



A Healthy Heart, Brain, Eyes and Mood with Omega-3s[†]

What are Omega-3 Fatty Acids?

Omega-3 fatty acids are part of the polyunsaturated fats that exist under the larger umbrella of dietary fats.¹ Sometimes the term “fat” is discussed in a negative context, as in the case of trans or saturated fat. Long-chain polyunsaturated fats like omega-3 fatty acids are recognized as healthy fats that should be included in the diet. From a nutritional and overall health perspective, collective research to date has demonstrated key roles in the body for two omega-3 fatty acids: eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA).

EPA and DHA are long-chain omega-3 polyunsaturated fatty acids that are mainly supplied to the diet from marine-based sources (including algae), but most abundant in fatty fish such as salmon, tuna and sardines; these fish incorporate EPA and DHA into their fatty tissue by consuming algae. Alpha-linolenic acid (ALA) is an omega-3 polyunsaturated fatty acid that can be found in certain plant and plant oil sources and are found in high amounts in chia seeds, flaxseeds and flaxseed oil and walnuts. ALA is considered an “essential” fatty acid because it cannot be synthesized in the body and must be obtained through the diet.¹ While ALA can be converted into EPA and DHA, this conversion process is very inefficient, therefore ALA should not be considered an omega-3 substitute to EPA and DHA consumption. Regularly consuming foods rich in EPA and DHA like seafood and/or taking an omega-3 supplement can help fill nutrient gaps.²

Why Do I Need Omega-3 Fatty Acids?

Omega-3s are incorporated into all cell membranes in the body, providing support for their structural integrity and fluidity, which is necessary for effective cellular function and communication. These healthy fats are lacking in the average American diet.² Most people do not consume the recommended 2 servings of seafood per week and are not meeting the dietary recommendations for EPA and DHA. National survey data shows that over 2/3 (68%) of US adults, and 95% of US children do not consume enough EPA and DHA in their daily diet to meet the Dietary Guidelines for Americans recommendations.³ Plant-based sources of ALA are found in foods like flaxseeds, chia seeds, and walnuts, and can help contribute to overall omega-3 levels.⁴ Omega-6 fatty acids — found in soybean, canola, safflower, corn, and other vegetable oils commonly used in cooking—are consumed in abundance in Western diets, and most Americans typically consume too much omega-6s from vegetable oils and processed foods compared to omega-3s, with an unbalanced ratio of 20:1.⁵ An ideal omega-6:omega-3 ratio for optimal health is 1:1, or a maximum ratio of 5:1, as a balanced ratio will provide anti-inflammatory benefits.^{6,7}

What are the Benefits of Omega-3 Fatty Acids?

The large body of scientific research on the omega-3s EPA and DHA provide strong evidence for cardiovascular health benefits. A growing body of research also demonstrates the important roles of EPA and DHA in supporting brain, eye, and mood health. According to the most comprehensive review to date of EPA and DHA and their relationship to coronary heart disease – EPA and DHA intake may reduce

the risk of coronary heart disease, especially for those who are considered to be in a “higher risk population” such as those with higher blood triglyceride levels or low HDL cholesterol.⁸ After reviewing the scientific evidence on EPA and DHA and heart health, the FDA issued a Qualified Health Claim, stating “supportive but not conclusive research shows that consumption of EPA and DHA omega-3 fatty acids may reduce the risk of coronary heart disease.”⁹

Ongoing research has been investigating the benefits of EPA and DHA in eye and brain function and mood regulation. As the most abundant fatty acid in your brain and eyes, DHA helps neurons transmit messages and plays an important role in retinal function and vision in different lighting conditions. Adequate levels of EPA and DHA are needed in your brain to help with mood regulation.

The first 1,000 days - from pregnancy to age two - provide a critical time of brain growth and development. During pregnancy, DHA levels peak in the third trimester, when baby’s brain and eyes rapidly develop. After birth and through infancy, DHA remains important to baby’s brain and eye health development.¹⁰

How Much Omega-3 Fatty Acids Do I Need?

Currently, a National Academy of Medicine (NAM) Dietary Reference Intake (DRI) exists for ALA (1.6 grams/day for males; 1.1 grams per day for females);¹ and the development of DRIs for EPA and DHA is currently under discussion. To provide guidance for consumers and healthcare practitioners, experts have spent time vetting decades of fish and fish oil research in order to create intake guidelines for EPA and DHA. As a result, national and international guidelines have converged on the following evidence-based recommendations:¹¹⁻¹⁷

POPULATION	EPA & DHA RECOMMENDATIONS
General adult population for overall health	250-500 mg/day EPA and DHA
Adults with hypertension	800 mg/day EPA and DHA
Adults with history and/or risk of coronary heart disease	1000 mg/day EPA and DHA
Adults with high triglyceride levels	2000-4000 mg/day EPA and DHA
Pregnant and breastfeeding women	At least 200 mg/day DHA
Infants and children up to 2 years old	100 mg/day DHA
Children and adolescents 2-18 years old	250 mg/day DHA
HEALTH BENEFIT	
Heart health support	500 mg/day EPA and DHA
Brain health and function	250 mg/day DHA
Mood health support	1000 mg/day EPA OR 1000-2000 mg EPA and DHA/day, with at least 1000 mg/day EPA
Eye health and function	250 mg/day DHA

These recommendations are made for EPA and DHA specifically, therefore it is important to read the Supplement Facts panel to ensure you are receiving the appropriate amount of omega-3s for your individual needs and to fill nutrient gaps.

Omega-3 Supplements: Know the Differences

FISH OIL

Fish oil is found in all fish and seafood but is most abundant in the tissues of oily fish like anchovies, halibut, mackerel, salmon and sardines, and is a great source of EPA and DHA. Fish oil formulas are available in a variety of strengths and sizes. Anchovies, sardines and mackerel are among the most common sources used for fish oil supplements. Reputable manufacturers ensure quality and purity through a rigorous purification process to significantly reduce the levels of mercury and other contaminants, which may be present naturally in fish and other seafood.

KRILL OIL

Krill oil, extracted from the small crustacean, is also a source of EPA and DHA, although at significantly lower levels than fish oil. At best, on a gram per gram basis, krill oil will have 67% the content of EPA and DHA compared to fish oil due to it being in the phospholipid, rather than the triglyceride form.^{18,19} This makes achieving any of the recommendations listed above very challenging from krill oil alone. Additionally, krill oil contains a small amount of the carotenoid astaxanthin and is recognized for having no fishy aftertaste or odor.

ALGAL OIL

Algae is the original marine source for EPA and DHA, which provides a food source for fish and other seafood to naturally contain EPA and DHA through their diet. Algae is known for having no fishy aftertaste or odor. Unlike other sources of DHA and EPA, algal oil is a plant-based source of omega-3s, making it a wonderful option for vegetarians, vegans and those who avoid fish in their diet.

FLAXSEED OIL

Flaxseed oil is a plant-based source of the omega-3 fatty acid ALA, and is especially convenient for people who avoid fish and shellfish in their regular diet. However, it is not a source of the omega-3s EPA and DHA.

TRIGLYCERIDE vs. ETHYL ESTER FISH OIL

Fish oil supplements are available in either the triglyceride or the ethyl ester form, depending on the molecular structure of the oil. Fish oil in the triglyceride form is the form found in nature and is composed of three fatty acids bonded to a glycerol backbone. Ethyl ester fish oil has the glycerol backbone removed to help concentrate the EPA and DHA. All fish oil products are better absorbed with a meal that includes adequate fat content.

Omega-3 Safety

Due to the slight anti-platelet effect of omega-3s, it is suggested that those taking anticoagulants or antiplatelets and omega-3 supplements should be monitored, however clinical trials report no increased risk of bleeding with omega-3s in combination with these medications.¹⁷ The European Food Safety Authority states, "long-term supplemental intakes of EPA and DHA combined up to 5 g/day do not increase the risk of bleeding episodes or complications even in subjects at high risk of bleeding.¹⁶ Experts recommend that those with a risk of bleeding should stop taking their omega-3 supplement one week prior to surgery.

Should I Add a Dietary Supplement to My Daily Routine?

It's important for patients to communicate with their healthcare professionals about any changes to their daily regimen including dietary supplements. Work together to understand personal nutrition needs as well as current dietary patterns to identify nutrient gaps. For those who are still unable to meet their nutrient needs from diet alone, it's important to discuss the need to fill any potential nutrient gaps with dietary supplements, as a safe and effective way to ensure adequate intake of all essential nutrients.

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References

1. Food and Nutrition Board. Washington, D.C. Nat. Acad. Press;2002:422-541.
2. Papanikolaou Y, et al. Nutr J. 2014;13(31):1-6.
3. Murphy RA, et al. BMJ Open, May 2021.
4. Singh KK, et al. Crit. Rev. Food Sci. Nutr. 2011;51:210-222.
5. DiNicolantonio J, et al. Mo Med. 2020; 117 (6):539-542.
6. Mariamenatu A, et al. J Lipids. 2021;8848161.
7. DiNicolantonio J, et al. Open Heart. 2018;5(2):e000946.
8. Bernasconi A, et al. Mayo Clin Proc. 2021;96(2):304-313.
9. US Food and Drug Administration. Summary of Qualified Health Claims.
10. Koletzko B, et al. J Perinatal Med. 2008;36(1):5-14.

***Based on U.S. News & World Report - Pharmacy Times Survey, 2021*

†These statements have not been evaluated by the Food and Drug Administration. These products are not intended to diagnose, treat, cure, or prevent any disease.

11. Harris WS, et al. J Nutr. 2009;139:804S-819S.
12. USDA. Dietary Guidelines for Americans 2020-2025.
13. Vannice G, et al. J Acad Nutr Diet. 2014(114):136-153.
14. Siscovick DS, et al. Circulation. 2017(135):e867-e884.
15. March of Dimes. Vitamins and Other Nutrients During Pregnancy.
16. EFSA Panel on Dietetic Products. Nutrition and Allergies.
17. Skulas-Ray AC, et al. Circulation. 2019;(140)12:e673-e691.
18. Lee JH, et al. Nat Rev Cardiol. 2009;6:753-758.
19. Maki KC, et al. Nutr Res. 2009;29:609-615.

