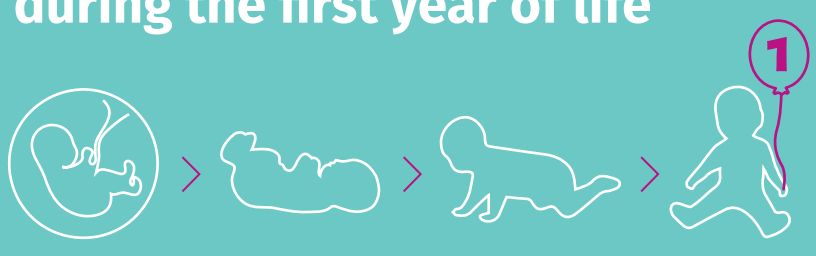
DHA and ARA in early life: key scientific facts

Docosahexaenoic acid (DHA) and **arachidonic acid (ARA)** are the primary long chain **omega-3 and omega-6 fatty acids (LCPUFAs),** found naturally in breast milk

Both are well known to support infant health during the first year of life



This period represents a unique window of opportunity, where nutrition can help **shape a healthy future**[1]

Did you know?

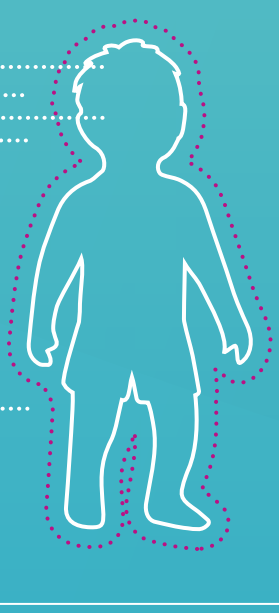
LCPUFAs, including **DHA** and **ARA,** are amongst the **most researched nutrients in the world**

DHA is the main omega-3 fatty acid in the brain, representing **97%** of the total omega-3 fats there[2]

ARA is the primary omega-6 fatty acid in the brain, representing **48%** of the omega-6 fats there[3]

Recent findings suggest **DHA** and **ARA** have **positive effects on a child's development** when provided together and in efficacious levels during infancy, supporting:

- Brain and cognitive development[4,5,6,7]
- Mental adaptability and problem solving[8]
- Visual development[9]
- Attention and information processing[10]
- A healthy immune system[11]



ARA may additionally support **bone formation, blood flow** and **blood vessel function**[12]

Effects of **DHA** and **ARA** intake during the first year of life are **observed to last through to nine years of age**[13]

However, **DHA** and **ARA** intakes across both **developed and developing countries decrease during weaning,** as complementary weaning foods are often a **poor source of these key fatty acids**[14]

Infants that receive **sufficient intake of DHA** and **ARA** are setting a **foundation for a healthy life** as these key fatty acids support **healthy growth and development, helping to safeguard their future**[15]

Learn more about the importance of DHA and ARA during early life

1. Victora CG. 'Nutrition in early life: a global priority', *Lancet*, vol. 374, no. 9696, pg. 1123-1125, 2009.
2. Martinez M., 'Tissue levels of polyunsaturated fatty acids during early human development', *J Pediatr,* vol. 120, no. 4, pg. S129-1238, 1992.
3. Ibid.
4. EFSA NDA Panel (EFSA Panel on Dietetic Products, Nutrition and Allergies), 'Scientific Opinion on the substantiation of a health claim related to DHA and contribution to normal brain development pursuant to Article 14 of Regulation (EC) No 1924/2006', *EFSA Journal,* vol. 12 no. 10, pg. 3840, 2014.
5. Colombo J. et al., 'Long-term effects of LCPUFA supplementation on childhood cognitive outcomes', *Am J Clin Nutr.,* vol. 98, no. 2, pg. 403-12, 2013.
6. Colombo J. et al., 'Docosahexaenoic acid (DHA) and arachidonic acid (ARA) balance in developmental outcomes', *Prostaglandins Leukot Essent Fatty Acids,* vol. 121, pg. 52-56, 2017.
7. Birch E. et al., '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' *Am J Clin Nutr.,* vol. 91, no.4, pg. 848–859, 2010.
8. Op. Cit. (Colombo 2017).
9. Lien E. L. et al., 'DHA and ARA addition to infant formula: current status and future research directions', *Prostaglandins Leukot Essent Fatty Acids,* vol. 128, pg. 26-40, 2018.
10. Willatts P. et al., 'Effects of nutrition on the development of higher-order cognition', *Nestle Nutr Inst Workshop Ser.,* vol. 89, pg. 175-184, 2018.
11. Richard C. et al., 'Evidence for the essentiality of arachidonic and docosahexaenoic acid in the postnatal maternal and infant diet for the development of the infant's immune system early in life', *Appl Physiol Nutr Metab.,* vol. 41, no. 5, pg. 461-75, 2016.
12. Hadley B. et al., 'The essentiality of arachidonic acid in infant development', *Nutrients,* vol. 8, no. 4, pg. 216, 2016.
13. Lepping R. J. et al., 'Long-chain polyunsaturated fatty acid supplementation in the first year of life affects brain function, structure and metabolism at nine years of age', *Dev Psychobiol.,* 2018.
14. Forsyth S. et al., 'Dietary intakes of arachidonic acid and docosahexaenoic acids in early life – with a special focus on complementary feeding in developing countries', *Ann Nutr Metab.,* vol. 70, no. 3, pg. 217-227, 2017.
15. Koletzko B. et al., 'Should formula for infants provide arachidonic acid along with DHA? A position paper of the European Academy of Paediatrics and the Child Health Foundation', *The American Journal of Clinical Nutrition,* 2019.