Evidence that Omega-3 Supplementation can Reduce Reactivity to Mental Stress

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Reference:

Preliminary Evidence that Acute Long-Chain Omega-3 Supplementation Reduces Cardiovascular Reactivity to Mental Stress: A Randomized and Placebo Controlled Trial

Ginty, A. and Conklin, S. M., Biological Psychology. in press, 2011

Dept. of Psychology and Neuroscience Pgm., Allegheny College, Meadville, PA, USA

Summary:

It is known that increased intakes of DHA plus EPA from fish/fish oils have been associated with the improvement of various risk factors for cardiovascular disease including the reduction of serious cardiac outcomes in many trials. Since excessive cardiovascular reactions to various mental stressors have been documented which are considered to adversely affect the cardiovascular system (including elevated blood pressures, etc.), the present study was designed to determine the potential effect of EPA/DHA omega-3 supplementation on the cardiovascular reactivity to mental stress in young and healthy adults.

For this purpose, 43 college students (average age of 20 years) were randomly assigned to receive daily supplementation with a corn oil placebo (control group) or omega-3 providing 1400 mg of EPA/DHA daily (1000 mg EPA plus 400 mg DHA) for a treatment period of 21 days. The stress reactivity testing was performed at baseline and 21 days later and consisted of measuring cardiovascular measures (including blood pressures, heart rates) upon subjecting the test subjects to a psychological stress task after a pre-rest interval followed by a recovery period. Interestingly, the mean arterial pressure reactivity in response to stress was significantly reduced following supplementation with EPA/DHA but not in the placebo (control) group. The stress mean arterial pressure (MAP) rose by an average of 13.0 mm Hg above resting values at baseline but by only 7.3 mm Hg following omega-3 supplementation. The authors state this study to be the first to show such positive effects of EPA/DHA supplementation at relatively low-doses and for short-term intervals on cardiovascular reactivity to mental stress in young healthy adults.
Dr. Holub's Comments:

The present results indicate that yet another mechanism by which long-chain omega-3 fatty acids as EPA/DHA may reduce cardiovascular disease and ‘hard events’ (incl. myocardial infarctions and sudden cardiac death ) is by alleviating the impact of mental stressors on the cardiovascular system and its reactivity to such. It is possible that EPA/DHA and/or their metabolites (eicosanoids, resolvins, protectins) may act within neural tissue or elsewhere to exhibit ameliorating effects on various mental stressors. The daily dose of EPA plus DHA (1400 mg/day) as used in the present trial is many fold higher than average daily intakes in North America (approx. 130 – 150 mg/person) yet within the range of daily intakes for a significant number of adults living in Japan (via fish/seafood).