

## ***AlMega® Softgel Capsules***

AlMega capsules contain an organic seed oil blend providing omega-3, 6 and 9 fatty acids derived from cold-pressed flax, sesame, olive and sunflower oils. The ratio of these omega fatty acids to each other is specifically formulated to provide essential fatty acids (EFA's) in quantities that will enhance their optimal metabolic effect on the human body.

### **1. Composition and Key Ingredients:**

Three soft-gel capsules provide:

1140mg omega-3 Fatty Acids

570mg omega-6 Fatty Acids

600mg omega-9 Fatty Acids

There are two EFA's necessary for human metabolism. These are omega-3 fatty acids Alpha-Linolenic Acid (ALA) and Linoleic Acid (LA).

ALA is primarily derived from flax oil. The scientific name for ALA is *cis-W3,6,9-octadecatrienonoic acid*, abbreviated to 18:3w3. ALA has 3 double bonds, the first of which is on carbon atom number 3, the second is on carbon atom number 6 and the third is on carbon atom number 9, counting from the methyl end.

LA is derived from cold-pressed sesame and sunflower oils. The scientific name for LA is *cis-w6,9-octadecadienoic acid*, abbreviated to 18:2w6. There are 18 carbon atoms in the chain, with 2 double bonds. The double bonds are methylene interrupted, the first double bond starts at carbon atom number 6 and the second is on carbon atom number 9, counting from the methyl end.

Note that both these essential fatty acids are in the *cis* – configuration.

### **2. Other Ingredients:**

The other ingredients in the capsules include medium chain triglycerides (MCT's), rosemary extract and tocotrienols/tocopherols.

MCT's are used for energy and may promote thermogenesis. They complement the beneficial effects of ALA, LA and monosaturated fatty acids.

Rosemary extract and tocotrienols/tocopherols are potent antioxidants, which help ensure the stability and quality of the oil within the capsules.

The capsule contains gelatin, glycerin, purified water and carob. The carob provides a darker shell to the capsule which protects the softgel capsules against damage from exposure to light.

### **3. Chemistry and Metabolism of Essential Fatty Acids:**

The usefulness of ALA and LA in the human body results from their chemical properties.

EFA's attract oxygen and consequently increase oxidation and metabolic rate. EFA's absorb sunlight. Their absorption of light energy increases their ability to react with oxygen a thousand fold. This makes them chemically very reactive.

EFA's also carry slightly negative charges, which means that they repel one another. Consequently EFA molecules do not aggregate easily, so they keep membranes fluid, and this is vital with regard to their role in membrane metabolism. EFA's have a large surface activity (tendency to disperse) which gives biological systems the power to carry substances such as toxins to the skin surface, intestinal tract, kidneys or lungs where these substances can be excreted. The surface activity of EFA's also helps to disperse concentrations of substances that react with or dissolve in these fatty acids.

Specific functions of ALA and LA include energy production, oxygen transfer, haemoglobin production and of course, they are components of all cell membranes. LA and ALA substantially shorten the time required for fatigued muscles to recover from exercise. This is because they facilitate the conversion of lactic acid to water and carbon dioxide. LA and ALA are also involved in the production of secretions of both exocrine and endocrine glands.

EFA's are the precursors of prostaglandins and of longer chain fatty acids. EFA's are present in chromatin in the chromosomes and therefore play a role in chromosome stability. In children, ALA is required for brain development.

***AlMega versus Fish Oil Capsules:***

ALA found in flax oil is the parent fatty acid in the omega-3 family. A portion of ALA may be converted to eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) which are longer chain omega-3 fatty acids found in fish oil. On its own, ALA appears to have unique physiological benefits apart from its conversion to EPA and DHA. The other advantage is that the EPA made in the body is fresher. ALA-containing seeds and oils are available in fresher conditions than fish oils because they are simpler to produce (less processing). They are also more stable, and are less likely to contain toxic ingredients like polychlorinated biphenyls (PCB's). EPA and DHA are even more sensitive to light than ALA, making them more difficult to preserve in capsule form.

**4. Indications:**

Since EFA's cannot be manufactured in the human body, they are necessary as part of the daily food intake of all individuals. Most people don't eat enough ALA or LA in their natural state, which makes supplementation of these EFA's vital on a daily basis. However, specific conditions which may indicate a deficiency of any of the EFA's include the following:

- Arthritis
- Asthma
- Attention deficit disorder and/or hyperactivity
- Cardiac disorders
- Cancer – all variations
- Depression
- Dermatitis
- Dry eye syndrome

- Diabetes mellitus
- Eczema
- Hypertension
- Hormone imbalance
- Inflammatory disease
- Kidney disorders
- Memory loss
- Sensory disorders
- Senile conditions
- Sterility
- Systemic Lupus Erythramatosis (SLE)

**5. Contraindications:**

Any individual with a blood clotting disorder or gallbladder disease should take EFA's under supervision only. The physician must ensure that the patient is not allergic to any of the ingredients in AlMega capsules.

**6. Dosage:**

It is recommended to take 3 capsules twice daily with meals to maintain good health. However, if symptoms of deficiency present, then this dose can be doubled. i.e. 6 capsules twice daily with meals.

**7. Scientific Research & Suggested Reading:**

Strong evidence suggests that ALA has a protective effect on coronary heart disease. In a 10 year Nurses' Health Study, the risk of heart attack was reduced by 45% in individuals consuming a high intake of ALA. The Health Professionals Follow -Up Study found a similar decrease in risk for men who increased their ALA intake by 1%. Similarly the National Heart, Lung and Blood Institute Family Heart Study found a decreased risk of up to 70% in women with high intakes of ALA (0.96 g ALA per day).

Strong scientific evidence also supports the use of ALA as a protective measure against certain types of cancer. In one study it was found that women with high levels of ALA in their adipose breast tissue had a 60% lower risk of breast cancer than women with low levels of ALA (Eur J Cancer 2000, 36; 335-340).

- Davis BC, Kris-Etherton PM. Achieving optimal essential fatty acid status in vegetarians: current knowledge and practical implications. Am J Clin Nutr 2003; 78(3): 640S-646S.
- Belluzi A, Boschi S, Brinola C, Munarini A, Cariani C, Miglio F. Polyunsaturated fatty acids and inflammatory bowel disease. Am J Clin Nutr 2000; 71(suppl): 339S-342S.
- Erasmus U. Fats that Heal, Fats That Kill. 2<sup>nd</sup> Edition Sep 2005.