

## *Omega-3 Fatty Acids: Some Frequently Asked Questions*

### **What is inflammation?**

Inflammation is one of the body's natural ways of protecting itself. It includes many chemical reactions that help to fight off infections, to increase blood flow to places that need healing, and to cause pain as a signal that something is wrong with the body. Unfortunately, it is possible to have too much of a good thing. A number of medical conditions are linked to too much inflammation in the body.

### **What are omega-3 fats?**

There are two groups of fats that our bodies can't make, omega-6's and omega-3's. These two groups have very different properties. Most omega-6 fats promote inflammation, while omega-3's decrease it. For that reason, taking more omega-3's might help prevent or treat health problems that are associated with inflammation. Our ancestors probably ate about the same amounts of omega-3's as omega-6's. Now on average we eat about 25 times more omega 6's than omega 3's. Fast foods, partially hydrogenated fats, most meats, and dairy products can all increase the inflammation in our bodies.

### **What does the research tell us?**

There is a good chance that omega-3 fats can be helpful with any illness involving inflammation. Some diseases have been studied more than others.

- **Good research** supports their use for:
  - Prevention of heart disease
  - Management of heart disease in patients who already have it
  - High triglycerides
  - High blood pressure (can give a drop of 4-15 for the top number and 2-8 for the bottom)
  - Rheumatoid arthritis, especially managing symptoms
  - Healthy infant development in pregnancy
  
- **Fairly good research** supports their use for:
  - Cancer prevention, especially colon, esophageal, oral, rectal, breast, and prostate cancers
  - Depression (especially associated with bipolar disorder)
  - Prevention of dementia
  - Management of ADHD
  - Asthma
  - Hereditary allergies (e.g., eczema, allergic dermatitis—an inflammation of the skin)
  - Prevention of infections in children (in a small study)
  
- While more research remains to be done, omega-3 fats **can also be considered** for:
  - Autoimmune diseases such as multiple sclerosis and lupus
  - Cystic fibrosis
  - Chronic pain
  - Osteoarthritis
  - Chronic obstructive pulmonary disease (COPD) (e.g., emphysema, chronic bronchitis)



## Omega 3 Fatty Acids

### Can't I just eat a diet high in omega-3 fats?

It is always a great idea to try to get what your body needs by eating a healthy diet. However, it is often challenging to get enough omega-3 fats. Foods high in omega-3 fats include fish that live in cold water (such as salmon, herring, sardines), walnuts, ground flaxseed, and leafy green vegetables. See the table below for the amount of omega-3 fats in foods.

Unfortunately, most people do not get enough of these foods to balance out the omega-6 fats they eat. Because fish often contain dangerous levels of mercury and other chemicals, supplements may be a safer option. The amount of omega-3 fat in meats depends on how animals were fed. For example, fish that eat algae have more omega-3's than fish that were farm-raised on grains.

Omega-3 Polyunsaturated Fatty Acids in Foods			
Food	Serving Size	Type of Omega-3 Fat	Amount of Omega-3 Fats
<b>Fish</b>			
Pacific Herring	3 ounces	DHA and EPA	2 grams
Chinook Salmon	3 ounces	DHA and EPA	1.5 grams
Atlantic Salmon	2.5 ounces	DHA and EPA	1 gram
Sockeye Salmon	3 ounces	DHA and EPA	1 gram
Pacific Oysters	2.5 ounces	DHA and EPA	1 gram
Rainbow Trout	3.5 ounces	DHA and EPA	1 gram
Canned White Tuna	4 ounces	DHA and EPA	1 gram
Canned Light Tuna	3 ounces	DHA and EPA	0.25 grams
Dungeness Crab	3 ounces	DHA and EPA	0.33 grams
<b>Plant-Based Foods</b>			
Flaxseed Oil	1 tablespoon	ALA	8.5 grams
Flaxseeds	1 tablespoon	ALA	2.2 grams
English Walnuts	1 ounce	ALA	2.6 grams
Black Walnuts	1 ounce	ALA	0.6 grams
Walnut Oil	1 tablespoon	ALA	1.4 grams
Canola Oil	1 tablespoon	ALA	1.2 grams
Mustard Oil	1 tablespoon	ALA	0.8 grams
Soybean Oil	1 tablespoon	ALA	0.9 grams
Firm Tofu	½ cup	ALA	0.7 grams
<p><b>DHA = docosahexaenoic acid, EPA = eicosapentaenoic acid, ALA = alpha-linolenic acid</b>  <b>A 3 ounce serving of fish is the size of a deck of cards.</b></p> <p>Information compiled in part from Higdon, <i>An Evidence-Based Approach to Dietary Phytochemicals</i>, New York, Thieme, 2011.</p>			

### What kinds of supplements can I take?

There two main groups of supplements: 1) EPA + DHA and 2) alpha-linolenic acid (ALA).

#### 1. EPA & DHA

- **Fish oil** supplements can either be taken as capsules (like vitamin E) or as a liquid. They are dosed based on the two main fatty acids they contain, EPA and DHA. Usually, for every 3 milligrams of EPA in a fish oil dose, there are 2 milligrams of DHA.



## Omega 3 Fatty Acids

For example, 1 gram of fish oil usually contains about 180 milligrams of EPA and 120 of DHA. Cod liver oil also contains DHA and EPA, but in lower amounts than most fish oil supplements. Cod liver oil and fish oil are NOT the same thing.

- **Krill Oil** is the oil from the shrimp-like crustacean, krill. Krill oil contains significant amounts of the omega-3 fatty acids EPA and DHA; however, the concentration of these fatty acids in krill oil products is usually less than in fish oil products. Krill is a major source of food for certain whales, seals, penguins and other animals. Therefore harvesting it from the ocean has been a subject of environmental debate.
- **Algal Oil.** Algae, which are aquatic plant-like organisms, are a source EPA and DHA. Algal oil supplements currently on the market mainly provide DHA from microalgae. If you are primarily interested in DHA or are vegetarian, algal oil supplements are a good option. They are typically very low in contaminants since algae is low on the food chain.

### 2. Alpha-linolenic acid (ALA)

ALA is converted to DHA or EPA, but only in minimal amounts. DHA and EPA have been proven helpful in many studies of inflammation, but ALA has received less attention. For inflammation-related issues, fish oil may be the better choice. A usual dose of ALA is 1 or 2 grams a day.

Examples of supplements rich in ALA:

- **Flax.** Ten grams of flaxseed provide 4 grams of different fats, including alpha-linolenic acid. If seeds are used, they must be ground. Flax oil breaks down with heat, so it should be kept cold. Taking flax can raise the body's DHA and EPA levels slightly, but it is not clear how much ALA is converted into DHA and EPA. Ground flax seed can be sprinkled on salads or put in smoothies. Flax contains 23 grams of ALA per 100 grams. It tends to be a good choice if you don't eat fish and is also a rich source of fiber
- **Soybean oil** is obtained by cold pressing the seeds of the Glycine soja. It may reduce both total cholesterol and LDL cholesterol. Taking soybean and avocado oils by mouth appears to improve pain and overall disability for people with osteoarthritis. It seems to be more effective for osteoarthritis of the hip than the knee.

### **What doses of omega-3's should I take?**

In research studies, a wide range of doses has been used.

A good rule of thumb for most people using fish oil for prevention of heart disease, take 1000 mg of EPA + DHA daily.

Other sources of omega-3's tend to contain ALA, which may not be converted to DHA and EPA at high levels. Fifteen to 30 milliliters of flax oil have been used to lower cholesterol. If you want to buy whole flaxseeds, grind up about 1-2 tablespoons to use on cereal, in smoothies, etc. This is a standard dose. Fish and flax oils can sometimes cause indigestion or a bloated feeling. It can help to take a few small doses each day, instead of one large dose. Storing the oils in the freezer makes them easier to take. They won't freeze.



## Omega 3 Fatty Acids

### **Are there any side effects from taking omega-3's?**

High doses (more than 5 grams of fish oil a day) may use up the body's supply of antioxidants. It might be a good idea to take extra vitamin C or E to make up for this. (Follow the recommended daily allowance [RDA]). Aside from mild indigestion, these supplements tend to be very safe at the recommended doses. It is a good idea for pregnant women to take omega-3's as well, since many studies show they decrease problems in pregnancy and can help protect the baby from illness even after birth. Omega-3's in high doses increase bleeding risk, but this has not proven to be a major problem in doses of 3-4 grams a day. (The effect is less than the effect of aspirin.) They may lead to hypomania (a mild manic state) in people with bipolar disorder. They may slow down the immune system at high doses, so people with lowered resistance to disease (e.g., those with HIV) should keep fish oil doses at less than 3 grams a day.

Fish oil supplements are generally safer than fish meat, as far as being contaminated by mercury, PCB's and other toxins. Fish meat carries more of these toxins than the oils. When the fish oil is processed, the toxins tend to be filtered out in the processes that remove the "fishy odor." Most supplements, especially well-respected national brands, have been found to be toxin-free.

### **How long does it take for omega-3's to work?**

Levels of omega-3's build up quickly in the body once you take supplements. But it may take 6 weeks to 6 months to see a significant change in mood, pain, or other symptoms.

### **What brands of omega-3's should I consider?**

As with any supplement, it can be helpful to look for quality seals on the packaging. The United States Pharmacopeia (USP) and the FDA's Good Management Practices (GMP) seals can help. In addition, [www.consumerlab.com](http://www.consumerlab.com) can be a useful resource. This website, which is supported by subscription funds, evaluates whether or not supplements contain what their labeling says they do. Below are listed the products that passed evaluation by Consumer Lab in 2011. Note that, while they test a number of popular brands, not all omega-3 products were tested.

- **Softgels:**

- Advocare OmegaPlex
- CardioStat Omega-3 Fish Oil Triple Strength
- CVS Pharmacy Natural Fish Oil
- Finest Natural Omega 3 Krill Oil (contains fish oil as well)
- Garden of Live Oceans 3 Beyond Omega -3
- Life Extension Super Omega-3
- New Chapter WholeMega
- Nordic Naturals DHA Strawberry Taste
- PregnancyPlus Omega-3
- Puritan's Pride Natural Omega-3 Fish Oil
- Quest Longevity Omega-e Complete (Canadian Brand)
- Res-Q 1250
- Solgar Omega-3 "950"
- Swanson EFA's Super EPA
- Trader Joe's Molecularly Distilled Omega-3 Fatty Acids
- Vitamin Shoppe Meg-3 Fish Oil
- Vitamin World Omega-3 Fish Oil
- Weil/Andrew Weil, MD Omega-3 Complex



Kittikun Atsawintarangkul  
FreeDigitalPhotos.net

#### PATIENT HANDOUT



## Omega 3 Fatty Acids

- **Enteric-Coated Softgels (formulated to decrease risk of stomach upset)**

GNC Triple Strength Fish Oil  
Kirkland Signature Enteric Coated Fish Oil Omega 3  
Nature Made Odorless Fish Oil  
Olympian Labs Enteric Coated Omega-3 Fish Oils  
Origin Odorless Omega-3 Fish Oil  
VitalOils Omega-3 Fish Oils  
VitalOils 1000 Ultra High Potency Omega-3 Fish Oil

- **Liquids**

NSI Liquid Omega-3 Purified Fish Oil  
Vital Nutrients Ultra Pure Fish Oil Regular Strength

- **Algal Oil (vegetarian)**

Natrol DHA Omega-3

- **Krill Oil**

Finest Natural Omega-3 Krill Oil  
Mercola Premium Select Krill Oil  
Source Naturals Arctic Pure Krill Oil

- **Children's Omega 3's**

Dr. Sears Go Fish Strawberry-Lemon Flavor  
OmegaBrite Kidz Orange Cream Flavor  
OmegaBrite Kids Tutti Frutti Flavor

***The information in this handout is for general education. It is not meant to be used by a patient alone. Please work with your health care practitioner to use this information in the best way possible to promote your health.***

This handout was written by Adam Rindfleisch MPhil, MD, Assistant Professor in Family Medicine and Integrative Medicine Consultant, Srivani Sridhar MD, Integrative Medicine Fellow, Jackie Redmer MD, MPH, Integrative Medicine Fellow, and David Rakel MD, Associate Professor and Director of the Integrative Medicine Program. All are in the Department of Family Medicine at the University of Wisconsin-Madison School of Medicine and Public Health.

*Date Created: May 2012*

**NOTES:**