Reference:

Assessing the Effect of Docosahexaenoic Acid on Cognitive Functions in Healthy, Preschool Children: A randomized, Placebo-Controlled, Double-Blind Study


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Summary:

There is considerable evidence (including reviews thereof) that maternal supplementation (during pregnancy and lactation) with long-chain omega-3 fatty acids as DHA+EPA may improve subsequent cognitive development of infants and children. While numerous studies have evaluated the potential beneficial effects of higher intakes of DHA in infants (via breast feeding or infant formula), relatively few control studies have been conducted to date in children over the age of 2 years. The present study has a randomized, placebo-controlled, double-blind study on healthy four year old children who received daily supplementation with 400 mg of DHA (docosahexaenoic acid) or a matching placebo in capsules for a four month period. This multi-centre study employed various cognitive test methodologies as performed on the children including testing of sustained attention, picture vocabulary testing, Day-Night Stroop testing, and continuous performance testing. In addition, blood samples were collected and the DHA levels measured by gas-liquid chromatography to allow for evaluating relationships between blood levels of DHA with scores on the cognitive testing.

For each of the cognitive tests performed, no significant change was found from baseline to the end of treatment at four months (with DHA supplementation) as compared to the placebo (control) group. However, a significant and positive relationship was found between blood levels of DHA and the scores obtained on the Peabody Picture Vocabulary Test which is a test of listening comprehension and vocabulary acquisition.
Dr. Holub's Comments:

The finding of no significant effect of DHA supplementation on the cognitive test scores despite a positive association between higher levels of DHA in the circulating blood and scoring on the Peabody Picture Vocabulary Test (a test of listening comprehension for the spoken word in standard English) suggests that, in some children, DHA supplementation at 400 mg/day or at higher levels for a similar or longer time period may improve some subtle cognitive outcomes during childhood. Thus, future studies are warranted. It should be pointed out that the level of supplementation (400 mg DHA/day) used in the present investigation is commonly consumed from dietary sources (primarily fish/seafood) in young children living in Japan (some of whom regularly consume even higher levels).