OMEGA-3 ESSENTIAL OILS

Reducing inflammation with fish oil supplements and dietary changes

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There are significant benefits from increasing levels of omega-3 fatty acids in people with autoimmune disease.

Omega Oil Balance

With the introduction of processed foods, the balance between dietary consumption of omega-3 and omega-6 oils has shifted, causing omega-3 fatty acid deficiencies when compared to diets rich in marine and plant sources. Consequently, in most industrialized countries, there is a deficiency of omega-3 oils and an imbalance in the ratio of omega-3 to omega-6 fatty acids. This deficiency of omega-3 fatty acids causes increased levels of the immune system chemicals that promote inflammation and autoimmune disease. Specifically, omega-3 fatty acids have immunomodulatory properties that reduce the amount and type of pro-inflammatory eicosanoids produced by the immune system while increasing production of anti-inflammatory compounds.

Omega-3 Deficiencies

Consequently, deficiencies of omega-3 fatty acids cause an erratic immune response. Furthermore, increased levels of omega-6 oils, in turn, leads to increased levels of the pro-inflammatory cytokines interleukin-1 and leukotriene LTB-4. High levels of these cytokines are seen in arthritis, Crohn's disease, ulcerative colitis, systemic lupus erythematosus (SLE), psoriasis, multiple sclerosis, depression and migraine headaches. According to several studies, omega-3 fatty acid deficiencies contribute to neurological disorders.

EPA And DHA

The most potent of the omega-3 fatty acids include eicosapentaneoic acid (EPA) and docosahexaneoic acid (DHA), which are found in oily fish, fish oils and certain plant oils such as flaxseed oil. The Mediterranean diet is one of the few diets that supply the proper balance of omega-3 and omega-6 oils. Supplements and food sources containing DHA and EPA reduces levels of arachidonic acid, a marker of inflammation. Studies also confirm that the addition of omega-3 oils results in suppressed production of pro-inflammatory cytokines and decreased adhesion molecule expression. In addition, fish oil feeding directly ameliorates the symptoms of chronic inflammatory diseases including rheumatoid arthritis and asthma and protects against the effects of endotoxins.
Studies also show a higher omega-3 oil intake is associated with a lower cancer risk. For example, countries with high consumption of fish such as Japan and Norway have markedly lower rates of cancer than people living in other parts of the world.

By contrast, a "Western-style" diet that is relatively low in omega-3 oils from fish oil is associated with rising cancer rates, possible related to the high content of saturated and trans fatty acids and the overabundance of omega-6 fatty acids.

**FDA Approval**

In 2006, the FDA approved the fish oil supplement (Omacar) for people with lipid disorders based on findings that these supplements low triglyceride levels, reduce arrhythmia, slow plaque growth, reduce blood clot formation, and reduce inflammation.

**Reducing Pain and Inflammation**

Several studies show that the addition of omega-3 fatty acids from fish oil may reduce the incidence of neck and back discomfort in patients with arthritis. Studies show that patients using fish oil supplements are able to use reduced amounts of non-steroidal anti-inflammatory drugs. The effects of omega-3 oils on inflammation including inflammatory heart disease are demonstrated in studies showing a reduction in the inflammatory marker, C-reactive protein (CRP) in people using fish oil supplements.

**Improved Vascular Function**

A recent study showed that greater ingestion of omega-3 fatty acids are clearly correlated with lower levels of blood markers associated with dangerous endothelial dysfunction. A past study showed that omega-3 fatty acids contributes to healthy vascular function by increasing the production of a natural blood vessel-dilating substance in endothelial cells.

**Sources of DHA and EPA**

Fish oil and cold-water fish are the most concentrated sources of DHA and EPA. Other less concentrated sources include flaxseed, flaxseed oil, walnuts and canola oil.

**Resources:**

