural biochemical form. Based on these scientific facts we have chosen to keep Omega Sufficiency™ in its natural triglyceride form and in its natural EPA/DHA ratio.

All of the studies on the healthiest populations of people in the world who have virtually no heart disease, cancer, diabetes, obesity, high blood pressure, high cholesterol, depression, ADHD, Alzheimer's, arthritis, allergies, etc have shown that these people have sufficient amounts of EPA/DHA Omega 3 fatty acids in their diet from natural sources in their natural form and ratio.

It seems illogical and unscientific to use such data to support the importance of EPA and DHA Omega 3 fatty acids from fish oil and then to chemically alter the fish oil and change its biochemical properties. Several studies have shown that the natural triglyceride form of EPA and DHA found in Omega Sufficiency™is absorbed much better than the human-made, chemically concentrated synthetic ester form. In one study comparing absorption of different fish oil forms, the natural triglyceride form was 300% better absorbed than the synthetic ethyl ester form. Again, this makes sense, why would humans have proper digestive enzymes to absorb a fish oil with an unnatural form and ratio that our genes have never been exposed to?

References

Lawson LD, Hughes BG., 1988. Absorption of eicosapentaenoic acid and docosahexaenoic acid from fish oil triacylglycerols or fish oil ethyl esters co-ingested with a high-fat meal. Biochem Biophys Res Commun. Oct 31;156(2):960-3

Beckermann B, Beneke M, Seitz I., 1990. Comparative bioavailability of eicosapentaenoic acid and docasahexaenoic acid from triglycerides, free fatty acids and ethyl esters in volunteers. Arzneimittelforschung. Jun;40(6):700-4

Yang LY, Kuksis A, Myher JJ., 1990. Lipolysis of menhaden oil triacylglycerols and the corresponding fatty acid alkyl esters by pancreatic lipase in vitro: a reexamination. J Lipid Res. 1990 Jan;31(1):137-47
Chestnut, J.L. The Innate Diet & Natural Hygiene. 2004

Eaton et al. The return of n-3 fatty acids into the food supply. Land based animal food products and their effects. 1998 World Rev. Nutr. Diet. Vol 83, 12-23

Pawlosky, R. J., J. R. Hibbeln, J. A. Novotny, and N. Salem, Jr. Physiological compartmental analysis of linolenic acid metabolism in adult humans. J. Lipid Res. 2001. 42: 1257;–1265.

Gerster, H. Can adults adequately convert alpha-linolenic acid (18:3n-3) to eicosapentaenoic acid (20:5n-3) and docosahexaenoic acid (22:6n-3)? Int J Vitam Nutr Res 1998. 68(3): 159-73.

Adam O, Beringer C, Kless T, Lemmen C, Adam A, Wiseman M, Adam P, Klimmek R, Forth W. Anti-inflammatory effects of a low arachidonic acid diet and fish oil in patients with rheumatoid arthritis. Rheumatol Int. 2003 Jan;23(1):27-36.

Birch EE, Garfield S, Hoffman DR, Uauy R, Birch DG. A randomized controlled trial of early dietary supply of long-chain polyunsaturated fatty acids and mental development in term infants. Dev Med Child Neurol. 2000 Mar;42(3):174-81.

Birch EE, Hoffman DR, Castaneda YS, Fawcett SL, Birch DG, Uauy RD. A randomized controlled trial of long-chain polyunsaturated fatty acid supplementation of formula in term infants after weaning at 6 wk of age. Am J Clin Nutr. 2002 Mar;75(3):570-80.

Denomme J, Stark KD, Holub BJ. Directly quantitated dietary (n-3) fatty acid intakes of pregnant Canadian women are lower than current dietary recommendations. J Nutr. 2005 Feb;135(2):206-11.

Geleijnse JM, Giltay EJ, Grobbee DE, Donders AR, Kok FJ. Blood pressure response to fish oil supplementation: metaregression analysis of randomized trials. J Hypertens. 2002 Aug;20(8):1493-9.

Geusens P, Wouters C, Nijs J, Jiang Y, Dequeker J. Long-term effect of omega-3 fatty acid supplementation in active rheumatoid arthritis. A 12-month, double-blind, controlled study. Arthritis Rheum. 1994 Jun;37(6):824-9.

Hirashima F, Parow AM, Stoll AL, Demopulos CM, Damico KE, Rohan ML, Eskesen JG, Zuo CS, Cohen BM, Renshaw PF. Omega-3 fatty acid treatment and T(2) whole brain relaxation times in bipolar disorder. Am J Psychiatry. 2004 Oct;161(10):1922-4.

Krauss RM, Eckel RH, Howard B, Appel LJ, Daniels SR, Deckelbaum RJ, Erdman JW Jr, Kris-Etherton P, Goldberg IJ, Kotchen TA, Lichtenstein AH, Mitch WE, Mullis R, Robinson K, Wylie-Rosett J, St Jeor S, Suttie J, Tribble DL, Bazzarre TL. AHA Dietary Guidelines: revision 2000: A statement for healthcare professionals from the Nutrition Committee of the American Heart Association. Circulation. 2000 Oct 31;102(18):2284-99.

Morris MC, Evans DA, Bienias JL, Tangney CC, Bennett DA, Wilson RS, Aggarwal N, Schneider J. Consumption of fish and n-3 fatty acids and risk of incident Alzheimer disease. Arch Neurol. 2003 Jul;60(7):940-6.

Noaghiul S, Hibbeln JR. Cross-national comparisons of seafood consumption and rates of bipolar disorders. Am J Psychiatry. 2003 Dec;160(12):2222-7.

[No authors listed] Dietary supplementation with n-3 polyunsaturated fatty acids and vitamin E after myocardial infarction: results of the GISSI-Prevenzione trial.

Gruppo Italiano per lo Studio della Sopravvivenza nell'Infarto miocardico. Lancet. 1999 Aug 7; 354(9177):447-55. Erratum in: Lancet 2001 Feb 24;357(9256):642.

Peet M, Horrobin DF; E-E Multicentre Study Group. A dose-ranging exploratory study of the effects of ethyl-eicosapentaenoate in patients with persistent schizophrenic symptoms. J Psychiatr Res. 2002 Jan-Feb;36(1):7-18.

Prisco D, Paniccia R, Bandinelli B, Filippini M, Francalanci I, Giusti B, Giurlani L, Gensini GF, Abbate R, Neri Serneri GG. Effect of medium-term supplementation with a moderate dose of n-3 polyunsaturated fatty acids on blood pressure in mild hypertensive patients. Thromb Res. 1998 Aug 1;91(3):105-12.

Stark KD, Park EJ, Maines VA, Holub BJ. Effect of a fish-oil concentrate on serum lipids in postmenopausal women receiving and not receiving hormone replacement therapy in a placebo-controlled, double- blind trial. Am J Clin Nutr. 2000 Aug;72(2):389-94.

Stoll AL, Severus WE, Freeman MP, Rueter S, Zboyan HA, Diamond E, Cress KK, Marangell LB. Omega 3 fatty acids in bipolar disorder: a preliminary double-blind, placebo-controlled trial. Arch Gen Psychiatry. 1999 May;56(5):407-12.

Zanarini MC, Frankenburg FR. omega-3 Fatty acid treatment of women with borderline personality disorder: a double-blind, placebo-controlled pilot study. Am J Psychiatry. 2003 Jan;160(1):167-9.

