Health Benefits of Omega-3s: Something Fishy Going On?

Contributed by Anssi Manninen, MHS
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Fish, especially oily species like mackerel, lake trout, herring and sardines, provide significant amounts of EPA and DHA. A growing body of evidence indicates that these fatty acids can:

- Decrease risk for thrombosis (the formation or presence of a blood clot within a blood vessel), which can lead to heart attack and stroke.

- Decrease triglyceride and remnant lipoprotein levels.

- Decrease the rate of growth of atherosclerotic plaque.

- Improve endothelial function.

- (Slightly) lower blood pressure.

- Reduce inflammatory responses.

It's very important to realize that only omega-3 fatty acids from fish oil have cardio-protective properties. A systematic review, published in The American Journal of Clinical Nutrition, concluded that "Increased consumption of [omega-3 fatty acids] from fish or fish-oil supplements, but not of [linolenic acid], reduces the rates of all-cause mortality, cardiac and sudden death, and possibly stroke."

Omega-3 Fatty Acids and Athletic Performance

Omega-3 fatty acids have been suggested to be ergogenic (performance-enhancing), not because of their energy content, but because they may elicit favorable physiological effects relative to several types of physical performance. Omega-3 fatty acids can be incorporated into the membrane of the red blood cells, making these cells less viscous and less resistant to flow. Less viscous red blood cells and the vasodilative effect may enhance blood flow, facilitating the delivery of blood and thus oxygen and nutrients to the muscle. Another theory is based on the role of certain eicosanoids (by-products of omega-3 fatty acids), which may stimulate the release of growth hormone.

A study by Dr. Derek Huffman and colleagues at the University of Missouri, Columbia, examined the effects of an acute, high dose and a chronic low dose of fish oil on fat oxidation (burning) during exercise. The acute, high-dose fish oil had no significant effect on fat use during exercise. In contrast, chronic supplementation significantly augmented total fat energy expenditure. The study suggested that by increasing fat use during exercise, chronic fish oil supplementation might have some ergogenic and fat loss benefits.

Furthermore, recent data suggest that fish oil supplementation has a markedly protective effect in suppressing exercise-induced bronchoconstriction (constriction of the bronchial air passages) in elite athletes and this may be attributed to their anti-inflammatory properties.

Other Benefits of Fish Oil

Studies indicate that omega-3 fatty acids have benefits in rheumatoid arthritis, systemic lupus erythematosus, Crohn's disease, ulcerative colitis and immunoglobulin A nephropathy. Also, there's compelling evidence that diets high in fish oil may protect against the development of Alzheimer's disease and prostate cancer.

Fish Oil Supplement-related Nonsense

A poorly written nutrition textbook, misleadingly titled, Understanding Nutrition, claims that "Fish oil supplements are not recommended for a number of reasons....Fish oil supplements are made from fish skin and livers, which may contain environmental contaminants."4 This statement is utter nonsense. Fish oil capsules contain no mercury. Mercury is water-soluble, not oil-soluble, so when the oil is extracted from the fish, the mercury (and other heavy metals) stays behind in the fish meat. Organic pollutants are potentially another concern. However, fish oil concentrates- the most commonly used supplements- are not derived from the livers of fish, but from the muscles and so they're lower in pollutants than liver oils.1 Consumer Reports wrote, "Our tests of 16 top-selling fish-oil supplements were reassuring: All those pills contained roughly as much EPA and DHA as their labels promised. None showed evidence of spoilage, and none contained significant amounts of mercury, the worrisome PCBs or dioxin."

About Anssi Manninen

Anssi Manninen holds an MHS in sports medicine from the University of Kuopio Medical School. His numerous cutting-edge articles in MD firmly establish his reputation as a leading authority on hardcore sports nutrition. Anssi´s articles have also been published in scientific journals, including The British Journal of Sports Medicine, The Journal of International Society of Sports Nutrition, Metabolic Syndrome and Related Disorders, Nutrition & Metabolism, and Journal of Sports Science and Medicine. Anssi is also an associate editor for Nutrition & Metabolism, a leading scientific journal in the area of nutritional biochemistry.

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