

## DHA Benefits for Cardiovascular Health

Docosahexaenoic acid (DHA) is a long chain polyunsaturated omega-3 fatty acid that is the most abundant omega-3 fatty acid in cell membranes throughout the body and present in all organs. DHA is rich in neural cells such as brain and retina tissue. Alpha-linolenic (ALA) and eicosapentaenoic (EPA) acids are present in tissue in tiny amounts, whereas there is usually 5 to 30 times more DHA than EPA in most organs including the heart.<sup>1,2</sup>

In the past both DHA and EPA were presumed necessary to obtain observed cardiovascular benefits of omega-3 administration, since fish oil, containing both long chain omega-3s, was generally the source. More recent research demonstrates the following benefits that DHA alone can provide.

### Favorable Effects on Blood Lipids

DHA supports normalization of high triglyceride levels (reduces both fasting and postprandial [after-meal] triglycerides).

- DHA is equal to, or more potent than, EPA and DHA for lowering triglycerides.<sup>3,4</sup>
- DHA is equal to, or more potent than, EPA for lowering triglycerides.<sup>5</sup>
- DHA is more potent than EPA for the reduction of postprandial triglyceride levels.<sup>6</sup>
- DHA supports normal triglyceride levels.<sup>3,4,5,6,7,8,9,10,11,12</sup>

DHA supports healthy HDL levels (increases HDL – the “good” cholesterol).

- DHA promotes a modest increase in HDL.<sup>5,7,8</sup>
- DHA is more potent than EPA for increasing levels of the large HDL particles which are the more protective fraction of HDL.<sup>5</sup>
- DHA supports healthy LDL particle size (improves LDL particle size).<sup>9,13</sup>
- DHA, particularly when administered for reduction of triglycerides, improves LDL particle size and density so that it is less atherogenic.<sup>6,13,14,15,16</sup>

### Heart Rate

- DHA contributes to a healthy resting heart rate.<sup>7,17</sup>
- DHA helps maintain a normal heart rate.<sup>7,18</sup>
- DHA, but not EPA, reduces heart rate.<sup>7,16,19,20</sup>

### Blood Pressure

- DHA contributes to normal blood pressure (modest reductions in blood pressure at higher doses).<sup>2</sup>
- DHA, but not EPA, contributes to normal blood pressure.<sup>16</sup>

## References

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- <sup>6</sup>Conquer & Holub J Nutr 1996 126:3032-3039.
- <sup>7</sup>Agren et al. Eur J Clin Nutr 1996 50:765-71.
- <sup>8</sup>Wu et al. Eur J Clin Nutr 2006 60:386-392.
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- <sup>10</sup>Engler et al. Am J Cardiol 2005 95:869-871.
- <sup>11</sup>Stark & Holub Am J Clin Nutr 2004 79:765-773.
- <sup>12</sup>Davidson et al. J Am Coll Nutr 1997 16:236-243.
- <sup>13</sup>Maki et al. J Am Coll Nutr 200524:189-199.
- <sup>14</sup>Kelley at al. Am J Clin Nutr 2007 86:324-333.
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- <sup>16</sup>Keller et al. J Clin Lipid 2007 1:151.
- <sup>17</sup>Mori et al. Curr Opin Metab Care 2006 9:95-104.

