

Abstract

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Effects of Early Maternal Docosahexaenoic Acid Intake on Neuropsychological Status and Visual Acuity at Five Years of Age of Breast-Fed Term Infants.

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OBJECTIVE: We previously reported better psychomotor development at 30 months of age in infants whose mothers received a DHA (docosahexaenoic acid; 22:6n-3) supplement for the first 4 months of lactation. We now assess neuropsychological and visual function of the same children at 5 years of age.

STUDY DESIGN: Breastfeeding women were assigned to receive identical capsules containing either a high-DHA algal oil (approximately 200 mg/d of DHA) or a vegetable oil (containing no DHA) from delivery until 4 months postpartum. Primary outcome variables at 5 years of age were measures of gross and fine motor function, perceptual/visual-motor function, attention, executive function, verbal skills, and visual function of the recipient children at 5 years of age.

RESULTS: There were no differences in visual function as assessed by the Bailey-Lovie acuity chart, transient visual evoked potential or sweep visual evoked potential testing between children whose mothers received DHA versus placebo. Children whose mothers received DHA versus placebo performed significantly better on the Sustained Attention Subscale of the Leiter International Performance Scale (46.5 +/- 8.9 vs 41.9 +/- 9.3, $P < .008$) but there were no statistically significant differences between groups on other neuropsychological domains.

CONCLUSIONS: Five-year-old children whose mothers received modest DHA supplementation versus placebo for the first 4 months of breastfeeding performed better on a test of sustained attention. This, along with the previously reported better performance of the children of DHA-supplemented mothers on a test of psychomotor development at 30 months of age, suggests that DHA intake during early infancy confers long-term benefits on specific aspects of neurodevelopment.

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