

# Therapeutic Differential Effects of DHA and EPA Omega-3 Fatty Acids

Advanced Lipoprotein Profile  
HS-Omega-3 Index\*\*\*

<u>Ω - 3</u>	<u>Bioavailability Dose Response</u> <sup>1</sup>	<u>Triglycerides Lipoproteins</u> <sup>2</sup>	<u>Sudden Cardiac Death</u> <sup>3</sup>	<u>Inflammation Arthritis</u> <sup>4</sup>	<u>Alzheimer Dementia Aging</u> <sup>5</sup>	<u>Maternal &amp; Childhood Brain</u> <sup>6</sup>	<u>Macular Degeneration</u> <sup>6</sup>	<u>Concussion</u> <sup>7</sup>	<u>Hypertension Heart Rate</u> <sup>8</sup>	<u>Skin Health</u> <sup>9</sup>
<b>DHA*</b>	Ω Ω	Ω Ω	Ω Ω	Ω Ω	Ω Ω	Ω Ω	Ω Ω	Ω Ω	Ω Ω	Ω Ω
<b>EPA**</b>	Ω	Ω	■	Ω	■	■	■	■	■	■

Ω Ω Therapeutic    Ω Beneficial    ■ Little or No Effect

\* *DHA from algae in the triglyceride form, that is free of EPA and contaminates is available from DHA Advantage ph. 877- 434 – 2254, [www.dhaadvantage.net](http://www.dhaadvantage.net). The bioavailability of DHA in the triglyceride form is three times that of the ethyl ester form<sup>1</sup>.*

\*\* *Fish oil contains EPA and DHA in varying amounts and is usually converted to the ethyl ester form for purification.*

\*\*\* *LPP, an Advanced Lipoprotein Particle Profile is available from SpectraCell Laboratories ph. 800 - 227- 5227, [www.spectracell.com](http://www.spectracell.com) High omega-3 heart muscle content, as determined from a red blood cell assay, can reduce the risk of sudden cardiac death by 90%. The HS-Omega-3 Index test determines the red blood cell omega-3 content.*

## References:

- Dyerberg J et al., Bioavailability of n-3 fatty acid formulations. n-3 Fatty Acids: Prevention and Treatment in Vascular Disease, Bi & Gi Publishers, Verona – Springer Verlag, London 1995; 217  
Arterburn LM et al., Distribution, interconversion, and dose response of n-3 fatty acids in humans. Am J Clin Nutr 2006;83:1467S-76S
- Mori et al., Purified eicosapentaenoic and docosahexaenoic acids have differential effects on serum lipids and lipoproteins, LDL particle size, glucose, and insulin in mildly hyperlipidemic men. Am J Clin Nutr 2000;71:1085-94  
Egert et al., Dietary  $\alpha$ -linolenic acid, EPA, and DHA have differential effects on LDL fatty acid composition but similar effects on serum lipid profiles in normolipidemic humans. Journal of Nutrition 2009;139(5):861-868  
Kelly DS, Docosahexaenoic acid supplementation decreases remnant-like particle-cholesterol and increases the (n-3) index in hypertriglyceridemic men. Journal of Nutrition 2008;138: 30–35  
Calzada et al., Subgram daily supplementation with docosahexaenoic acid protects low-density lipoproteins from oxidation in healthy men. Atherosclerosis 2010; 208:467-472
- Harris WS, Omega-3 fatty acids and cardiovascular disease: A case for omega-3 index as a new risk factor. Pharmacological Research 2007;55:217–223  
McLennan PL, Myocardial membrane fatty acids and the antiarrhythmic actions of dietary fish oil in animal models. Lipids 2001;36:Suppl:S111-4
- [Weldon SM](#), [Mullen AC](#), [Loscher CE](#), [Hurley LA](#), [Roche HM](#), Docosahexaenoic acid induces anti-inflammatory profile in lipopolysaccharide-stimulated human THP-1 macrophages more effectively than eicosapentaenoic acid. J Nutr Biochem. 2007;18(4):250-8
- Morris MC, Evans DA et al., Consumption of fish and n-3 fatty acids and risk of incident Alzheimer disease. Arch Neurol 2003; 60(7):940-6  
Farzaneh-Far et al., **Association of Marine Omega-3 Fatty Acid Levels with Telomeric Aging in Patients with Coronary Heart Disease. JAMA 2010;303(3):250-257**  
Muldoon MF et al., Serum Phospholipid Docosahexaenoic Acid Is Associated with Cognitive Functioning during Middle Adulthood. J. Nutr. 140: 848–853, 2010
- Uauy R, Hoffman DR, Peirano P, Birch DG, Birch EE, Essential fatty acids in visual and brain development. Lipids 2001; 36(9):885-95
- Bailes JE, Mills JD, Docosahexaenoic acid reduces traumatic brain injury in a rodent head injury model. J Neurotrauma 2010; 27: 1617-1624  
Mills JD, Hadley K, Bailes JE, Dietary supplementation with the omega-3 fatty acid docosahexaenoic acid in traumatic brain injury. Neurosurgery. 2011;68(2):474-81
- Mori TA, Bao DQ, et al., Docosahexaenoic acid but not eicosapentaenoic acid lowers ambulatory blood pressure and heart rate in humans. Hypertension 1999;34(2):253-60
- Brown ER, Subbiah PV, Differential effects of eicosapentaenoic acid and docosahexaenoic acid on human skin fibroblast. Lipids 1994; (12):825-9