

Omega-3 Fish Oil: Nature's Cortisone & So Much More¹

The evidence for supplementing with omega-3 fats is now so firmly established that even mainstream doctors are convinced of its merits. ~ Life Extension Foundation/lef.org

The *Journal of the American College of Nutrition* has reported that EPA and DHA, two of the key omega-3 (“good”) essential fatty acids (EFAs) in the oil of fatty fish (e.g., anchovies, sardines, salmon, herring, halibut, white albacore tuna, and mackerel), are “essential for normal growth and development and may play an important role in the prevention and treatment of coronary artery disease, hypertension, arthritis, other inflammatory and autoimmune disorders, and cancer.” If this statement alone does not convince you that fish and fish oil supplements are critical elements of a healthy dietary regimen, perhaps the details below will.

The Role of Body Fat

Fat is critical to the human body's healthy function. It comprises more than 60% of the brain, maintains the integrity of our nerves, and keeps cell membranes “well lubricated.” Body fat is saturated, monounsaturated, or polyunsaturated. The more double bonds a fat has, the more unsaturated or “fluid” it becomes. Although healthier for the body, unsaturated fat requires more antioxidant protection because it is more prone to free radical oxidation.

There are two types of polyunsaturated fatty acids (PUFAs), Omega-3 (alpha linolenic) and Omega-6 (linoleic), each of which is a long-chain fat that enables it to produce the eicosanoids that positively impact health. A diet ratio of Omega-3:Omega-6 close to 1:1 ensures overall good health.² Seeds and grains, including wheat, corn, soy, sunflower, and safflower, contain Omega-6 fatty acids. Fish oil generally contains large amounts of PUFAs. The Omega-3 fatty acids in fish oil have EPA (eicosapentaenoic acid) and DHA (docosahexaenoic acid), which produce **anti-inflammatory, immune-supporting**, hormone-like prostaglandins (PGE1 and PGE3). EPA is the good anti-inflammatory fat that promotes overall health because inflammation is the key element common in *all* diseases. DHA is the good anti-inflammatory fat that most benefits the brain, nervous system, and eyes.

EPA+ DHA: Numerous Benefits

Fish oil is a critical part of every child's and adult's nutritional supplement regimen.

Due to its anti-inflammatory property, reliable, consistent scientific data supports the use of fish oil to address Crohn's disease, rheumatoid/osteoarthritis, elevated triglycerides, and excessive blood clotting. Some studies also support its use to treat ulcerative colitis, Raynaud's disease, psoriasis, eczema, asthma, COPD, PMS, migraines, MS, and diabetes.³

According to Stephen Coles, MD, PhD, new research shows that Omega-3s even improve bone structure by (1) boosting the absorption of calcium, (2) maintaining bone mineral density, and (3) reducing bone loss, especially in post-menopausal women.⁴

As for the positive impact of Omega-3 fatty acids on vision, research has shown that: (1) a high intake may help reduce the risk of age-related macular degeneration (AMD)⁵; (2) the imbalance of Omega-3 and Omega-6 fatty acids in the eye can increase the risk of macular-degeneration risk⁶; and (3) both high intake and maintaining the proper Omega3:Omega-6 ratio significantly lowers the risk of dry eye syndrome (DES).⁷

Omega-3s improve immunity by: (1) increasing the activity of phagocytes (white blood cells) that destroy bacteria; (2) speeding healing by strengthening cell membranes; and (3) increasing the body's resistance to infection.

JAMA (January 2011) reported a cardiac study that demonstrated “a potentially new link between Omega-3 fatty acids and the aging process.”⁸ Researchers found that patients with high levels of Omega-3 fatty acids in their white blood cells experienced significantly less shortening of telomeres over five years, as compared with patients with lower omega-3 levels.⁹ (Telomeres are structures at the end of chromosomes (threadlike structures in cell nuclei

that carry genes) that determine longevity. Due to genetic factors and environmental stressors, telomeres in normal tissue get progressively shorter as part of the aging process. As a result, organs atrophy and brain cells die.¹⁰⁾

DHA: An Essential Brain Food

Studies show that DHA is essential for infants' (especially if premature) proper brain function and visual and nervous system development.

The effects of DHA on the nervous system are also considered to extend beyond infancy because it: (1) protects brain tissue from age-inducing inflammatory damage from oxidative and other stresses; (2) stimulates physical changes that underlie learning and memory; and (3) promotes healing after brain tissue injury from seizure, stroke, or traumatic brain injury.¹¹ Large-scale epidemiological studies reveal that consuming an average of **3g/day of fatty fish** reduces by 19-23% the risk of mild cognitive impairment, which can progress to Alzheimer's disease.¹² One other study concluded that **200mg/day of DHA** results in "a large increase in the proportion of DHA in blood lipids in vegetarians and vegans."¹³

Alternate Sources of Omega-3

Krill feeds on plankton and is a staple for whales and other ocean animals. Unlike fish oil that contains EPA and DHA in triglyceride form, krill oil contains large amounts of EPA and DHA with phospholipids, which offer higher bioavailability, phosphatidylcholine, and high amounts of antioxidants (Vitamins A, D, E, carotenoids, and astaxanthin). Less krill oil thus needs to be consumed to get the same amount of EPA and DHA into the blood stream compared to fish oil. However, krill oil: (1) contains less DHA per milligram; (2) is about twice as expensive as fish oil; (3) has not been extensively studied; and (4) is not a sustainable resource since it is at the bottom of the food chain. Very little is known about how long term harvesting of krill will impact the ocean's biosphere.

Those who do not consume fish are dangerously at risk for developing low DHA levels.¹⁴ Fortunately, they can now obtain DHA from algae-sourced nutritional supplements. Fish do not make EPA and DHA, but rather provide them by consuming algae, which produce them using solar-energy-powered special enzymes. While vegetarian flax oil provides Omega-3, 6 and 9, it is an inferior source of Omega-3 fatty acids since it contains only ALA, which the body must convert to EPA.

Quality, Directions & Blood Levels

Not all fish oil products are equally beneficial. Ideally, fish oil supplements should be molecularly distilled or pharmaceutical grade, cholesterol- and contaminant-free, and enteric coated [to promote maximum absorption and proper digestion (i.e., prevent "fish burps)]. A high-quality, 500mg EPA/250mg DHA product taken twice daily provides the baseline therapeutic dose. Most researchers have administered at least 3,000 mg/day of the total of EPA+DHA in studying the impact of fish oil on humans with various health conditions.

To maximize absorption, Omega-3 supplements should be taken in divided doses with fat-containing food (ideally, a large meal).¹⁵ If you are wondering whether your blood contains adequate levels of EPA and DHA in the right ratio, Life Extension® offers a simple Omega-3 blood test (\$175) for evaluating the success of supplementation with fish oils.

Conclusion

While anti-inflammatory, immune-supporting fish oil can be used safely in a preventive regimen, it is best to seek the advice of an expert in complementary medicine when attempting to change the course of disease. Since nutritional supplements can interact with prescription drugs, advise your doctor of your desire to incorporate complementary medicine into your health program, and do your own research before mixing natural remedies with any prescribed medications.

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¹ <usual FDA disclaimer statement>

² “Something Fishy,” Better Nutrition Magazine, August 2011, L. Stephen Coles, MD, PhD

³ Something Fishy, 23

⁴ Something Fishy, 23

⁵ Something Fishy, 20.

⁶ Something Fishy, 22

⁷ Something Fishy, 22 (citing the Amer J. of Clin Nutrition, trial that was part of the Women’s Health Study)

⁸ <http://online.wsj.com/article/SB10001424052748703837004575013393566949312.html>, .Omega-3 Fatty Acids Are Linked to Longevity, january 20, 2010, Wall Street Journal, Thomas Burton

⁹ ibid

¹⁰ <http://online.wsj.com/article/SB10001424052748703785704575642964209242180.html>, Aging Ills Reversed in Mice: Scientists Tweak a Gene and Rejuvenate Cells, Raising Hopes for Uses in Humans, November 28, 2010, GAUTAM NAIK

¹¹ “DHA: An Essential Brain Food,” Kirk Stokel, Life Extension Magazine, Nov/Dec 2012, 18.

¹² Life Ext, Nov/Dec 2012, 18

¹³ Life Extension Magazine, Nov/Dec 2012, 9 (citing Prostaglandins Leukot Essent Fatty Acids. 2009 Aug-Sept; 81 (2-3):137-41).

¹⁴ Life Ext Mag nov/dec 2012, 20

¹⁵ Life Extension Magazine, Nov/Dec 2012, page 9