

What I Need to Know About Omega-3 Fatty Acids

What are omega-3 fatty acids?

Omega-3 fatty acids include eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA), found in fish, and alpha-linolenic acid, found in soy, canola oil, flaxseed, and English walnuts.

For what conditions are omega-3 fatty acids effective?

There is good evidence that omega-3 fatty acids, particularly EPA and DHA, prevent heart disease. In people who already have heart disease, they help prevent death, heart attack, and stroke. They also reduce triglycerides. Omega-3 fatty acids might also help rheumatoid arthritis, high blood pressure, depression, bipolar disorder, menstrual pain, and certain kidney problems.

What is the best source of omega-3 fatty acids?

The best source of omega-3 fatty acids is fatty fish, like salmon. The American Heart Association (AHA) recommends that everyone eat at least two fatty fish meals (baked or broiled) weekly for cardiovascular health. People who have heart disease should try to eat fatty fish daily. Also add foods rich in alpha-linolenic acid (canola oil, soy, English walnuts, flaxseed) to your diet. But they are not good substitutes for fish because they do not provide enough EPA/DHA. Fish oil capsules are a convenient way to get your omega-3 fatty acids, especially if you need high doses. Fish oil capsules are sold over-the-counter or by prescription (*Lovaza* [formerly *Omacor*] in U.S.). Ask your healthcare provider if fish oil capsules are right for you.

Should I be concerned about mercury in fish?

Women who are pregnant or may become pregnant or are breastfeeding, and young children are at risk of mercury toxicity from certain fish. The EPA (U.S.) and Health Canada have specific recommendations for which fish these at-risk persons should avoid or limit. Fish low in mercury include shrimp, canned light tuna (not albacore), salmon, pollack, and catfish. Fish oil capsules are generally low in mercury and other pollutants. For more information, see <http://www.epa.gov/waterscience/fishadvice/advice.html> (U.S.) or <http://www.hc-sc.gc.ca/fn-an/securit/chem-chim/envIRON/mercUr/cons-adv-etud-eng.php> (Canada).

How do I choose a fish oil product?

Over-the-counter fish oil is considered a supplement, not a drug, so quality and content varies. Choose products with the "USP Verified Mark" on the label. These have been tested, and have acceptable levels of mercury, other heavy metals, PCBs, and dioxins. They are confirmed to contain what the label says they contain. The omega-3 content is the labeled amount of DHA plus EPA.

If taking fish oil to treat high triglycerides, ask your healthcare professional about *Lovaza* [formerly *Omacor*], an FDA-approved prescription fish oil product. It is expensive, but some health insurance plans may cover part of the cost. It is a concentrated form of fish oil, so fewer capsules are needed to get the same amount of fish oil provided in over-the-counter capsules.

Are there side effects or drug interactions with omega-3 fatty acids?

Fish oil can cause nausea, heartburn, or loose stool. It can have a fishy aftertaste. Some patients have found that refrigerating or freezing fish oil supplement capsules might help. (Prescription *Lovaza* should NOT be frozen.) Discard capsules with a very strong or spoiled taste. There is a small increased risk of bleeding or bruising when taking fish oil at doses greater than 3 grams daily. Check with your healthcare provider if you are taking aspirin, warfarin (*Coumadin*), or clopidogrel (*Plavix*).

Who should not take omega-3 fatty acid supplements?

High doses of alpha-linolenic acid may increase the risk of prostate cancer, so supplements should be avoided in men with prostate cancer or at risk of prostate cancer. If you are allergic to fish, get approval from your healthcare provider before taking fish oil capsules.

Choosing a Fish Oil Product

Background

Omega-3 fatty acids in the form of fish oil are popular supplements taken primarily for cardiovascular health. There is also a prescription fish oil supplement called *Lovaza* (formerly *Omacor*) indicated for treatment of hypertriglyceridemia. This article compares fish oil supplements and *Lovaza* in regard to purity, potency, dosing, tolerability, and cost. A patient handout on omega-3 fatty acids is also offered.

Potency

Each 1 gram *Lovaza* capsule contains approximately 840 mg of omega-3 fatty acids as 465 mg of EPA and 375 mg of DHA. Most fish oil supplements contain only 200 mg to 400 mg of EPA plus DHA per capsule.¹

Most fish oil supplements contain omega-3 fatty acids in triglyceride form, whereas *Lovaza*'s fatty acids are present as ethyl esters. This allows a greater concentration of EPA and DHA to be obtained during the manufacturing process.¹

Purity

Mercury and other pollutants can concentrate in fish. Methylmercury is water soluble, so fish oil is likely to contain little methylmercury. Also, the manufacturing process used to deodorize fish oil supplements seems to reduce levels of PCBs and other contaminants. Purity of fish oil supplements is generally good; however, contaminants have been reported in some brands. Products that are USP Verified have been tested, and found to have levels of mercury, other heavy metals, PCBs, and dioxins that are below acceptable safe limits.²

Fish oil supplements may contain small amounts of fish protein, and experts have suggested they be avoided in patients allergic to fish. *Lovaza* labeling advises caution in fish-allergic patients.²

Fish oil supplements may contain cholesterol and/or saturated fat in addition to omega-3 fatty acids. *Lovaza* contains only omega-3 fatty acids and a small amount of omega-6 fatty acids.¹

Dosing

The American Heart Association (AHA) recommends everyone eat fatty fish twice a week. For patients with heart disease (e.g., post-MI), the AHA recommends one gram daily of DHA plus EPA from fatty fish (preferred) or supplements with medical supervision. For high triglycerides, two to four grams of DHA plus EPA daily is recommended.² The recommended dose of *Lovaza* for lowering very high triglycerides is 4 grams once daily or 2 grams twice daily.⁵

Adverse Effects

Fish oil supplements can cause a fishy aftertaste or "fishy burp." Gastrointestinal adverse effects such as nausea occasionally occur. Gradually increasing the dose or bedtime administration seems to help some patients. Vitamin E is added to some products to prevent oxidation and spoilage. Tell patients to discard products with a strong fishy or rancid smell or taste. This may be an indication of spoilage or poor product quality.² Doses of fish oil greater than 3 grams per day can inhibit blood coagulation and potentially increase the risk of bleeding, but evidence of clinical harm is lacking.^{1,3}

Cost

Lovaza costs up to \$165/month. That's three to four times more than taking an equivalent dose of an OTC fish oil supplement. However, the patient's health insurance may cover at least part of the cost of *Lovaza*.

Commentary

For cardiovascular health, two servings of a variety of fish, preferably oily, should be

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consumed weekly [Evidence level C; consensus].⁴ Fish oil capsules are a good choice for patients needing relatively large doses for secondary prevention or hypertriglyceridemia. If affordable, FDA-approved *Lovaza* is the best option for patients with high triglycerides. Concerns about toxins are alleviated, and its concentrated formulation allows patients to get more omega-3 fatty acids in fewer capsules. To get the same amount of omega-3s as in four *Lovaza* capsules patients would need to take as many as 16 fish oil supplement capsules. The total amount of cholesterol, saturated fats, and pollutants in this number of supplement capsules might be clinically significant.

If a supplement is chosen, patients taking more than three grams of omega-3 fatty acids require medical supervision due to potential bleeding risk [Evidence level C; consensus].⁴ Monitoring is also necessary to ensure compliance and efficacy. In fact, the FDA's position is that supplement labeling should not recommend more than 2 g of EPA plus DHA daily, in part to discourage disease self-treatment.¹

Help patients choose a fish oil supplement with the desired amount of omega-3 fatty acids. Look for the amount of EPA plus DHA, not the total amount of fish oil. More concentrated formulations may increase compliance. Steer patients requiring large amounts of fish oil away from cod liver oil due to its relatively high vitamin A content.²

If purity is a concern, direct patients to fish oil supplements that are USP Verified. Find which fish oil supplements are USP Verified at www.naturaldatabase.com.

Users of this document are cautioned to use their own professional judgment and consult any other necessary or appropriate sources prior to making clinical judgments based on the content of this document. Our editors have researched the information with input

from experts, government agencies, and national organizations. Information and Internet links in this article were current as of the date of publication.

Levels of Evidence

In accordance with the trend towards Evidence-Based Medicine, we are citing the **LEVEL OF EVIDENCE** for the statements we publish.

Level	Definition
A	High-quality randomized controlled trial (RCT) High-quality meta-analysis (quantitative systematic review)
B	Nonrandomized clinical trial Nonquantitative systematic review Lower quality RCT Clinical cohort study Case-control study Historical control Epidemiologic study
C	Consensus Expert opinion
D	Anecdotal evidence In vitro or animal study

Adapted from Siwek J, et al. How to write an evidence-based clinical review article. *Am Fam Physician* 2002;65:251-8.

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References

- McKenney JM, Sica D. Role of prescription omega-3 fatty acids in the treatment of hypertriglyceridemia. *Pharmacotherapy* 2007;27:715-28.
- Omega-3 fatty acids: an update. *Pharmacist's Letter/Prescriber's Letter* 2007;23(8):230807.
- Jellin JM, Gregory PJ, et al. *Pharmacist's Letter/Prescriber's Letter Natural Medicines Comprehensive Database*. <http://www.naturaldatabase.com>. (Accessed June 9, 2008).
- Anon. Fish and omega-3 fatty acids. AHA recommendation. <http://www.americanheart.org/presenter.jhtml?identifier=4632>. (Accessed June 9, 2008).
- Product information for *Lovaza*. Reliant Pharmaceuticals, Inc. Liberty Corner, NJ 07938. August 2007.

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Evidence and Advice You Can Trust...



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