

Research Highlights: The Importance of DHA in Infant Development

Docosahexaenoic acid, DHA, is a long chain omega-3 fatty acid that is found throughout the body. More specifically, DHA is an important structural fat in the brain and eyes and is a key component of the heart. DHA, a natural component of breast milk, is important for brain and eye development and function. Below are research highlights from studies examining the role of DHA in infant health and development. (Please refer to the list of references.)

- DHA is the most abundant omega-3 fatty acid in the brain and the retina of the eye, representing about 97% and 93% of all omega-3 fatty acids in the brain and eyes, respectively, and is important for healthy visual and mental development throughout infancy.¹⁻⁴
- The brain grows rapidly during the last months of gestation and throughout the first years of life. This growth spurt is a time of rapid DHA accumulation in the brain.⁵⁻⁷
- An infant's ability to produce DHA may be inconsistent and inefficient. Infant blood DHA levels decrease significantly following birth unless the infant receives DHA either through breast milk or supplemented infant formula.⁸⁻¹⁵
- Breast milk is the optimal method for infant feeding. Breast milk always contains the long chain polyunsaturated fatty acids, DHA and arachidonic acid (ARA*).¹⁶ Recommendations have been made by several expert groups for infant formulas containing DHA and ARA.¹⁷⁻²²
- Infants rapidly accumulate DHA from their mother during the last months of gestation. Infants born prematurely do not have time to accumulate DHA to the same level as their full-term counterparts. When fed formula supplemented with DHA and ARA, preterm infants achieved normal growth in terms of weight, length and head circumference,²³⁻²⁶ and showed improved visual and mental development compared to the infants fed formula not supplemented with DHA and ARA.²⁶
- Many studies have demonstrated improved mental development for infants fed DHA- and ARA-supplemented formula compared to those receiving unsupplemented formula. These benefits extend well beyond the period of supplementation and continue into childhood.²⁷⁻²⁹
- Term infants fed DHA(0.36%)- and ARA (0.72%)- supplemented formula scored 7 points higher on the Bayley Mental Development Index at 18 months than those fed unsupplemented formula.²⁷ In a follow-up study of those same children at age 4, visual acuity and verbal IQ scores were higher in those children who had received supplemented formula compared with those who received formula lacking DHA and ARA.²⁹
- Infants who were breastfed and then weaned to formula supplemented with DHA and ARA demonstrated more mature visual acuity than those breast-fed infants weaned to non-supplemented formula.³⁰⁻³¹
- Infants fed DHA-supplemented formula exhibited better visual acuity than that of the non-supplemented infants (equivalent to 1.5 lines on the eye chart), and similar to that of breast-fed infants.³²⁻³⁴

- One study showed that infants fed formula supplemented with DHA (0.36%) and ARA (0.72%) had fewer episodes of bronchiolitis and bronchitis at age 5, 7, and 9 months compared to infants fed non-supplemented formula.³⁵
- Infants fed formula supplemented with DHA and ARA had significantly lower blood pressure compared to infants fed non-supplemented formula, similar to that of breast-fed infants. Because blood pressure tends to track from childhood into adult life, it has been suggested that early intake of DHA and ARA may reduce the risk of cardiovascular disease later in life.³⁶
- Visual Evoked Potential/Visual Acuity.³⁷

*Arachidonic acid (ARA) is an omega-6 fatty acid that is added with DHA to infant formulas.



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