

Food Sources of Essential Fatty Acids

Humans are unable to synthesize the fatty acids linoleic acid and linolenic acid. Since these fats are required for health, they must be obtained through the foods we choose. Both of these fats are polyunsaturated, meaning they will be liquid rather than solid at room temperature. Linoleic acid belongs to the family of omega-6 fats and is readily available from most plant oils such as corn, safflower, soy, and sunflower oils. These fats are found abundantly in processed foods, baked goods, salad dressings, snack foods, and fried foods. Linolenic acid is an omega-3 fat found in deep-water fish and their oils, walnuts and walnut oil, flax seeds and flax seed oil, legumes (dried beans, peas, and lentils), purslane (a green vegetable), pumpkin seeds, some plant oils (e.g., canola oil, soybean oil), soy products, and some winter squashes.

Presently there is not a Dietary Reference Intake recommendation for omega-3 fats, but the National Institutes of Health has recommended people consume at least 2% of their total daily calories as omega-3 fats. If, for example, you ate 2000 calories per day, you should include 2 grams of omega-3 fats in your diet. There is not yet consensus among nutrition professionals as to how much is needed and many have suggested higher levels of omega-3 intake of at least 4 grams per day. Eating seafood and fish such as salmon, halibut, and tuna 2-3 times a week is a common way of increasing the intake of omega-3s.

Both omega-6 and omega-3 essential fatty acids are important building blocks that participate in the body's metabolism and building of membrane structures. In general, omega-6 fats tend to promote inflammation, constriction of the blood vessels, and formation of blood cell clots. Omega-3 fats have the opposite effect: they're anti-inflammatory, relax the blood vessels, and protect against blood cells aggregating together into clots.

Our hunter-gatherer ancestors are thought to have consumed equal amounts of omega-6s and omega-3s, but today's diet is quite unbalanced in that regard and has been estimated to contain 14-25 times as much omega-6 as omega-3 fat. In addition to increasing your omega-3 intake, reducing the amount of omega-6 fats you eat will also help to re-establish a healthier balance between omega-6 and omega-3 fats.

The following table provides omega-3 levels of some commonly eaten foods.

| <u>Food</u> | <u>Serving</u> | <u>Omega-3 fatty acids</u> |
|-------------------------------|----------------|----------------------------|
| Flax seeds | 1/4 cup | 7.0 g |
| Walnuts | 1/4 cup | 2.3 g |
| Chinook salmon, baked/broiled | 4.0 oz | 2.1 g |
| Scallops, baked/broiled | 4.0 oz | 1.1 g |
| Soybeans, cooked | 1 cup | 1.0 g |

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| Halibut, baked/broiled | 4.0 oz | 0.6 g |
| Shrimp, steamed, boiled | 4.0 oz | 0.4 g |
| Snapper, baked | 4.0 oz | 0.4 g |
| Tofu, raw | 4.0 oz | 0.4 g |
| Winter squash | 1 cup | 0.3 g |
| Tuna, yellowfin | 4.0 oz | 0.3 g |
| Cod, baked | 4.0 oz | 0.3 g |
| Kidney beans | 1 cup | 0.3 g |

Sources:

- U.S. Department of Agriculture, Agricultural Research Service. 2010. USDA National Nutrient Database for Standard Reference, Release 23. Nutrient Data Laboratory Home Page, available at <http://www.ars.usda.gov/ba/bhnrc/ndl>
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- He K, Liu K, Daviglius ML, Mayer-Davis E, Jenny NS, Jiang R, Ouyang P, Steffen LM, Siscovick D, Wu C, Barr RG, Tsai M, Burke GL. Intakes of long-chain n-3 polyunsaturated fatty acids and fish in relation to measurements of subclinical atherosclerosis. *Am J Clin Nutr.* 2008;88:1111-8.