

Omega Synergy™



A Uniquely Balanced Essential Fatty Acid Supplement

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Designs for Health's Omega Synergy contains a super premium and synergistic blend of wild deep-sea sourced fish oils and GMO free borage oil because, when it comes to fatty acid supplementation, one should demand synergy and quality. Among the many facts demonstrating the importance of this synergy are that eicosapentaenoic acid (EPA) can lower the body's natural production of gamma-linolenic acid (GLA), and EPA keeps GLA metabolism in an anti-inflammatory mode. In addition, docosahexaenoic acid (DHA) plays as many important roles in human health as EPA, with an added benefit to brain function. Therefore, for optimal benefit it makes sense to take these fatty acids together.

Let's take a look at some of the research on the three important ingredients of Designs for Health's Omega Synergy formula, beginning with a study demonstrating GLA/fish oil synergy in osteoporosis, one of the many inflammatory conditions these compounds work so well together to alleviate.

Essential Fatty Acids and Osteoporosis

Calcium and phosphorus are 2 minerals that are essential for normal bone formation. Hormone deficiency is one cause of osteoporosis. Other causes include excess corticosteroids, hyperthyroidism, hyperparathyroidism, immobilization, malignancy, certain genetic disorders and other miscellaneous problems, such as low calcium in the diet. Vitamin D is also essential, since it is important to proper metabolism of calcium. Regular exercise is beneficial in preventing fractures because it improves bone mineralization and density. Fish-oil treatment has been shown to reduce urinary calcium excretion. Urinary calcium and oxalate excretion in recurring, hypercalciuric stone formers has also been significantly reduced with fish-oil treatment. It has been shown in essential fatty acid-deficient animals that severe osteoporosis develops with increased renal and arterial calcification. In animals fed gamma-linolenic acid (GLA) and eicosapentaenoic acid (EPA) in a ratio of 3:1, 1:1 and 1:3, the intestinal calcium absorption increased by 41.5% in the 3:1-supplemented group compared with the control group. Both calcium balance and bone calcium also increased significantly in the 3:1 group compared with the control group. Supplementation with GLA and EPA were effective in inhibiting bone resorption. In elderly women, supplementation of calcium and GLA plus EPA produced a significant fall in osteocalcin and deoxyypyridinoline, suggesting a reduction in bone turnover. An increase in femoral bone density, with no change in lumbar spine density, was seen in the GLA plus EPA-supplemented group.

Continuing GLA plus EPA supplementation for a period of 18 months showed an increase of 3.1% in lumbar spine density and 4.7% in femoral bone mineral density. Vitamin E is important in preventing cellular lipid peroxidation in cartilage, which is important for maintaining normal bone growth and modeling.

Essential fatty acids and their metabolites have the ability to enhance calcium absorption in the gut and decrease calcium loss. They also have the capability of inhibiting the synthesis and secretion of cytokines, such as interleukin-1, interleukin-6 and tumor necrosis factor- α and inhibit nuclear translocation of NF- κ B, which seems to play a major role in the pathobiology of osteoporosis. Essential fatty acids and statins may interact, such that osteoblasts may proliferate and osteoclasts may undergo apoptosis. It is noted that essential fatty acids and their metabolites are potent inhibitors of the HMG-CoA reductase enzyme. "Essential Fatty Acids and Osteoporosis" Das UN, Nutrition, 2000;16:386-390.

Now consider the study below, demonstrating the individual benefits of EPA, DHA, and GLA on immune function.

Dietary Supplementation With Gamma-Linolenic Acid or Fish Oil Decreases T Lymphocyte Proliferation in Healthy Older Humans

In 46 healthy subjects who were between 55 and 75 years of age, subjects consumed 9 capsules/day for 12 weeks, which contained either placebo oil (80:20 mix of palm and sunflower seed oils) or blends of placebo oil with oils rich in alpha-linolenic acid, gamma-linolenic acid, arachidonic acid or docosahexaenoic acid (DHA) or fish oil. The subjects consumed 2 g of alpha-linolenic acid or 770 mg of gamma-linolenic acid or 680 mg of arachidonic acid or 720 mg of DHA or 1 g of eicosapentaenoic acid (EPA) plus DHA daily from the capsules. The total fat intake from the capsules was 4 g/day. Fatty acid composition of the peripheral blood mononuclear cells was significantly changed in the gamma-linolenic acid, arachidonic acid, DHA and fish oil groups. Lymphocyte proliferation was not affected by placebo, alpha-linolenic acid, arachidonic acid or DHA. **Gamma-linolenic acid and fish oil caused a significant reduction of up to 65% in lymphocyte proliferation.** This reduction was partially reversed by the fourth week after stopping the supplementation. None of the treatments affected the production of interleukin-2 or interferon-gamma by peripheral blood mononuclear cells and none of the treatments affected the number or proportion of T or B lymphocytes, helper or cytotoxic T lymphocytes or memory helper T lymphocytes in the circulation. Moderate levels of gamma-linolenic acid or EPA but not of any of the other fatty acids reduced lymphocyte proliferation but not the production of interleukin-2 or interferon-gamma.

"Dietary Supplementation With Gamma-Linolenic Acid or Fish Oil Decreases T Lymphocyte Proliferation in Healthy Older Humans," Thies F, Calder PC, Nebe-von-Caron G, Powell JR, et al, J Nutr, 2001;131:1918-1927.

And lastly, let's review an abstract of one of the incredible number of studies demonstrating EPA and DHA's heart health benefits.

The n-3 Fatty Acids Eicosapentaenoic Acid and Docosahexaenoic Acid Increase Systemic Arterial Compliance in Humans

In a study of 38 subjects with lipid disorders, subjects received either 3 g/day of eicosapentaenoic acid (EPA), 3 g/day of docosahexaenoic acid (DHA) or placebo in 12, 12 and 14 subjects, respectively, in a 7-week, parallel, double-blind trial. Consumption of omega-3 fatty acids significantly increased systemic arterial compliance, whereas consumption of placebo did not. **There was a 36% increase with EPA and a 27% increase with DHA in systemic arterial compliance. Plasma total and very low density lipoprotein, and triglyceride levels were significantly lower in the omega-3 fatty acid groups compared with the control group.** EPA and DHA supplementation also tended to reduce pulse pressure and total vascular resistance.

"The n-3 Fatty Acids Eicosapentaenoic Acid and Docosahexaenoic Acid Increase Systemic Arterial Compliance in Humans," Nestel P, Shige H, Pomeroy S, et al, Am J Clin Nutr, 2002;76:326-330.

Essential Fatty Acids are Essential to a Healthy Pregnancy: DHA and Pregnancy

During pregnancy, essential long-chain polyunsaturated fatty acids (LCPUFAs) play important roles as precursors of prostaglandins and as structural elements of cell membranes. Throughout gestation, accretion of maternal, placental, and fetal tissue occurs and consequently the LCPUFA requirements of pregnant women and their developing fetuses are high. This is particularly true for docosahexaenoic acid (DHA; 22:6n-3). The ratio of DHA to its status marker, docosapentaenoic acid (22:5n-6), in maternal plasma phospholipids decreases significantly during pregnancy. This suggests that pregnancy is associated with maternal difficulty in coping with the high demand for DHA. The DHA status of newborn multiples is significantly lower than that of singletons; the same is true for infants of multigravidas as compared with those of primigravidas and for preterm compared with term neonates. Because the LCPUFA status at birth seems to have a long-term effect, the fetus should receive an adequate supply of LCPUFAs. **Data from an international comparative study indicated that, especially for n-3 LCPUFAs, the fetus is dependent on maternal fatty acid intake; maternal supplementation with LCPUFAs, their precursors, or both increased LCPUFA concentrations in maternal and umbilical plasma phospholipids. However, significant competition between the 2 LCPUFA families was observed, which implies that effective supplementation requires a mixture of n-6 and n-3 fatty acids (Omega Synergy contains both).** Further research is needed to determine whether higher LCPUFA concentrations in plasma phospholipid will have functional benefits for mothers and children.²

DHA is Essential for Healthy Brain Development in Infants

The primary fatty acids in human brain are DHA and AA (Arachidonic Acid). Docosahexaenoic acid (DHA) is essential for the growth and functional development of the brain in infants. DHA is also required for maintenance of normal brain function in adults. The inclusion of plentiful DHA in the diet improves learning ability in children, whereas deficiencies of DHA are associated with deficits in learning. DHA is taken up by the brain in preference to other fatty acids. The turnover of DHA in the brain is very fast, more so than is generally realized. The visual acuity of healthy, full-term, formula-fed infants is increased when their formula includes DHA.

During the last 50 years, many infants have been fed formula diets lacking DHA and other omega-3 fatty acids. DHA deficiencies are associated with fetal alcohol syndrome, attention deficit hyperactivity disorder, cystic fibrosis, phenylketonuria, unipolar depression, aggressive hostility, and adrenoleukodystrophy. Decreases in DHA in the brain are associated with cognitive decline during aging and with onset of sporadic Alzheimer disease. DHA is present in fatty fish (salmon, tuna, mackerel) and mother's milk. Nature was sure to provide this important fatty acid in mother's milk. It is very unfortunate that it took so long for this extremely important fatty acid to be added to baby formulas. DHA is present at low levels in meat and eggs. EPA, another long-chain n-3 fatty acid, is also present in fatty fish.

With all this said, it is understandable why Omega Synergy is one of Designs for Health's most popular products.

References

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3. Nestel PJ. Fish oil and cardiovascular disease: lipids and arterial function. Am J Clin Nutr 2000; 71:228S-31S.
4. Horrocks LA, Yeo YK. Health benefits of docosahexaenoic acid (DHA). Pharmacol Res 1999; 40:211-25.
5. Fan YY, Chapkin RS. Importance of dietary gamma-linolenic acid in human health and nutrition. J Nutr 1998; 128:1411-4.
6. Horrobin DF. Essential fatty acid metabolism and its modification in atopic eczema. Am J Clin Nutr 2000; 71:367S-72S.
7. Raz. Fish oil inhibits delta-6-desaturase activity in vivo. Nutr Biochem 1997; 8:558-65.

Unique Features of Designs for Health's Omega Synergy:

- Optimized blend of EPA, DHA, GLA, and Flax Oil
- Molecularly Distilled so certified free of heavy metals and impurities
- No Rancidity: tested for both peroxide and anisidine values for optimal freshness!
- Natural Lemon Flavor for patient compliance, with no burping!

Omega Synergy May Be Helpful For:

Calcification • Inflammation • Osteoporosis • Elevated Triglycerides
Diabetes • Weight Loss • Crohn's Disease • Acne • Depression
ADHD • Bipolar Disorder • Multiple Sclerosis

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