HUMAN MILK OLIGOSACCHARIDES

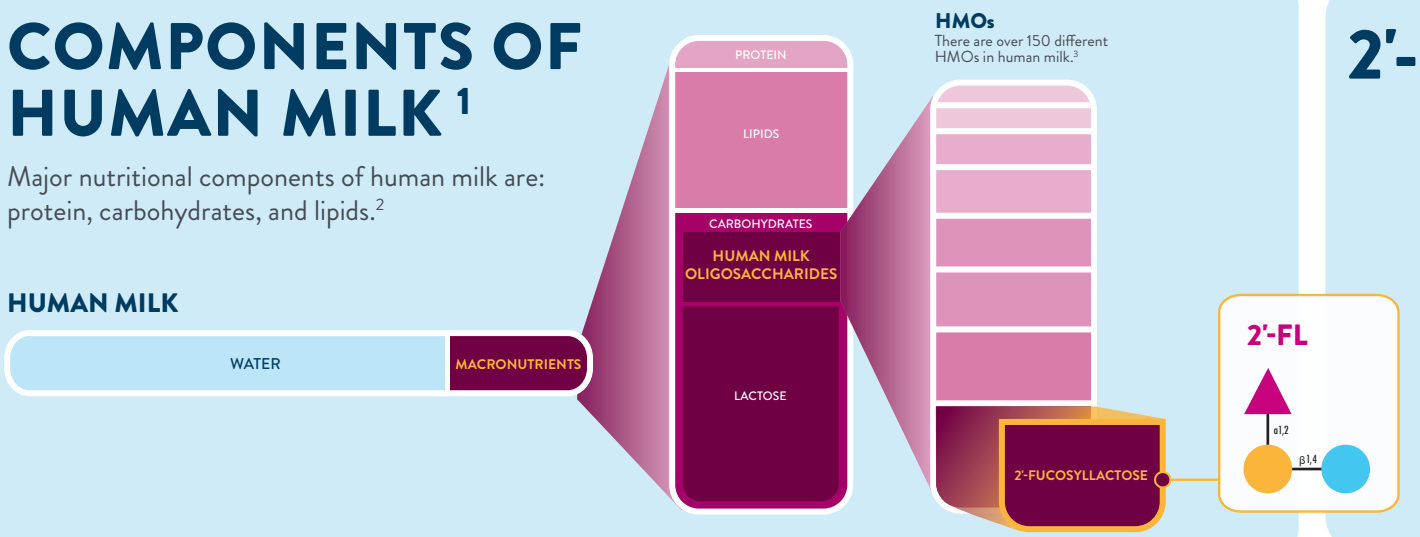
NOURISHING THE INFANT'S DEVELOPING IMMUNE SYSTEM

WHAT ARE HMOs?

Unique prebiotics found naturally in human milk | Food for beneficial bacteria in the infant's gut | 3rd most abundant solid component of human milk

COMPONENTS OF HUMAN MILK [1]

Major nutritional components of human milk are: protein, carbohydrates, and lipids.[2]



2'-FL HMO

- Approximately 75-80% of mothers secrete 2'-FL HMO in their breast milk.[4,5]
- 2'-FL added to formula has the identical structure as 2'-FL in human milk.[6]
- Prebiotics—food for beneficial bacteria.[7]
- First clinical study with 2'-FL added to infant formula narrows the gap between human milk & infant formula.[8]

EARLY IMMUNE DEVELOPMENT

70%

of the immune system is in the digestive tract,[9] and prebiotics support colonization of the gut which helps support immune system development.[10]

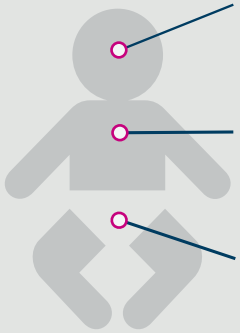
BENEFITS OF 2'-FL HMO EXPAND BEYOND THE GUT TO SUPPORT THE IMMUNE SYSTEM.

- A small portion of 2'-FL HMO ingested are absorbed in the infant's intestine and reach the systemic circulation.[11-13]
- In a clinical study, 2'-FL HMO was shown to lower levels of multiple inflammatory cytokines to be more like levels in breastfed infants.[8]
- In a clinical study of infants fed formula with 2'-FL HMO,[8] two markers of immune function associated with the severity of a respiratory infection (RSV) were more like breastfed infants than infants fed the same formula without 2'-FL HMO.*

*Using cells from infants' blood that were challenged with RSV ex vivo.

PREBIOTICS & MORE

Emerging research† indicates potential multifunctional benefits:



COGNITION [14-16]
- Learning & memory
- Long-term potentiation
- Brain molecular markers

IMMUNITY [6,8,17-21]
- Pathogen receptor decoy
- Reduced symptoms of food allergy
- Immune modulation

GI TOLERANCE [11, 22-26]
- Prebiotic
- Gut motility
- NEC

†Most studies were animal-based.

SUPPORTING EVIDENCE‡

30 STUDIES

provide preclinical and clinical evidence identifying the role of HMOs in health & development. (2000-2017)

‡Refer to references.

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