

# The Omega-3 -6 Controversy

## Too Much or Not Enough?

### *InBrief*

by Madeleine Beckman

The 2012 National Health Interview Survey, to date, provides the most comprehensive information on complementary health approaches in the U.S. According to the survey, fish oil is one of the most commonly used nonvitamin/nonmineral dietary supplements among adults and children in the U.S. Reasons for fish oil supplementation range from improved heart health to reduced symptoms of ulcerative colitis. However, definitive evidence is lacking to support its use, and the words “may” and “promising” frequently appear in journal articles when discussing omega-3 and -6 supplementation.

Omega-3 fatty acids (generally considered the healthier fatty acids) are essential polyunsaturated fats usually obtained from the human diet. There are three types of omega-3 fatty acids (also called n-3 fatty acids): eicosapentaenoic acid (EPA), docosahexaenoic acid (DHA), and  $\alpha$ -linolenic acid (ALA). EPA and DHA are found in fatty fish such as wild salmon, lake trout, sardines, anchovies, striped bass, and Arctic char. ALA is the plant form of omega-3 fatty acids found in flax meal, chia seeds, walnuts, and flax seed oil. The conversion of ALA to EPA/DHA is limited.

A multitude of presumed health benefits of omega-3 fatty acids have been shown in research studies. Particularly impressive have been the findings for preventing heart disease. Many studies report some effectiveness of n-3 fatty acids (especially from diet) for reducing triglycerides and metabolic syndrome; decreasing risk of stroke and heart disease; and reducing plaque and arteriosclerosis. Other benefits, according to previous studies, include reducing inflammation, reducing symptoms in rheumatoid arthritis, improving blood vessel elasticity, decreasing clotting, improving cognitive decline and depression, and reducing the risk of

macular degeneration. It's been reported that omega-3 fatty acids might even help regulate heart rhythm and decrease heart rate and blood pressure.

However, in a recent meta-analysis of omega-3 studies (Cochran Database, April 2017, a review of 79 trials involving 112,000 participants and mostly involving supplementation with fish oil capsules), the authors found no "high quality evidence that omega-3 fatty acids supplementation is effective for improving core and associated symptoms of arteriosclerotic heart disease (ASHD)." Furthermore, "given the paucity of rigorous studies in this area, there is a need for large well-conducted randomized controlled trials..." Although EPA and DHA (the omega-3 fatty acids), especially in the diet reduces serum triglycerides and slightly raises HDL (high-quality evidence), only increasing plant-based ALA may be slightly protective for some heart and circulatory diseases especially anti-arrhythmic effects.

Significant research has also been conducted with omega-3 fatty acids and childhood-associated diseases such as asthma, cognitive learning disabilities, and autism. In an article in the *European Journal of Clinical Nutrition*, the authors report on a study amongst children with a history of asthma. In the study, 239 children were randomized to receive tuna fish oil (high in omega-3s with 135 mg DHA, 32 mg EPA, and low in omega-6 fatty acids) or Sunola oil (low in omega-3s, but contains omega-6s) daily from age 6 months to 5 years. The National Assessment Program Literacy and Numeracy (NAPLAN) test was administered in school every 2 years. The authors concluded that their findings didn't support administering fatty acids to children in infancy and childhood to improve academic performance.

Despite experts advocating for large-scale studies to gain "evidence", omega-3 and omega-6 supplementation remains widely seen as beneficial for a panacea of diseases and diagnoses including: ADD, psychiatric disorders, cystic fibrosis, macular degeneration, and cancer. On the other hand, quoting an academic- "I don't recommend supplementation to my patients," says Van-Hong Nguyen, MD, FACC, a cardiologist and Assistant Professor, Mt. Sinai Medical Center, in

New York. Nguyen is skeptical of anything that's a "panacea". "I recommend that my patients get their omegas through diet."

So, until further research is conducted and more definitive evidence is in, it's best to get omega-3 and omega-6 through food. Additionally, there's also research that supports the dangers of too much of these essential fatty acids: "...There is also evidence that a high omega-6 fatty acid diet inhibits the anti-inflammatory and inflammation-resolving effect of the omega-3 fatty acids. The interaction of omega-3 and omega-6 fatty acids and their lipid mediators in the context of inflammation is complex and still not properly understood. (*Prostaglandins Leukot Essential Fatty Acids*, 2018 May)

The FDA currently recommends that adults get 250-500 mg combined EPA and DHA daily. For children, the Institute of Medicine recommends a daily intake of between 700 mg to 1200 mg, dependent on age.

### **Good sources of omega-3 include:**

- Fish and other seafood (ie, salmon, mackerel, tuna, herring, sardines)
- Soybeans and edamame
- Kidney beans
- Nuts and seeds (ie, flaxseed, chia seeds, walnuts)
- Seaweed and algae
- Fortified foods (ie, eggs, yogurt, juices, milk, soy beverages)

### **Good sources of omega-6 include:**

- Eggs
- whole grain breads
- cereals
- Oils, such as flaxseed, hempseed, grapeseed
- Seeds, such as: pumpkin, sunflower, flaxseed, hempseed
- Nuts, including pignolia (pine) and pistachios

In conclusion, the omega-3 and omega-6 (essential polyunsaturated) fatty acids both show health benefits. However, when intake of omega-6's far outweigh the omega-3's, this may reverse some of the benefits of the omega-3's, especially their anti-inflammatory effects. Until we have better studies, this author recommends:

1. Obtaining your fish oil from whole foods rather than from supplementation, as much as possible
2. Replacing your saturated fats with omega-3 and omega-6 fatty oils
3. Trying to maintain a more favorable ratio of omega-3 to omega-6 (1: 4 or better)

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