Omega 3s
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Whether you come from a coastal town, from the corn fields of Iowa, or are a Sonoran Desert native, you have probably heard the message that you need to be eating more fish -- but why? Fatty fish, including mackerel, trout, sardines, and salmon are all sources high in the polyunsaturated fatty acid, omega-3. Omega-6 fatty acids are also a polyunsaturated fat, and both omega-3 and omega-6 are essential fatty acids that we need in our diet, because we cannot produce them ourselves. Omega-6 sources include vegetable oils, nuts, seeds and plant-based margarine -- sources easily obtained in the typical Western diet. In fact, it is estimated that the Western diet currently contains an omega-6 to omega-3 ratio of 20-30 to one. Researchers have not determined an "optimal" omega-6 to omega-3 ratio; however a ratio of 4:1 or lower is thought to be the most beneficial. Thus, we have seen a recent rise in the popularity of omega-3 fatty acids -- ALA, EPA, and DHA.

Recent clinical and epidemiological studies show that omega-3 fatty acids may have many benefits including cardiovascular health improvements resulting in the reduction of serum triglycerides, heart rate, and blood pressure, as well as anti-arrhythmic and anti-thrombotic effects. Research supports the mood-stabilizing effects of omega-3s, and they are known to be important during pregnancy, lactation and infancy. Dose recommendations vary, but 1-2 g of EPA and/or DHA per day, or two servings of fatty fish per week, is thought to be beneficial for most people, and is advocated by the American Heart Association. High quality cold water fatty fish can be expensive, especially if you do not live near the ocean, and some types of fish are high in contaminants including mercury, PCBs, and dioxins. This includes mackerel, swordfish, and other large predatory ocean fish. Fortunately for desert dwellers, there are other options.

100% Grass fed, grass finished beef: The meat from cows raised on their natural diet of grass is higher in omega-3 fatty acids – 8 to 10%, as opposed to the 1 to 3% omega-3 content of corn-fed cows. While beef can be a source high in saturated fat, if you enjoy meat - think about enjoying grass-fed beef because you'll be getting omega-3s, as well. Your local farmer's market is a good place to seek out grass-fed meat.

Wild Game: Another source of omega-3s is the meat of wild game. Grasses and plants are their natural diet, and the meat is lean since they get lots of exercise.

Omega-3 eggs: The same idea applies to chickens. Chickens that are allowed to eat their natural diet of grass, seed, grubs and bugs, lay eggs higher in omega-3s. However, many of the omega-3 fortified eggs found in the store are produced by enriching the chicken feed with vegetarian omega-3 sources. Either way, you are getting a product higher in omega-3 content.

Anchovy, Sardines, and Herring: Small fish are also a smart choice because they are usually wild caught and their populations are rapidly replenished. Since they are lower on the food chain, small fish contain little to none of the environmental toxins found in tuna or mackerel, and they are a good dietary staple.

A note on vegetarian options. The reason fish are emphasized as the source for omega-3s is that fatty fish offer omega-3 fatty acids, EPA and DHA, both of which are readily used in the body. Most vegetarian sources offer omega-3s in the ALA form, which must be converted to EPA and DHA. This is no reason to underestimate their food value, however. Here are other plant-based options for adding omega-3s to your diet:

Flax Seed/Oil: Whether ground as flax meal and added to salads, smoothies or cereals or as oil used in salad dressings -- flax is a great way to work omega-3s into your diet. However, the seeds must be ground to be effective, and both flax meal and the oil are very sensitive to light and heat. Store in a cool, dark place and use quickly to avoid consumption of a rancid product. Flax seeds can also be stored in the refrigerator or freezer. Tip: Use a grinder and grind only the flax meal you are going to use in one serving. Keep the remaining seeds in the refrigerator.

Chia Seeds: You are probably familiar with chia pets, but you might not know that chia seeds are an ancient crop, grown in Mexico, and that they are a great source of omega-3s. Chia seeds are an easy addition to your diet since they do not need to be ground and they can be incorporated into many different dishes: For breakfast, add chia seeds...
to your cereal -- hot or cold. Chia can be added to bread, muffin, pancake, or waffle mixes. Try adding the seeds to cottage cheese, yogurt, smoothies, or kefir. At lunch and/or dinner add them to salads, soups, and stews or incorporate chia into tuna, chicken, and egg salad sandwiches.

**Hemp Seed/Oil/Milk:** Hemp seeds have been enjoyed for centuries by people both in China and on the European continent. The milk produced from these seeds is a great alternative to other milk for those who have lactose/nut or seed sensitivity. You'll find omega-3s in “hemp milk”, too.

**Walnuts/Oil:** Walnuts are a great snack; seven of them provide 180 calories and 2.5g of omega-3s. And, walnut oil can be added to salad dressing, or used for baking purposes.

**Algae:** Vegetarian omega-3 sources typically contain ALA, which must be converted by the body into EPA and DHA. Algae supplements, however, can deliver a vegetarian source of the actual EPA and DHA. Unfortunately, this form of omega-3 only comes in capsule form.

**Omega-3 enriched products:** Breads, waffles, margarine, etc. You can find a variety of omega-3 enriched products on the market these days, but as with any processed product, you want to the read the label about nutrition facts. Try to avoid products high in added sugar, salt, trans, or saturated fat.

**A note on fish oil supplements:** Some people might benefit from therapeutic doses of omega-3 fatty acids, and fish oil is a convenient choice. However, it is best to speak with your physician about taking fish oil, especially if you are on a blood thinner. Also, fish oil supplements are not FDA regulated and there are no guarantees on content levels and accuracy. When purchasing fish oils, make sure you are buying a quality product that has been tested for omega-3 content, and filtered for toxins.

**New products:** Krill oil and squid oil are among two of the new products on the market. Use the same precautions in their use as mentioned for fish oil supplements.

**Additional Resources:**

Penny M. Kris-Etherton, PhD, RD; Alison M. Hill, PhD: *n-3 Fatty Acids: Food or Supplements?*. J. American Dietetic Association. July 2008 vol. 108, #7, pp. 1125-1130


The Environmental Defense Fund List of Fish Oil Supplements
http://www.edf.org/page.cfm?tagID=16536&s_src=ggad&s_subsrc=fishoil&gclid=CKzG-5Ljv50CFQgtawodB3Hjpw

American Heart Association
http://www.americanheart.org/presenter.jhtml?identifier=4632
http://www.americanheart.org/presenter.jhtml?identifier=3013797

Algae

Chia Seed
http://www.drweil.com/drw/u/QAA365093/Chia-for-Health.html

Hemp
http://www.guardian.co.uk/environment/2006/dec/05/food