

ORTHOMEGA® SELECT EPA



CLINICAL APPLICATIONS

- *Powerful Omega-3 Concentrate – 22:1 EPA to DHA Ratio*
- *High-Intensity Support For Establishing a Positive Mental Outlook*
- *Targeted Support for Joint Discomfort and Musculoskeletal Integrity*
- *Support for Cardiovascular Health and Balanced Blood Sugar levels*

CARDIOVASCULAR HEALTH

Orthomega® Select EPA is a high-concentration eicosapentaenoic acid (EPA) fish oil designed for those needing intensive nutritional support of this essential fat. Research shows that EPA promotes a positive mental outlook and has a significant calming effect on the brain. In addition, EPA has been shown to improve joint mobility and support cardiovascular health. Orthomega® Select EPA is sourced from off the Chilean coast, where cold, fresh waters provide the cleanest, most sustainable source of fish in the world. Each soft gel delivers 660 mg EPA in the natural triglyceride form for superior absorption. This high-concentration EPA fish oil is enzymatically purified, vacuum-distilled, and independently tested to ensure heavy metals, pesticides and polychlorinated biphenyls (PCBs) are removed to undetectable levels.

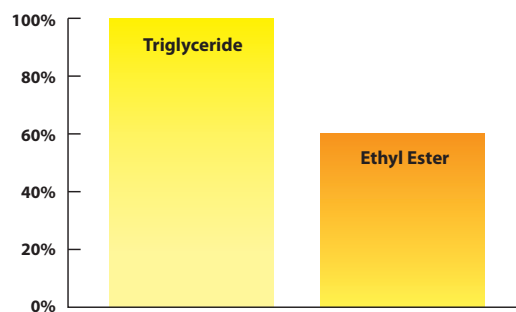
Overview

While EPA/DHA combination formulas remain the backbone of any fish oil regimen, as research on fish oil continues to accumulate, new evidence has emerged supporting the value of unique formulations of high-intensity DHA for more targeted uses. Fatty acids in the n-3 family are considered essential to humans because our bodies are unable to make them; in humans, the retro-conversion between ingested DHA to plasma EPA is higher than the conversion of EPA to DHA, making the specific supplementation of DHA important for those with impaired conversion.¹ Extensive studies have shown that DHA from fish oil plays a special role in cardiovascular health, specifically important for maintaining healthy blood pressure and supporting optimum lipid levels. DHA also boosts cognitive health and is an essential part of the structural integrity of the central nervous system making it a key component of neurological wellness. With over 10,000 published studies on fish oil in the last three decades, DHA from fish oil is among the most researched natural ingredients available and has a long history of safety and efficacy.

Fish Oil Delivery – Triglycerides vs. Ethyl Esters[†]

While the amount of EPA and DHA provided in a fish oil product is important for efficacy, the type of fish oil delivered is another significant factor in defining fish oil effectiveness. The human body is accustomed to digesting and absorbing EPA and DHA in the natural triglyceride form. Even though triglyceride-based fish oils are the preferred form for superior fish oil absorption, due to cost, the vast majority of fish oil products available on the market are packaged in semi-synthetic ethyl ester form. While less expensive, their unusual structure is resistant to the digestive enzymes that enable fat breakdown. In a study comparing EPA and DHA digestion in both the natural triglyceride and ethyl ester form, five common digestive lipase enzymes were shown to more easily digest fish oil in the natural triglyceride form as compared to the ethyl ester substrate.² A review of the existing literature has shown that fish oil provided in the natural triglyceride form is more efficiently digested and is 70% more absorbable than the ethyl ester form.³

Relative % Bioavailability of Triglyceride Compared to Regular Ethyl Ester



Triglyceride form has a natural glycerol backbone offering up to 70% more absorption than ethyl ester.

[†] These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.

Omega-3 Depletion†

An accumulating body of research shows that the typical modern diet does not provide a sufficient amount of omega-3s for optimal health and insufficient conversion within the body of alpha linolenic acid (ALA) to the active EPA and DHA may reduce the amount available for use in organs and tissues. Symptoms of omega-3 deficiency are common and often overlooked. These may include dry, itchy or flaky skin, poor sleep quality, poor circulation, eye discomfort and mood imbalance.² Low levels of EPA have been linked with mood imbalance, cognitive impairment and neuropathy.³

Mood Balance†

Long-chain n-3 fatty acids such as EPA are important components of membranes within neurological organs and tissues. They affect membrane fluidity and influence synaptic function and possibly serotonin and dopamine metabolism.^{4,5} In several studies, fish consumption has been directly linked to decreased risk of low mood, especially in women,^{6,7} and several clinical trials have used n-3 fatty acids to promote a positive mental outlook.⁸ Studies to date have shown 1 g of EPA was shown to improve low mood scores in patients⁹ and among a similar population, 2 g/day of a comparable preparation had highly significant improvement in mood scores.¹⁰ Previous reports suggest there is a link between low EPA levels and the most extreme signs of a negative mental outlook.¹¹ Additional evidence indicates that supplementation with long-chain n-3 polyunsaturated fatty acids (PUFAs) could be beneficial in the treatment of some individuals with irritability and aggressive tendencies.¹² Another double-blind, randomized, trial found patients who received EPA for three months showed an increase in sense of calmness while this was not seen in patients who received placebos. Calmness scores remained significantly higher in the EPA group for three months after supplement discontinuation.¹³

Joint Discomfort and Inflammatory Balance†

EPA is capable of forming eicosanoids, which function to counteract the activity of eicosanoids derived from arachidonic acid,¹⁴ a mechanism known to establish a healthy inflammatory balance.^{15,16} Numerous studies point to the key role of EPA to improve joint discomfort and to promote musculoskeletal strength. EPA has also been found to safely support neck and back discomfort.¹⁷

Cardiovascular Health and Blood Sugar Metabolism†

Several large, randomized clinical trials have proven the benefits of EPA in cardiovascular health. EPA has been found to diminish oxidative stress and promote cardiomyocyte strength¹⁸ and an eight-week long usage of EPA resulted in a significant percentage reduction of C-reactive protein levels.¹⁹ EPA has also been shown to aid in healthy blood sugar balance.

Supplementation with EPA has been shown to support blood sugar balance and related markers.²⁰ In another study, among the 65 men who received 500 mg EPA and/or 200 mg vitamin C and/or placebo, for eight weeks of those taking EPA and vitamin C supplementation showed improved markers of cardiovascular function.

Directions

1 soft gel capsule per day or as recommended by your health care professional.

Does not contain

Gluten, corn, yeast, artificial colors and flavors.

Cautions

If you are pregnant or nursing, consult your physician before taking this product.

Supplement Facts ^{v2}		
Serving Size 1 Soft Gel Capsule		
Servings Per Container 60		
1 soft gel capsule contains	Amount Per Serving	% Daily Value
Calories	15	
Calories from fat	10	
Total fat	1.5 g	2%*
Cholesterol	5 mg	2%
EPA (Eicosapentaenoic Acid)	660 mg	**
DHA (Docosahexaenoic Acid)	60 mg	**

* Percent Daily Values are based on a 2,000 calorie diet.
** Daily Value not established

ID# 448060 60 Soft Gel Capsules

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

References

1. Connor WE. Importance of n-3 fatty acids in health and disease. *Am J Clin Nutr.* 2000 Jan;71(1 Suppl):171S-5S.
2. University of Maryland (UMM).
3. <http://lpi.oregonstate.edu/infocenter/othernuts/omega3fa/>
4. Hibbeln JR, Linnoila M et al. Essential fatty acids predict metabolites of serotonin and dopamine in cerebrospinal fluid among healthy control subjects, and early- and late onset alcoholics. *Biol Psychiatry.* 1998; 44(4):235-42.
5. Hirashima F, Parow AM et al. Omega-3 fatty acid treatment and T(2) whole brain relaxation times in bipolar disorder. *Am J Psychiatry.* 2004; 161(10):1922-4.
6. Timonen M, Horrobin D et al. Fish consumption and depression: the Northern Finland 1966 birth cohort study. *J Affect Disord.* 2004; 82(3):447-52.
7. Tanskanen A, Hibbeln JR et al. Fish consumption and depressive symptoms in the general population in Finland. *Psychiatr Serv.* 2001; 52(4):529-31.
8. Logan AC. Omega-3 fatty acids and major depression: A primer for the mental health professional. *Lipids Health Dis.* 2004; 3(1):25.
9. Peet M, Horrobin DF. A dose-ranging study of the effects of ethyl-eicosapentaenoate in patients with ongoing depression despite apparently adequate treatment with standard drugs. *Arch Gen Psychiatry.* 2002; 59(10):913-9.
10. Nemets B, Stahl Z, Belmaker RH. Addition of omega-3 fatty acid to maintenance medication treatment for recurrent unipolar depressive disorder. *Am J Psychiatry.* 2002; 159(3):477-9.
11. De Vriese SR, Christophe AB, Maes M. In humans, the seasonal variation in poly-unsaturated fatty acids is related to the seasonal variation in violent suicide and serotonergic markers of violent suicide. *Prostaglandins Leukot Essent Fatty Acids.* 2004; 71(1):13-8.
12. Buydens-Branchey L, Branchey M. Long-chain n-3 polyunsaturated fatty acids decrease feelings of anger in substance abusers. *Psychiatry Res.* 2008 Jan 15;157(1-3): 95-104. *Epub* 2007 Sep 27.
13. Buydens-Branchey L, Branchey M. n-3 polyunsaturated fatty acids decrease anxiety feelings in a population of substance abusers. *J Clin Psychopharmacol.* 2006 Dec;26(6):661-5.
14. James MJ, Gibson RA, Cleland LG. Dietary polyunsaturated fatty acids and inflammatory mediator production. *Am J Clin Nutr.* 2000; 71(1 Suppl):343S-8S.
15. Bagga D, Wang L, Farias-Eisner R, Glaspy JA, Reddy ST. Differential effects of prostaglandin derived from omega-6 and omega-3 polyunsaturated fatty acids on COX-2 expression and IL-6 secretion. *Proc Natl Acad Sci U S A.* 2003; 100(4):1751-6.
16. Calder PC. N-3 polyunsaturated fatty acids and inflammation: from molecular biology to the clinic. *Lipids.* 2003; 38(4):343-52.
17. Maroon JC, Bost JW. Omega-3 fatty acids (fish oil) as an anti-inflammatory: an alternative to nonsteroidal anti-inflammatory drugs for discogenic pain. *Surg Neurol.* 2006 Apr;65(4):326-31.
18. Hsu HC, Chen CY, Chiang CH, Chen MF. Eicosapentaenoic acid attenuated oxidative stress-induced cardiomyoblast apoptosis by activating adaptive autophagy. *Eur J Nutr.* 2013 Jul 26. [Epub ahead of print].
19. Muhammad K, Morledge t, Saachar R, et al. ClinL - Omega-3 FAs Reduce Serum C-reactive Protein Concentration. Treatment with ?-3 Fatty Acids Reduces Serum. C-reactive Protein Concentration. *Clin. Lipidol.* 2011. 6 (6), 723-729.
20. Sarbolouki S, Javanbakht MH, Derakhshanian H, Hosseinzadeh P, Zareei M, Hashemi SB, Dorosty AR, Eshraghian MR, Djalali M. Eicosapentaenoic acid improves insulin sensitivity and blood sugar in overweight type 2 diabetes mellitus patients: a double-blind randomised clinical trial. *Singapore Med J.* 2013 Jul;54(7):387-90.