Reference:

Improved Cognition in 4-year-old Children who received Dietary Docosahexaenoic Acid (DHA) and Arachidonic Acid (ARA) during their first 12 Months of Life

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Summary:

The main purpose of the present research study was to compare cognitive outcomes in 4-year children who had previously been fed (during the first year of life) infant formula without or with long-chain polyunsaturated fatty acids (PUFA) as DHA omega-3 (docosahexaenoic acid) plus AA omega-6 (arachidonic acid) along with those infants who were breast-fed. The PUFA enriched formula contained DHA at 0.32% by weight of milk fat (along with AA at 0.64%). Breast milk is a natural source of both DHA and AA and the infants in this group were considered to represent the ‘gold standard’ by the authors. At age 4 years, 142 children from across the three infant feeding groups were subjected to IQ testing by the Wechsler Pre-school and Primary Scale of Intelligence.

The Performance IQ scores were significantly better (by an average of 7%) in the children who were earlier fed the DHA formula containing DHA omega-3 at 0.32% of milk fat (plus AA) as compared to the unsupplemented formula. Further, the DHA group had significantly higher Verbal IQ Scores (by 9%) and higher Full-scale IQ Scores (by 9%) than the group fed the control formula. The Performance and Full-scale IQ Scores for the children from the DHA (formula-fed) group were not different from the breast-fed group. However, Verbal IQ Scores were better (by 6% overall) in the breast-fed children relative to the group that was supplemented with PUFA.
Dr. Holub’s Comments:

The present results as reported at the ISSFAL conference by Dr. Hoffman and his research team support the importance of ensuring that infant feedings include a source of long-chain omega-3 fatty acids. While the emphasis has been on DHA because of its high content in the cells of the brain and retina where it serves as a 'physiologically-essential nutrient', AA is also included in infant formula (and is naturally present in breast milk) since it too is abundant in the brain. The present results on the Verbal IQ assessments also support the preferred feeding of infants with breast-milk where possible. It should be pointed out that an average daily intake during lactation of DHA omega-3 at 200 – 300 mg/day can be expected to provide a breast milk level of DHA of at least 0.33 % of milk fat in most mothers.