

Breastmilk is complex and unique^{1,2}



Evolved to support growth

Breastfeeding is best for all infants from birth to achieve optimal growth, development and health.³

A dynamic, bioactive fluid

More than food, it contains hormones, enzymes, antimicrobial agents, and prebiotics that protect immunity, develop the gut microbiome and support brain development.^{12,4,5}

Beyond imitation

Each mother creates a unique, complex and dynamic blend.¹²



HMOs: Nature's prebiotics

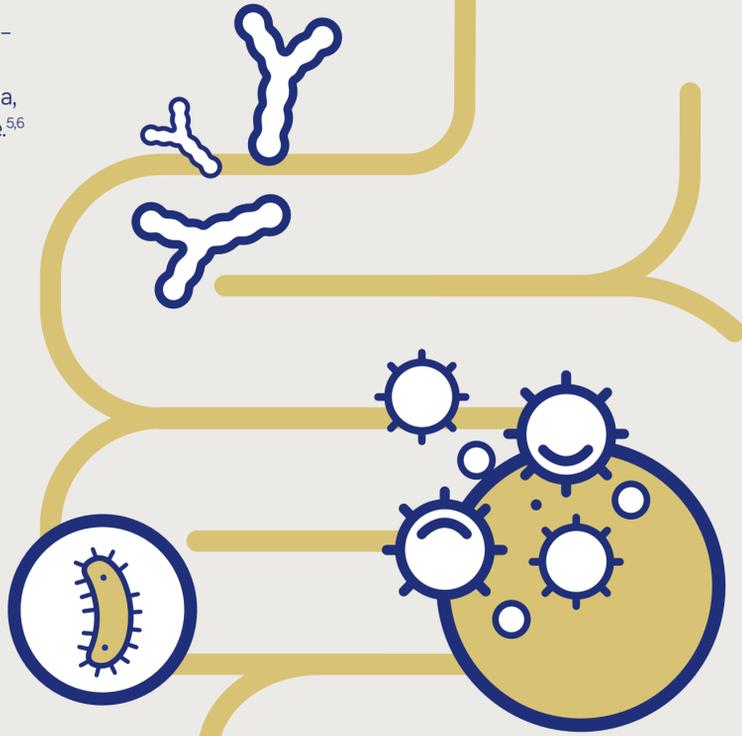
Human milk oligosaccharides (HMOs) – the third most abundant component of breastmilk – feed beneficial gut bacteria, helping establish a healthy microbiome.^{5,6}



While some HMO structures can be made by scientists, their full diversity can't be replicated.⁷

2'-FL – the most dominant HMO in breastmilk

2'-FL (2'Fucosyllactose) has been suggested to have a role in the development of the immune system in babies.⁸



GOS and FOS:

A prebiotic blend closely resembling the structure of HMOs found in breastmilk

Galacto-oligosaccharides (GOS) and fructo-oligosaccharides (FOS), when added to infant formula in a 9:1 short- to long-chain ratio, can support a healthy gut microbiota. By nourishing beneficial bacteria they suppress harmful microbes, and reduce infection risk.⁸⁻¹¹

2'-FL combined with scGOS/lcFOS (9:1) shows promising immune benefits.⁸

Lipids

Breastmilk also contains fats that do more than fuel growth – they support brain and nervous system development.^{4,12-15}

Beta-palmitate in breastmilk improves calcium and fatty acid absorption helping to produce softer stools in infants.^{12,16}



Breastmilk also contains phospholipids – specialised fats essential for building cell membranes and linked to cognitive development.^{13-15,17-19}

[Click here](#) to watch 3 short videos on breastmilk and its composition

Understanding breastmilk is a journey that never truly ends.

And because science doesn't stand still, neither do we.



For over 50 years, we've gone further – publishing 90+ scientific papers and pioneering new discoveries to advance infant nutrition.



That commitment lives on in Aptamil, with ingredients like our 9:1 GOS/FOS prebiotic blend, beta-palmitate, and phospholipids.*

Because when it comes to nourishing babies, there's always more we can learn, and always more we can do.

Your Care, Our Science



[Learn more](#) about the Aptamil range

*Aptamil Advanced contains beta-palmitate, phospholipids and our most advanced oligosaccharide combination of 9:1 GOS/FOS and 2'FL. Aptamil contains our 9:1 GOS/FOS oligosaccharide blend.

References: 1. Yi, et al. *Nutrients*. 2021;13(9):3094. 2. Lokossou, et al. *Front Immunol*. 2022;13:849012. 3. World Health Organisation. Breastfeeding. Available at: <https://www.who.int/health-topics/breastfeeding> Accessed: October 2025. 4. Duale, et al. *Front Nutr*. 2022;8:800927. 5. Plaza-Diaz, et al. *Nutrients*. 2018;10(8):1038. 6. Walsh, et al. *J Funct Foods*. 2020;72:104074. 7. Bych, et al. *Curr Opin Biotech*. 2019;(56): 130-137. 8. Salminen, et al. *Nutrients*. 2020;12(7):1952. 9. Knol, et al. *J Pediatr Gastroenterol Nutr*. 2005;40(1):36-42. 10. Moro, et al. *J Pediatr Gastroenterol Nutr*. 2002;34:291-5. 11. Bruzzese, et al. *Clin Nutr*. 2009;28(2):156-61. 12. Looijesteijn, et al. *BMC Nutr*. 2022;8(1):93. 13. Delplanque, et al. *J Pediatr Gastroenterol Nutr*. 2015;61(1):8-17. 14. Cilla, et al. *Crit Rev Food Sci Nutr*. 2016;56(11):1880-92. 15. Yang, et al. *Nutrients*. 2022;14(8):1539. 16. Bar-Yoseph, et al. *J Pediatr Gastroenterol Nutr*. 2016;62(2):341-7. 17. Chai, et al. *Food Sci Anim Resour*. 2022;42(3):351-71. 18. Contarini, et al. *Int J Mol Sci*. 2013;14(2):2808-31. 19. Restuccia, et al. *Food Rev Int*. 2012;28(1):1-46.

IMPORTANT NOTICE: Breastfeeding is best. Infant milk is suitable from birth, when infants are not breastfed and should only be used on the advice of a doctor, dietitian, pharmacist, or other professional responsible for maternal and child care.