J Pediatr. 2001 Aug;139(2):189-96.

A randomized, double-blind, placebo-controlled trial of docosahexaenoic acid supplementation in children with attention-deficit/hyperactivity disorder.

Voigt RG, Llorente AM, Jensen CL, Fraley JK, Berretta MC, Heird WC.

Division of Developmental and Behavioral Pediatrics, Mayo Clinic, Rochester, Minnesota 55905, USA.

OBJECTIVE: To determine whether docosahexaenoic acid (DHA) supplementation for 4 months decreases the symptoms of attention-deficit/hyperactivity disorder (ADHD). STUDY DESIGN: Sixty-three 6- to-12-year-old children with ADHD, all receiving effective maintenance therapy with stimulant medication, were assigned randomly, in a double-blind fashion, to receive DHA supplementation (345 mg/d) or placebo for 4 months. Outcome variables included plasma phospholipid fatty acid patterns, scores on laboratory measures of inattention and impulsivity (Test of Variables of Attention, Children's Color Trails test) while not taking stimulant medication, and scores on parental behavioral rating scales (Child Behavior Checklist, Conners' Rating Scale). Differences between groups after 4 months of DHA supplementation or placebo administration were determined by analysis of variance, controlling for age, baseline value of each outcome variable, ethnicity, and ADHD subtype. RESULTS: Plasma phospholipid DHA content of the DHA-supplemented group was 2.6-fold higher at the end of the study than that of the placebo group (4.85 +/- 1.35 vs 1.86 +/- 0.87 mol % of total fatty acids; P <.001). Despite this, there was no statistically significant improvement in any objective or subjective measure of ADHD symptoms. CONCLUSION: A 4-month period of DHA supplementation (345 mg/d) does not decrease symptoms of ADHD.