

LOW HMO DIVERSITY, HIGH 2'-FL CONCENTRATION, AND A MOTHER'S METABOLIC STATUS



2'-fucosyllactose (2'-FL) is a human milk oligosaccharide (HMO), a complex sugar uniquely found in breastmilk. HMOs like 2'-FL serve as prebiotics, feeding specific species of beneficial bacteria in the microbiome during a critical time of diversification of the human microbiome - in the days, weeks, months, and years following birth.

A new study found that a mother's metabolic status, specifically overweight or obesity status, may influence the diversity of HMO composition in her breastmilk, which may in turn affect the growth of a newborn through infancy and early childhood.

Researchers from the new study analyzed breastmilk samples and noted the presence of 2'-FL and another HMO, lacto-N-neo-tetraose (LNnT), out of about 150 different types of HMOs. Researchers also observed reduced diversity of breastmilk HMOs in two different populations: mothers of taller and heavier infants and children as well as mothers who were overweight and obese. In both of these populations with reduced HMO diversity, samples included higher concentrations of 2'-FL and lower concentrations of LNnT.

Despite the connection drawn between 2'-FL concentration in breastmilk and early childhood growth, researchers from the study have yet to demonstrate and confirm causation between increased 2'-FL concentrations and beneficial early growth. However, the current findings hold promise that 2'-FL HMOs have beneficial qualities, on infant growth and potentially in other arenas as well.

Learn more about 2'FL, HMOs, and the importance of a healthy microbiome on [WholisticMatters.com](https://www.wholisticmatters.com):

- What is 2'-FL, and how is it important for Bifidobacterium in the microbiome?
- Understanding prebiotics, probiotics, and the microbiome
- Learning about common digestive disorders
- How do lifestyle factors affect GI health?

STUDY DETAILS

Lagström H, Rautava S, Ollila H, Kaljonen A, Turta O, Mäkelä J, Yonemitsu C, Gupta J, and Bode L. Associations between human milk oligosaccharides and growth in infancy and early childhood. *The American Journal of Clinical Nutrition* DOI: 10.1093/ajcn/nqaa010 (2020)

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