



## OMEGA<sup>AVAIL</sup>™ SYNERGY

COMPREHENSIVE FORMULATION OF ESSENTIAL FATTY ACIDS

180 SOFTGELS | NPN80103209 | OVS180-CN

**OmegAvail™ Synergy** is composed of a unique blend of omega 3-6-7-9 essential and non-essential fatty acids (FAs). FAs may be one of the most important dietary supplements as they are foundational for promoting optimal health. Every cell in the body needs FAs to function properly, as they are essential in the process of rebuilding and synthesizing new cells. FAs have a desirable effect on many conditions; they support heart health, normal cholesterol and triglyceride metabolism, immune system function, brain, and nervous system health, joint mobility, healthy skin and hair, and healthy inflammatory response.<sup>1-3</sup>

The omega-3 (n-3) fatty acids in this formula are derived from fish oils in their natural triglyceride (TG) form – the same way they naturally occur in fish. Most mass-marketed fish oil supplements come in the synthetic ethyl ester (EE) form. Compared to the true TG form, the EE form is more convenient to produce but not as readily recognized, digested, and assimilated by the body, and is more prone to oxidation and production of free radicals. In order to receive the maximum benefits from omega-3 fish oil supplementation, it is critical that these fats are provided in the most bioavailable and bioidentical form, the same form that is naturally found in fish and in the tissues of the human body. The TG form is broken down 12-15% faster than the EE form by pancreatic lipase enzyme, which is also included in this formula for enhanced digestion and absorption of fish oils. Because the natural TG form is most easily digested and available for the body to use, this TG advantage is effective at promoting healthy n-3 levels in the body.

This unique, synergistic formula provides not only the beneficial omega-3s eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) from fish oils, but a blend of other FAs including gamma-linolenic acid (GLA) from the oil of borage seeds, as well as palmitoleic acid (PA), and oleic acid (OLA) from organic virgin macadamia nut oil and borage oil for a spectrum and balance of high-quality, health-promoting fatty acids.

### OMEGA-3 FATTY ACIDS

EPA is beneficial for supporting healthy brain function, balanced emotions, skin health, normal cholesterol metabolism, and a proper inflammatory response.<sup>16-19</sup> DHA supports proper brain development and function, visual acuity, maintenance of normal triglyceride metabolism and healthy blood pressure, eye development, and a healthy pregnancy for expectant mothers.<sup>14,20-23</sup> Omega-3s are found in fresh deepwater fatty fish, fish oil, and certain vegetable oils such as canola oil, flaxseed oil, and walnut oil. Omega-3 EFAs have been shown to create more stable arterial plaque benefiting heart health compared to the omega-6 fatty acids that are derived from unsaturated vegetable oils such as soybean, corn, sunflower, and cottonseed oils.<sup>1,4</sup>

A meta-analysis showed that EPA and DHA supplementation reduced serum triglycerides and raised high-density lipoprotein (HDL) cholesterol.<sup>5</sup> In patients with hypertriglyceridemia taking a statin, 4 g/d of EPA significantly reduced the incidence of major cardiovascular events, suggesting cardioprotective effects.<sup>6,24</sup> Moreover, n-3 polyunsaturated fatty acids (PUFAs) with EPA levels  $\geq 60\%$  at a dosage of  $\leq 1$  g/d demonstrated therapeutic effects on the improvement of depression in a recent meta-analysis due to their anti-inflammatory properties.<sup>18</sup> Inflammation has been shown to contribute to depressive disorders; both EPA and DHA have been shown to decrease the production of inflammatory cytokines TNF-alpha, IL-1beta, IL-2, and IL-6 that are related to depression.<sup>18</sup> According to a review, high levels of fish consumption and n-3 supplementation demonstrated protective effects against Alzheimer's disease, decreased the incidence of Parkinson's disease (PD) as well as depressive symptoms associated with PD, and improved the quality of life in patients with multiple sclerosis.<sup>25</sup> Compared with the control group who received corn oil, test subjects with rheumatoid arthritis (RA) who supplemented

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130 mg/kg/day of body weight of n-3 fatty acids for 30 weeks, had significant reductions in pain, morning stiffness, and tender joints.<sup>8</sup>

#### **BENEFITS:**

- Promotes cardiovascular health<sup>4</sup>
- Supports health cholesterol and triglyceride metabolism<sup>5</sup>
- May reduce the risk of blood clot formation<sup>6</sup>
- Supports healthy blood pressure<sup>6</sup>
- Promotes healthy blood glucose metabolism<sup>6</sup>
- Helps support healthy joint function<sup>6-9</sup>
- Promotes neurological function and brain health<sup>6</sup>
- Supports immune health and healthy inflammatory response<sup>10,11</sup>
- May support skin health<sup>12</sup>
- Promotes hormonal balance<sup>13</sup>
- Supports eye health<sup>14,15</sup>
- Supports healthy mood and balanced emotions<sup>16,17</sup>

#### **OMEGA-6 FATTY ACIDS**

OmegAvail™ Synergy contains GLA, an n-6 fatty acid from borage seed oil that acts as an anti-inflammatory agent, essential for smooth and healthy skin.<sup>26</sup> GLA controls the body's production of prostaglandins which are chemical messengers that regulate processes in the body such as the reproductive cycle as well as female hormonal balance.<sup>13</sup> When GLA is supplied exogenously, dihomo gamma-linolenic acid (DGLA), which possesses anti-inflammatory properties, can be synthesized in the skin.<sup>12</sup> In patients with RA, daily supplementation of borage seed oil containing 1.4 g of GLA for 24 weeks had significantly reduced swelling and tenderness in their joints compared with the placebo group.<sup>7,8</sup> Animal studies reveal that along with fish oil, borage seed oil supplementation significantly altered both the levels and composition of fatty acid derivatives in the skin, suggesting that supplementation with fish oil and GLA-rich oils may help with inflammatory skin disorders such as eczema, psoriasis, and atopic dermatitis.<sup>12</sup> In an RCT of women with clinical presentations of dry and sensitive skin, 12 weeks of borage oil attenuated the inflammatory response to a skin irritant, decreased transepidermal water loss, and significantly improved reduced roughness and scaling of the skin.<sup>12</sup>

#### **OMEGA-7 AND OMEGA-9 FATTY ACIDS**

Palmitoleic acid (POA) and oleic acid (OA) are touted for their ability to support healthy hair, skin, and nails, as well as healthy immune and nervous systems and normal blood glucose metabolism. Additionally, due to its high concentration of POA (20%), macadamia oil supplementation has been shown to decrease serum TG and cholesterol levels, reducing cardiovascular disease risk.<sup>27</sup> Macadamia nut oil is also a rich source of oleic acid (60%) and is the main characteristic of the Mediterranean diet, and research shows that adherence to this OA-rich diet may reduce pain in those with inflammatory arthritis via mediating anti-inflammatory effects by inhibiting reactive oxygen species, MAPK and NF-κB pathways, as well as by increasing leukotriene A3 levels, a potent inhibitor of LTB4.<sup>6,9</sup>

SCD1, the enzyme responsible for the biosynthesis of monounsaturated fatty acids (MUFA) (e.g., OA and POA) from saturated fatty acids (SFA), and with respect to the central nervous system, has been shown to increase myelin basic protein levels, suggesting OA's role as a neuroactive fatty acid. Moreover, OA activates the PPAR-alpha nuclear receptors which are responsible for neuronal differentiation and upregulation of neuron-specific proteins associated with axonal and dendritic growth, and also inhibits the astrocytic gap junction permeability, with respect to the modulation of glial cells.<sup>9</sup> Further research shows that maintenance of adequate MUFA levels, and a balanced MUFA to SFA ratio, is essential for preserving liver and intestinal function, as well as for modifying plasma lipid and lipoprotein composition shown to reduce inflammation, oxidative stress, and ameliorate glucose homeostasis and blood pressure.<sup>6</sup> Consumption of OA has been shown to reduce the risk of gastric-duodenal ulcers and improved pancreas and liver secretory activity, as well as prevent methionine- and choline-deficient diet-induced injury such as steatohepatitis.<sup>6</sup>

#### **Medicinal Ingredients (per softgel):**

Fish oil (Alaska pollock) .....	450 mg
EPA (Eicosapentaenoic acid).....	135 mg
DHA (Docosahexaenoic acid).....	90 mg
Oleic acid ((Z)-9-Octadecenoic acid, <i>Borago officinalis</i> -Seed, <i>Macadamia integrifolia</i> -oil) .....	200 mg
Gamma-linolenic acid ( <i>Borago officinalis</i> -Seed).....	80 mg
Palmitoleic acid (9-Hexadecenoic acid).....	42.5 mg
Lipase (Triacylglycerol lipase).....	0.25 mg (3300 FCC LU)

**Non-Medicinal Ingredients:** Bovine gelatin, purified water, glycerine, annatto (colour), natural lemon flavour, DeltaGold® tocotrienols, lipase. **Contains fish (Alaska pollock) and tree nuts (macadamia nuts). Recommended Dose:** Adults: Take two softgels per day with meals, or as directed by your health care practitioner. For prolonged use, consult a health care practitioner.

#### **REFERENCES**

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