

Extra Strength Omega-3 Enteric Coated Softgels



Product Summary:

Omega-3 fatty acids are a group of healthy fatty acids found in fish and certain plants that provide important health benefits. These fatty acids cannot be manufactured in the body and must be consumed in our diets, which is why they are called “essential” fatty acids. Supplementation with omega-3 EPA/DHA helps maintain cardiovascular health, support cognitive health and brain function, and plays a role in normal growth and development. The health benefits of omega-3 fatty acids are plentiful for everyone from infants to seniors!

Properties/Uses:

The claim as approved by *Natural Health Products Directorate* (NHPD): Helps support cognitive health and brain function and maintain cardiovascular health. Source of omega-3 fatty acids EPA and DHA for the maintenance of good health.



CARDIOVASCULAR



Pharmacology:

Omega-3 fatty acids have long been associated with healthy brain function and cardiovascular health, including healthy blood circulation and healthy triglyceride levels. The principal reason people supplement with fish oil is to increase the intake of ready made omega-3 EPA (eicosapentaenoic acid) and DHA (docosahexaenoic acid), bypassing their natural endogenous production from alpha-linolenic acid. EPA and DHA are the most physiologically important members of the omega-3 family of fatty acids.¹ These fatty acids seem to have different physiologic effects than their precursor alpha-linolenic acid, a plant-derived omega-3 fatty acid.

An important reason to supplement with fish oil rather than flaxseed oil is to ensure that one obtains optimal amounts of omega-3 EPA and DHA. While these two omega-3 fatty acids can be made in the body from alpha-linolenic acid, it can be challenging in some people. Furthermore, omega-6 oils strongly dominate North American diets. This product is designed to provide omega-3 EPA and DHA to adults and children who are 6 years and older.

Dominance of omega-6 fatty acids over omega-3 fatty acids in North American diets is recognized as a major contributing factor to leading health problems.^{2,3} Three cascade fatty acids, dihomo-gamma-linolenic acid, arachidonic acid (AA), and eicosapentaenoic acid (EPA), give rise to three series of regulatory eicosanoids. The flow chart (see Figure 1) illustrates how these are derived through the actions of cyclooxygenase and lipoxygenase.

The optimal dietary ratio between the essential fatty acids is thought to be 2:1 ranging to 4:1, in favour of omega-6.^{3,4} Omega-6 linoleic acid is supplied in all of the common polyunsaturated and monounsaturated oils consumed in North America, while omega-3 linolenic acid is supplied only in soy, canola, and flaxseed oils, as well as in walnuts. Unfortunately, the dietary ratio for most North Americans is estimated to be closer to 14 to 20 parts of omega-6 to 1 part of omega-3.^{2,3}

Any accumulative dietary imbalance in the optimal ratio of the essential fatty acids eventually translates into eicosanoid imbalance as dysregulation that causes or exacerbates pathophysiological processes. When omega-6 is consistently consumed in excess of the optimal ratio with omega-3, then so called “bad” Series 2 prostaglandins, leukotrienes, and thromboxanes are over expressed, leading to health problems. Prime examples of Series 2 eicosanoid over expression are pro-thrombotic states and pro-inflammatory states. Leading causes of death and life-altering disabilities in North America relate to coronary thrombosis, cerebral thrombosis, and pulmonary embolism, and a growing body of evidence implicates generalized inflammation as a major contributor to health problems including heart attack risk and Alzheimer’s Disease.^{5,6}





Getting ready-made EPA and DHA from fish oil ensures they will be well represented in cell membrane phospholipids, and that EPA will sufficiently balance the presence of arachidonic acid (AA). Membrane EPA competes with arachidonic acid for access to cyclooxygenase and lipoxygenase. By overtly increasing EPA in membranes through fish oil supplementation, a competitive inhibition increases the probability that the Series 3 eicosanoids derived from EPA will dominate the Series 2 eicosanoids, lowering the risk for inappropriate thrombus and inflammatory mayhem, or any other excessive expression of Series 2 eicosanoids associated with “bad” outcomes. Remember that bad is relative because blood clotting is good sometimes.

Some people in general seem unable to begin with dietary linolenic acid and arrive at sufficient EPA and DHA. These same people likely will have problems in converting linoleic acid to arachidonic acid, which is also important in phospholipid composition on the omega-6 side. This presents a possible lifetime struggle to obtain adequate EPA, DHA, and AA, and the health enhancement tied to these fatty acids. This situation in particular may characterize the older person who suffers from age-related metabolic decline. The problem arises from a compromised ability to form the first metabolic derivatives past the linoleic acid and linolenic acid starting points. For these people, fish oil will make a greater difference than just supplementing with flaxseed oil as an omega-3 source. Similarly, using omega-6 Evening Primrose oil as a source of gamma-linolenic acid may give better results than just increasing more linoleic acid sources.

Where does DHA fit in?

DHA is very important to the brain, retina, testes, and adrenal glands for facilitating optimal functioning. Both EPA and DHA are important in brain tissue and function exclusively via cell membranes, in which they are anchored by phospholipid molecules. DHA is proven essential to pre- and postnatal brain development, whereas EPA seems more influential on behavior and mood.⁷

Inadequate DHA in the brain is thought to be an important contributing factor in many neurological functional problems. Intriguing brain research has drawn a possible connection between DHA and arachidonic acid (AA) and some of the childhood learning and behavioural problems including *dyslexia*, *attention deficit disorder* (ADD), and *attention deficit hyperactivity disorder* (ADHD). Parents and teachers are challenged to provide effective learning and to shape appropriate behaviour. This brain research is pointing to new nutritional ways to address these difficult learning and behavioural problems with neurologically active DHA and omega-6 gamma-linolenic acid (GLA) and arachidonic acid (AA).¹



Researchers have found that the fatty acids DHA and AA are highly concentrated in the synaptic membranes, the juncture where neurons exchange and process information, and where learning and behaviour are forged.⁸ Researcher Laura J. Stevens, PhD, and her fellow scientists at Purdue University have shown that DHA levels in the blood of 53 boys suffering from ADHD was significantly lower than DHA levels found in 43 matched boys without ADHD. This has been interpreted to mean that ADHD sufferers may not make DHA well enough to facilitate optimal construction of synaptic membranes, thereby impairing the brain's control over responses to environmental stimuli, leading to hyperactivity, inattentive, and impulsive behaviour. The researchers concluded that supplementing with DHA and AA may be useful in treating or managing ADHD. However, there is also the possibility that a genetic defect exists in the synthesis of incorporation enzymes; so cascade-derived DHA cannot be adequately incorporated. Increasing the available amount of DHA may facilitate better incorporation.

British researcher Jacqueline Stordy, PhD, found that supplying DHA to young adults with dyslexia improved learning disabilities.⁹ Parents can use brain-active DHA, and AA from food sources (such as egg yolks), to address learning and behavioural problem.

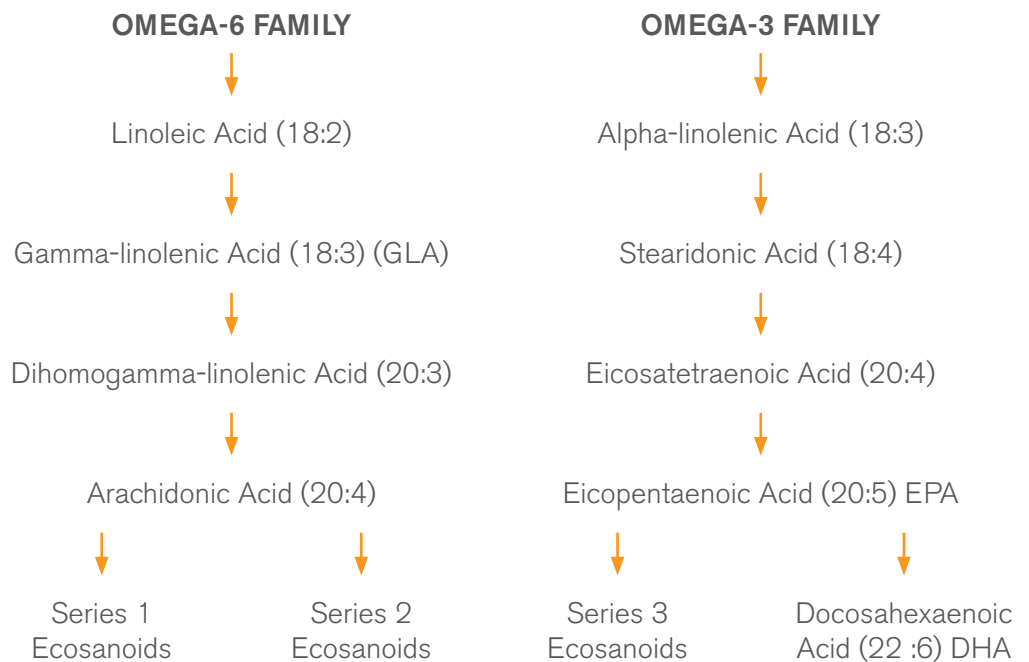


Figure 1: Omega-3 and Omega-6 Family Flow Chart



Manufactured product information:

Manufacturer:

WN Pharmaceuticals® Ltd.

Size/UPC:

50's.....7 77747 10303 4

NPN:

80019234

Expiry Date:

36 months from date of manufacture

Active Ingredients:

Each softgel contains :

Fish Oil Concentrate (Anchovy, Sardine and/or Mackerel)	1407 mg
Omega-3 Fatty Acids	900 mg
EPA (Eicosapentaenoic Acid).....	600 mg
DHA (Docosahexaenoic Acid)	300 mg

Non-Medicinal Ingredients (in descending order):

Softgel capsule (gelatin, glycerin, purified water), enteric coating (purified water, ethylcellulose, medium chain triglycerides, oleic acid, sodium alginate, stearic acid), natural tocopherols

Appearance:

Clear yellowish oil in an oblong opaque off white enteric coated soft gelatin shell.

Packaging:

300 cc white round bottle with safety seal under a 45 mm white induction sealed cap with vented interior seal and a label applied to the bottle. Lot number and expiry date are printed on the label applied to the exterior of the bottle.

Storage:

Store in tight, light resistant containers in a cool, dry place.





Dose:

As per the NHPD Monograph for fish oils, the daily dose of combined EPA and DHA for children 1-8 years old is 100 – 1500 mg; for adolescents 9-13 years old is 100 – 2000 mg; for adolescents 14-18 years old is 100 – 2500 mg; and for adults (>18 yrs) is 100 – 3000 mg.¹⁰ Fish oils are *Generally Recognized As Safe* (GRAS) in the United-States.¹¹

This dosage is a good source of omega-3 fatty acids and helps support cognitive health and/or brain function.¹⁰

Directions:

(Adults): 1 softgel daily or as recommended by a physician.

Caution:

The caution as approved by *Natural Health Products Directorate* (NHPD): KEEP OUT OF THE REACH OF CHILDREN. STORE AT ROOM TEMPERATURE IN A DARK, DRY PLACE. DO NOT USE IF SEAL UNDER CAP IS BROKEN OR MISSING.

Deficiency Symptoms:

It is recognized that the human body requires a large variety of nutritional substances necessary for optimal growth and development. Among these crucial elements, omega-3 fatty acids are termed 'essential' because they are necessary for good health. Since the human body cannot make them on its own, omega-3 essential fatty acids must be supplied in the diet.

A deficiency in omega-3 can lead to a host of health issues including cardiac and circulatory disorders, disorders of the skin (eczema), disorders of the kidneys and liver, with various inflammatory problems, arthritis, weight disorder and failure of the immune system.

The majority of people today consume too much trans fat (fried foods and hydrogenated fats) and omega-6 fatty acids (vegetable oils), and not enough omega-3. It is therefore important to establish the proper ratio of fats in one's diet with fish, along with supplements and functional foods containing omega-3 fatty acids.





Drug Interactions/Contraindications:

Consult a physician prior to use if you are pregnant or breastfeeding.

Warfarin (Coumadin): Fish oil (EPA) can increase the prothrombin time (PT) in certain people on warfarin. However, Bender et al found that fish oil supplementation in doses of 3-6 grams per day does not seem to create a statistically significant affect on the anticoagulation status of patients receiving chronic warfarin.¹²

Anticoagulant/antiplatelet drugs: Fish oils may increase the risk of bleeding. Monitor patients.

Antihypertensive drugs: Fish oils can lower blood pressure and might have additive effects in patients taking antihypertensive drugs.

Blood thinners: EPA in a high dose range may present an additive effect with other natural products known to be blood thinners. Other common mild natural blood thinners include garlic, MSM, grape seed extract, cayenne, ginkgo biloba, and perhaps vitamin E >400 IUs.


Diabetes: Fish oil at low doses does not affect blood glucose levels. In doses greater than 3 grams per day, however, it can increase blood glucose levels.¹¹

Surgery: Ocean fish oils may predispose a person to post-surgical bleeding problems. Supplementation of fish oil should be discontinued for at least one week before surgery.

Toxicity/Adverse Reactions:

Ocean fish and fish oils have been consumed in significant quantities worldwide for centuries without being associated adverse effects. Orally, fish oils are generally well tolerated at doses of 3 grams or less per day. Fish oils sometimes have a fishy taste and can cause belching, halitosis, heartburn and gastrointestinal upset. High doses can cause nausea and loose stools. Some gastrointestinal side effects can be minimized if fish oils are taken with meals and if doses are started low and gradually increased.¹¹

The food oils contained in this product are extremely safe and adverse side effects are rarely associated with them. Allergies are known to occur with some food oils.





Allergen Content/Ingredient Sensitivity:

NO	YES
Artificial Colors	Fish
Artificial Flavors	Sulphites (<10 ppm)
Artificial Sweeteners	
Corn Products	
Egg Products	
Gluten	
Hydrolyzed Plant Protein	
Lecithin	
Milk Products	
Peanuts	
Preservatives	
Sesame Products	
Shellfish	
Soy Products	
Starch/Modified Starch	
Tartrazine	
Tree Nuts	
Wheat Products	
Yeast	

NOT ACCEPTABLE FOR THE FOLLOWING DIETARY RESTRICTIONS:

Free of animal products

Kosher





References:

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4. Jones, Peter J.H., Stanley, Kubow. "Lipids, sterols, and Their Metabolites" in *Modern Nutrition in Health and Disease*, Maurice E. Shils et al, editors, Ninth edition, Lippincott Williams & Wilkins, New York, 1999.
5. Nilsson L, et al. The essential role of inflammation and induced gene expression in the pathogenic pathway of Alzheimer's disease. *Front Biosci*. 1998 Apr 16; 3:d436-446.
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8. Stevens LJ, et al. Essential fatty acid metabolism in boys with attention-deficit hyperactivity disorder. *Amer J Clin Nutr*. 1995; 62(2): 761-768.
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