

Why Omega-3 Fatty Acids (Fish oil) are IMPORTANT

Fatty acids are an essential component of the walls of every cell in our body. The response to insult (chemical, toxic, mechanical injury, etc.) of some fatty acids is to create an inflammatory response. This is a good and necessary response because it allows the body to repair itself after injury. Other fatty acids respond to reduce the above mentioned inflammation. This, too, is a good and necessary response because once the area is repaired we don't want the inflammatory process to continue.

Those that promote inflammation are referred to as pro-inflammatory fatty acids. Those that reduce inflammation are referred to as anti-inflammatory fatty acids. When our cell walls are composed of many more pro-inflammatory fatty acids than anti-inflammatory fatty acids, the inflammation process goes unchecked and there is chronic sub acute (if no symptoms are apparent) inflammation. Unlike the acute inflammation you see with a sprained ankle, this inflammation is on the cellular level and usually not visible.

It has been suggested that a healthy ratio of anti-inflammatory to pro-inflammatory fatty acids would be between 1:1 and 1:4. Your ratio is determined by the foods you eat. The average American diet is excessively high in foods containing pro-inflammatory fatty acids, and consequently our bodies incorporate more pro-inflammatory fatty acids.... a ratio between 1:20 and 1:40. We have 20 – 40 times more pro-inflammatory fatty acids than anti-inflammatory fatty acids in our systems.

Such ratios create a pro-inflammatory state, which is thought to promote pain, inflammation, cancer, heart disease, Alzheimer's disease, inflammatory gut disease, depression, osteoporosis, and most of the other chronic diseases from which we suffer.

So what are the good and bad fatty acids? You guessed it... omega 3 fatty acids are the ones that are most associated with the anti-inflammatory response. The highest concentration of omega 3's is found in fish oil. Omega 6's are generally more associated with the pro-inflammatory state.

To correct our deficiency of omega 3 fatty acids we need to eat more of foods containing omega 3's and limit our intake of foods containing omega 6's.

Those foods that are rich in omega 3's include most fish, fruits and vegetables, olive oil, flaxseed oil, and wild game.

The foods to avoid or minimize because of high omega 6 content are grains, seeds, and their respective oils (bread, bagels, rolls, pasta, corn, chips, all flours, seeds, nuts, cakes, cookies, almost every packaged food at the supermarket), grain fed meats, chicken, and fish (farm raised). Consequently, it's easy to see how the ratios become so out of balance.

Adjusting your diet to include much more of the omega-3's and much less of the omega-6's needs to be a goal if you are interested in reducing the above mentioned problems associated with a pro-inflammatory diet. An omega-3 supplement (1000 – 4000 mg per day depending on your diet) will further help you achieve the desired fatty acid ratio.

Many articles discuss the benefits of fish and omega 3's. Consider the following few:

► **Pain Reduction: Published in Surgical Neurology, April 2006, pg 326-331**

Dr. Joseph Maroon, neurosurgeon and specialist in degenerative spine disease at the University of Pittsburgh treated 250 chronic neck and back pain patients with high doses of omega-3 fatty acids. Though all had been using daily doses of nonsteroidal anti-inflammatory drugs (NSAIDs), after 75 days of taking high doses of omega-3's, 59% had stopped taking drugs for their pain. Eighty-eight percent said they were pleased enough with the outcomes that they planned to continue using the fish oils. No significant adverse effects were reported."

The researchers say their findings suggest that this could be the answer to the adverse effects seen with nonsteroidal anti-inflammatory drugs (NSAIDs), including cyclooxygenase (COX)-2 inhibitors, which have been associated with potentially catastrophic adverse effects."

► **Heart Health: Published in American Family Physician, July 2004, pg 133-140**

Omega-3 fatty acids have been shown to significantly reduce the risk for sudden death caused by cardiac arrhythmias in patients with known coronary heart disease. The omega-3 fatty acids are also antithrombotic and anti-inflammatory, and with higher doses yield a modest decrease in blood pressure.

► **Depression: Published in American Journal of Psychiatry: 159(3), 2002:159(3), pp. 477-479.**

Can Eating Fish Fight Depression? The purpose of this study was to determine if a specific omega-3 fatty acid - ethyl ester of eicosapentaenoic acid (E-EPA) - prevents clinical depression. Twenty subjects with major depressive disorder were divided into two equal groups and given either two grams per day of an E-EPA supplement or a placebo in conjunction with their current antidepressant therapy, which included drug therapy. The supplement contained 96% pure fish oil; patients took it for four weeks. Significant improvements from adding E-EPA to therapy were observed by the third week of the study. Six of 10 patients taking the fish-oil supplement saw a 50% reduction in their Hamilton depression score, while only one patient of 10 taking the placebo saw a similar reduction. E-EPA reduced depressed moods, feelings of guilt and worthlessness, and insomnia; no side effects were reported.

► **Vision: Published in Archives of Ophthalmology 2000:118, pp401-404.**

Fish Consumption Reduces Risk of Macular Degeneration? The human retina and macula contain a high proportion of polyunsaturated omega-3 fatty acids. Few previous studies have examined potential associations between dietary fat or fish consumption and age-related maculopathy (ARM), a leading cause of irreversible blindness in the United States and Australia. This study involving 3,654 subjects (aged 49 years and older) "assessed whether dietary intake of fat or fish is associated with [ARM] prevalence." Results showed that increased consumption of fresh or frozen fish reduced the risk of developing ARM.

► **Asthma: Published in Journal of Asthma, May 2004, pg 319-326.**

There has been a suggestion that dietary factors may play a role in the recent increases in the prevalence of asthma, which is the leading cause of morbidity in children. The diets of 2602 children were evaluated to determine the ration of omega-3 to omega-6 fatty acids. The conclusion was that the omega ratio did serve as a predictor of the presence of asthma in children.

► **Brain Function: Published in the journal Neurology, January 2004, pg 275-280.**

The authors wanted to examine the association of fatty acid and fish intake with cognitive function. They studied a cross-sectional population of 1613 subjects ranging from 45-70 years old. Extensive cognitive testing was performed compared to habitual food consumption. Marine omega-3 fatty acids were found to be inversely related to the risk of impaired overall cognitive function and speed.

For more references on the health benefits of proper fatty acid balance see www.omega-research.com.

For additional copies of this handout visit the Health Tips tab of www.ElmenhurstChiro.com

