

Vegetarian Nutrition
a dietetic practice group of the
Academy of Nutrition and Dietetics
Experts in Plant-Based Nutrition

RDN Resources for Consumers:

Omega-3 Fatty Acids and Vegetarian Diets

Omega fatty acids are commonly discussed within health and nutrition, but what exactly are omegas and how do they impact your health?

Omega Fatty Acids Overview
Omega fatty acids are a type of fat found in the diet or supplements. They are classified into three major categories based on their chemical structure: Omega-3, omega-6, and omega-9.

Omega-3 and omega-6 fatty acids are polyunsaturated fatty acids (PUFAs), and omega-9 fatty acids are monounsaturated fatty acids (MUFAs). The focus of this resource is on omega-3 fatty acids in vegetarian and vegan diet patterns.

When it comes to fat, omega-3 fatty acids are particularly important for health and well-being. Omega-3 fatty acids play an important role in heart health, growth and development, and immune system function. Severe omega-3 fatty acids deficiencies are uncommon, but can lead to dry, scaly skin.

Types of Omega-3 Fatty Acids
There are 3 commonly discussed omega-3 fatty acids found in food; alpha-linolenic acid (ALA), eicosapentaenoic acid (EPA), and docosahexaenoic acid (DHA).

ALA
ALA cannot be created by the body, and must be consumed through food or supplements. ALA comes from plant-based foods and oils, such as flaxseed, walnuts, chia seeds, hemp seeds, soy, and canola. Recommendations and sources for ALA can be found in the tables below.

EPA and DHA
EPA and DHA are primarily found in seafood, such as salmon, sardines, trout, and herring. However (unlike ALA) EPA and DHA can be created within the body using ALA. Research suggests that higher levels of EPA and DHA may create a less inflammatory environment inside of our bodies.

Some fortified foods may contain EPA or DHA, such as certain brands of eggs, yogurt, juice, milk, soymilk, and infant formulas. Supplemental DHA can be found in vegetarian-friendly algae oil capsules.

ALA Sources and Recommendations
The only omega-3 with established intake recommendations is ALA.

Recommended intakes of ALA by life stage.

Life Stage	Recommended Amount of ALA
Birth to 12 months*	0.5 g
Children 1–3 years	0.7 g
Children 4–8 years	0.9 g
Boys 9–13 years	1.2 g
Girls 9–13 years	1.0 g
Teen boys 14–18 years	1.6 g
Teen girls 14–18 years	1.1 g
Men	1.6 g
Women	1.1 g
Pregnant teens and women	1.4 g
Breastfeeding teens and women	1.3 g

**As total omega-3s. All other values are for ALA alone*

Vegetarian and Vegan Sources of ALA

Food	Grams / Serving
Flaxseed oil, 1 tbsp	7.26
Chia seeds, 1 ounce	5.06
English walnuts, 1 ounce	2.57
Flaxseed, whole, 1 tbsp	2.35
Canola oil, 1 tbsp	1.28
Soybean oil, 1 tbsp	0.92
Black walnuts, 1 ounce	0.76
Mayonnaise, 1 tbsp	0.74
Edamame, frozen, prepared, ½ cup	0.28
Refried beans, canned, vegetarian, ½ cup	0.21
Kidney beans, canned ½ cup	0.10
Baked beans, canned, vegetarian, ½ cup	0.07
Bread, whole wheat, 1 slice	0.04
Milk, low-fat (1%), 1 cup	0.01

Omega 3s and Disease

Dietary patterns rich in omega-3 fatty acids, such as the Mediterranean diet, have been found to have heart-protective benefits While the evidence on the efficacy of omega-3 supplementation is conflicting, some studies have found that. EPA and DHA can aid in the prevention of certain disease states, such as heart disease and diabetes prevention. However, studies indicate that EPA and DHA supplementation is ineffective in the management of Crohn's disease, bipolar disorder, or Alzheimer's disease.

Omega-3 status of Vegetarians and Vegans

Compared to meat eaters, vegetarians and vegans tend to have higher ALA levels in the body. Vegetarian

and vegans tend to have lower levels of EPA and DHA in their bodies compared to meat eaters. This is likely because meat eaters consume more EPA and DHA through seafood.

Omega-3 Recommendations for Vegetarians and Vegans

The Academy of Nutrition and Dietetics' 2016 position paper on vegetarian diets states that omega-3 needs of healthy individuals can be met by consuming ALA alone, because human bodies can make enough EPA and DHA from the ALA.

For extra insurance, vegetarians and vegans may increase ALA intake by 2 grams per day (ex: 1½ teaspoons of flaxseed oil). Another option is to supplement with a vegetarian-friendly DHA supplement.

Supplements

Algae-based DHA supplements have been approved by the FDA for safety, and studies show they can help increase levels of DHA in the body.

Sustainability

Overfishing depletes fresh and ocean water fish, which negatively impacts ocean ecosystems and threatens food security for lower-income populations who rely on seafood. Vegetarian sources of EPA and DHA, such as marine microalgae production, may provide a sustainable solution for ensuring adequate intakes of omega-3 fatty acids with a lower environmental impact.

Conclusion

Omega-3 fatty acids, in particular ALA, play an important role in health and wellbeing. ALA can easily be obtained by vegetarians and vegans through plant-based foods, nut butters, and oils. EPA and DHA are more difficult to obtain via vegetarian and vegan eating patterns. If seafoods are not part of your diet, you can increase levels of EPA or DHA by consuming more ALA or taking a microalgae-based supplement. For more information, consult with a registered dietitian nutritionist.

Vegetarian Nutrition
a dietetic practice group of the
Academy of Nutrition and Dietetics
Experts in Plant-Based Nutrition

A registered dietitian nutritionist can help you develop a healthy vegetarian or vegan eating plan that meets your needs. To find an RDN in your area, visit https://eatright.org/find-a-nutrition-expert. ©2022 by VN DPG. RD Resources are a project of the Vegetarian Nutrition Dietetic Practice Group. More topics available at **www.VNDPG.org.**

Written by Christopher Vogliano, PhD, MS, RD
Expires May 31, 2026.