Low-Dose Docosahexaenoic Acid Lowers Diastolic Blood Pressure in Middle-Aged Men and Women


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Summary:

Since a number of controlled trials have indicated that higher intakes of DHA/EPA (combined) in the range of 2000-3000 mg/day can moderately lower both systolic and diastolic blood pressure, the present study was conducted to evaluate the potential for much lower intakes of long-chain omega-3 fatty acids (DHA in this particular study) to significantly lower blood pressure. In this randomized, double-blind, crossover, placebo-control trial in middle-aged men and women, the 38 subjects received either a plant oil (placebo control) or an algal-derived oil supplement providing 700mg DHA/day over treatment periods lasting 3 months in duration separated by a four month washout period. A moderate but statistically-significant reduction was found in the diastolic blood pressure by (3.3 mm HG) in the DHA-treated group as compared to controls. A trend towards a modest reduction in heart rate was also observed with DHA supplementation (2.1 beats per minute lower) although this did not reach statistical significance. The authors conclude that moderately increased intakes of DHA have the potential to lower diastolic blood pressure which may possibly be of clinical significance with respect to the risk of future vascular events in middle-aged subjects.

Dr. Holub's Comments:

It is of interest to point out that the dose level of DHA delivered by supplementation in the present investigation (700 mg DHA/day) is in the range of levels which can potentially be consumed by the consumption of some sources of fatty fish with 6-7 servings per week. As well,
commercial shell eggs as available in the North-American marketplace routinely provide approximately 80-130 mg of DHA/egg. Various other functional foods are now available with more appearing in the near future which will provide additional optional sources of DHA from the food supply. The marked increase in blood levels of DHA reported in the present study with supplementation by these investigators is of interest since higher levels of DHA in the circulation have been reported in the literature to be associated with a lower risk of coronary heart disease as well as with a lower rate of progression of pre-existing atherosclerosis when sequentially monitored by coronary angiography.

Previous studies using higher levels of DHA supplementation/day (2800mg) over a four week period in the study by Stark and Holub, Am. J. Clin. Nutr, 79: 765-773 (2004) resulted in a highly significant and more pronounced reduction in resting heart rate (a 7% decrease as compared to the trend towards a 3% decrease with lower-dose DHA in the present study).