## ORTHOMEGA<sup>®</sup> LIQUID FISH OIL MANGO





#### **CLINICAL APPLICATIONS**

- Supports Cardiovascular Health and Blood Sugar Metabolism
- Supports Cognitive Function and Development
- Supports Healthy Skin, Joints and Connective Tissues
- Increases Visual and Ocular Health
- Helps Maintain a Healthy Inflammatory Response and Strengthen Immune Function

# CARDIOVASCULAR HEALTH

Orthomega<sup>®</sup> Liquid is a molecularly distilled, highconcentration fish oil sourced from the cold, fresh waters off the Chilean coast. These waters provide the cleanest, most sustainable source of fish in the world. Orthomega<sup>®</sup> Liquid includes 1.3 g of eicosapentaenoic acid (EPA) and 850 mg of docosahexaenoic acid (DHA) per serving as natural triglycerides, the preferred form. The bioidentical, triglyceride form found in Orthomega<sup>®</sup> Liquid allows for enhanced absorption and better assimilation in the body. The Orthomega<sup>®</sup> Liquid formulation is a convenient method of achieving optimal omega-3 levels in the body. The natural mango-flavored liquid is the ideal alternative to encapsulated fish oil supplements.

#### **Overview**

Omega-3 fatty acids are essential cornerstones of human nutrition. They are deemed "essential" because we need them for proper health, but cannot produce them on our own. We must consume these fats through diet or supplementation. Omega-3 fatty acids are required for a number of body functions, from proper blood flow to brain development. These long-chain fatty acids are integral components of tissues and organ systems throughout the body, including the heart, skin, joints, eyes and immune system. In nature, omega-3 fatty acids occur as alpha linolenic acid (ALA), found mostly in plants, and as long-chain EPA and DHA, which primarily originate from cold-water fish. The body is able to slowly convert the shorter chain ALA to the more active long-chain, EPA and DHA. However, many people lack the enzymes delta-5 and delta-6 desaturase necessary to make the conversion, making a higher dietary intake of EPA and DHA necessary. In addition, major changes in modern diet over the last century have led to a

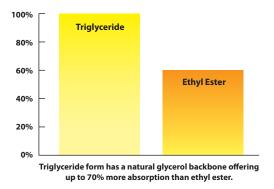
decrease in the general consumption of omega-3 fatty acids. Since omega-3 fatty acids are known to benefit cardiovascular health, support healthy brain function and cognition, and maintain a healthy inflammatory response, achieving the proper balance of omega-3s has become an important health strategy that requires supplementation for most people.<sup>1</sup> The American Heart Association recommends that those concerned about blood lipids take up to 4 g of omega-3 fatty acids per day.<sup>2</sup>

#### Fish Oil Delivery – Triglycerides vs. Ethyl Esters<sup>+</sup>

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 natural triglyceride-based fish oils are the preferred form for superior fish oil absorption, the vast majority of fish oil products available on the market are in the semi-natural ethyl ester form. While ethyl esters allow for higher concentrations of EPA and DHA, their unusual structure is resistant to the digestive enzymes (lipases) that enable fat breakdown. In a study comparing EPA and DHA digestion in both forms, five common digestive lipase enzymes were shown to more readily digest fish oil in the natural triglyceride as compared to the ethyl ester substrate.<sup>3</sup> A recent study, conducted by fish oil research pioneer Dr. Jorn Dyerberg, demonstrated that omega-3s in the triglyceride form are more efficiently digested and therefore 70% more absorbable than omega-3s in the ethyl ester form.4



#### Relative % Bioavailability of Triglyceride Compared to Regular Ethyl Ester



#### **Omega-3 Depletion<sup>+</sup>**

An accumulating body of research shows that the typical modern diet does not provide a sufficient amount of omega-3s for optimal health. Additionally, insufficient conversion of 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.<sup>5</sup>

#### Cardiovascular and Blood Sugar Health<sup>+</sup>

Omega-3 fatty acids have long been known to benefit cardiovascular health. The well-known GISSI-Prevezione trial found that just 1 g a day of omega-3 fatty acids had a significant impact on cardiovascular health after three to four months of consumption.<sup>6</sup> EPA and DHA have been shown to modulate levels of fat in the blood,<sup>7</sup> and a meta-analysis of 31 placebo-controlled trials found that for each gram of omega-3s consumed, there was improved support for healthy blood pressure levels.<sup>8</sup> Population studies have also reported that EPA and DHA support better blood sugar balance in populations consuming large amounts of the n-3 long-chain PUFAs.<sup>9</sup>

#### Additional Benefits of Omega 3 Fatty Acids<sup>+</sup>

In addition to their well-known cardiovascular benefits, omega-3 fatty acids play a central role in brain development, mood enhancement, improved cognition, joint comfort and visual acuity.

#### **Mood Enhancement<sup>+</sup>**

A double-blind study, which randomLy assigned participants with low mood to either placebo, 1 g/day or 2 g/day of EPA, found significant improvement with both doses of EPA compared to placebo in balancing mood.<sup>10</sup>

#### **Increased Mental Focus<sup>+</sup>**

In a recent British study, omega-3 blood levels were shown to be directly related to improved measures of cognition, performance and behavior among healthy children with below-average reading ability.<sup>11</sup>

#### Joint Comfort<sup>†</sup>

A dose of 1,200 mg per day of omega-3 essential fatty acids were found to improve back and joint discomfort among 125 people, with 88% choosing to continue supplementation after the study's end.<sup>12</sup> Fish oil has also been shown to improve tender joints and morning stiffness after three months of consumption.

#### Visual Acuity<sup>+</sup>

A study evaluating the long-term effects of EPA and DHA on visual development in 136 school-age Inuit children exposed to high levels of n-3 PUFAs during gestation, found beneficial effects of DHA intake on visual acuity.<sup>13</sup> Eating oily fish at least once per week compared with less than once per week was also found to enhance visual clarity and reduce commonly occurring visual deterioration in adults.<sup>14</sup>

#### Directions

1 teaspoon (5mL) per day or as recommended by your health care professional.

#### **Does Not Contain**

Wheat, gluten, dairy, peanuts, tree nuts, egg, artificial colors, sweeteners or preservatives.

#### Cautions

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

### Supplement Facts

Serving Size 1 Teaspoon (5 mL) Servings Per Container 30

| 1 teaspoon contains                                       | Amount Per<br>Serving | % Daily<br>Value |
|---|-----------------------|------------------|
| Calories  | 40                    |                  |
| Calories from fat   | 40                    |                  |
| Total fat   | 4.5 g                 | 7%*              |
| Cholesterol   | 10 mg                 | 3%               |
| Total Omega-3 Fatty Acids                                 | 2.6 g                 | **               |
| EPA (Eicosapentaenoic Acid)                               | 1.3 g                 | **               |
| DHA (Docosahexaenoic Acid)                                | 850 mg                | **               |
| Omega-3 Fatty Acids (additiona                            | l) 450 mg             | **               |
| * Percent Daily Values are based on a 2,000 calorie diet. |                       |                  |

\*\* Daily Value not established

ID# 444005 5.07 fl oz (150 mL)

#### References

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