USANA HEALTH SCIENCES

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April 7th, 2010

New research shows that infants receiving milk or formula with adequate docosahaxaenoic acid (DHA) have improved visual acuity compared to infants receiving the lowest levels. Higher dietary intakes of DHA (a fat contained in highest amounts in fish oil) can positively affect levels in milk.

INADEQUATE DHA INTAKE IN INFANTS IS RELATED TO DECREASED VISUAL ACUITY

The range of human milk docosahexaenoic acid (DHA) concentrations can vary considerably since maternal diet can greatly influence breast milk fatty acid composition. In one study, average DHA levels in human milk ranged from 0.17% to 0.99%, with U.S. and Canadian women among those with the lowest levels.

New research published in the American Journal of Clinical Nutrition sought to determine the effect of 4 amounts of DHA supplementation on the visual acuity of formula-fed infants. Other objectives were evaluated, including visual acuity maturation, red blood cell fatty acids, tolerance, anthropometric measures, and adverse events.

This double-blind randomized trial included 343 healthy, term, formula-fed infants. The infants were enrolled at 1-9 days of age and randomly assigned to be fed one of four infant formulas containing differing levels of DHA (0%, 0.32%, 0.64% and 0.96%). All other nutrients were equivalent between the formulas. Visual acuity of the infants was measured at the completion of the study at 12 months.

Infants fed control formula (0% DHA) had significantly poorer visual acuity at 12 mo of age than did infants who received any of the DHA-supplemented formulas. There were no significant differences in the visual acuity of the infants fed any of the other DHA-supplemented formulas.

DHA supplementation of infant formula at 0.32% of total fatty acids improves visual acuity. Higher amounts of DHA supplementation do not appear to provide additional improvements to visual acuity.

Birch EE, Carlson SE, Hoffman DR, Fitzgerald-Gustafson KM, Fu VLN, Drover JR, Castañeda YS, Minns L, Wheaton DKH, Mundy D, Marunycz J, Diersen-Schade DA. The DIAMOND (DHA Intake And Measurement Of Neural Development) Study: a double-masked, randomized controlled clinical trial of the maturation of infant visual acuity as a function of the dietary level of docosahexaenoic acid. 2010. AJCN 91(4):848-59.