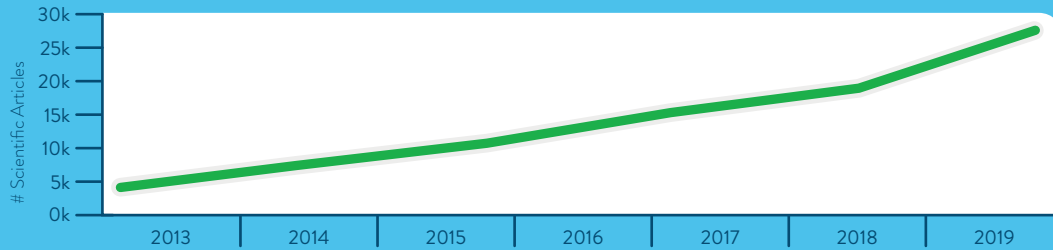


THE MICROBIOME AND THE PRETERM INFANT: A PARADIGM SHIFT

THE GUT MICROBIOTA INFLUENCES OVERALL HEALTH

The Growth of Microbiome Research

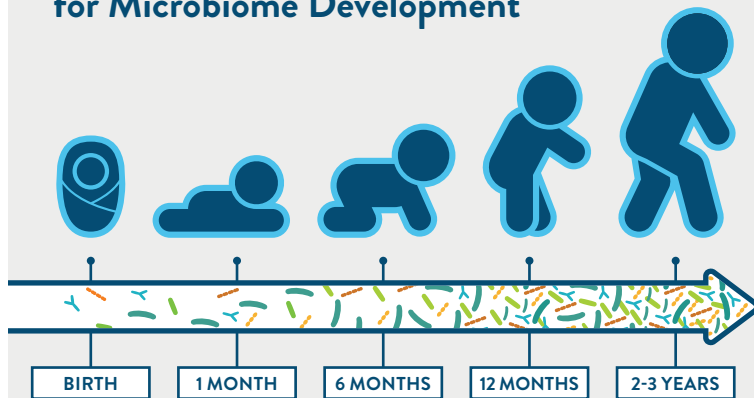


> **30,000**

scientific articles have been published on the microbiome, with more than half published in recent years.¹

Beneficial microbial colonization during infancy can lay the foundation for a lifetime of good health.²

Infancy Is a Critical Window for Microbiome Development

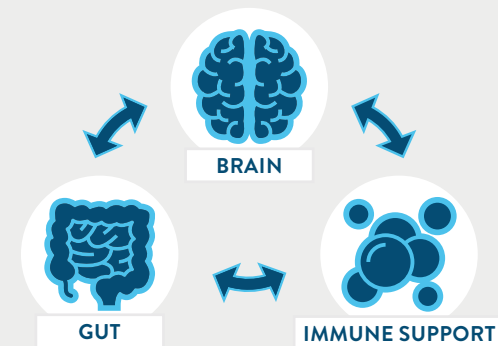


Early Microbial Colonization Is Influenced by:³

- Delivery method
- Type of feeding
- Environmental factors
- Antibiotic use

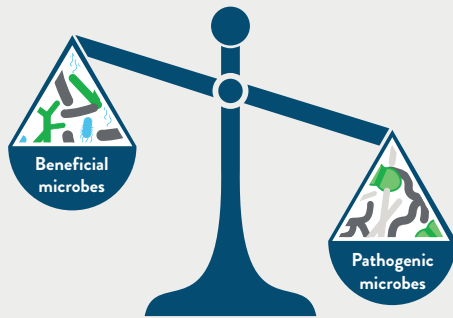
The Microbiome Shapes Health Outcomes

Favorable microbial colonization plays a critical role in the development and interaction of key health systems:⁴



THE MICROBIOME AND THE PRETERM INFANT: A PARADIGM SHIFT

DYSBIOSIS IN THE NICU



DYSBIOSIS:
The abnormal colonization or the imbalance of microbes.⁵

PRETERM INFANTS ARE AT ELEVATED RISK FOR DYSBIOSIS.

Preterm infants face challenges that can adversely impact the development of a diverse and healthy microbiome.



Gut immaturity



Use of antibiotics and other medications



Use of nonhuman milk feeding products

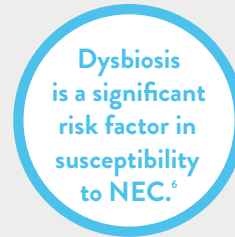


Delayed enteral feeding



Hygiene practices used in the NICU

Gut dysbiosis in infants is likely to increase risk of infections and inflammatory processes.



is a leading cause of morbidity and mortality among preterm infants worldwide.⁷



CLINICAL STRATEGIES TO PROMOTE A MORE FAVORABLE MICROBIOME IN THE PRETERM INFANT, INCLUDE:

- Use of human milk
- Use of probiotics
- Prudent use of antibiotics^{8,9}



CONSIDER THE RISK FACTORS FOR DYSBIOSIS IN DAILY CARE PLANNING OF YOUR NICU PATIENTS.

NICU Daily Rounds

- ✓ Neurological
- ✓ Cardiovascular
- ✓ Respiratory
- ✓ Nutrition
- ✓ GI/Microbiome

To learn more about the neonatal microbiome, visit: anhi.org/resources/knowledge-hub

(1) National Library of Medicine. Microbiome search results. PubMed.gov website. <https://pubmed.ncbi.nlm.nih.gov/?term=microbiome&filter=simsearch2.ffrt&filter=simsearch3.ff&filter=years.2013-2019>. Accessed July 20, 2020. | (2) Makino H. *Biosci Microbiota Food Health*. 2018;37:79-85. | (3) Baranowski JR, Claud EC. *Adv Exp Med Biol*. 2019. | (4) Singh A, Mittal M. *J Matern Fetal Neonatal Med*. 2019;1-8. | (5) Denning NL, Prince JM. *Mol Med*. 2018;24(1):4. (6) Underwood MA, et al. *Pediatr Res*. 2014;76(4):326-33. | (7) Nino DF, Sodhi CP, Hackam DJ. *Nat Rev Gastroenterol Hepatol*. 2016;13(10):590-600. | (8) Groer MW, Luciano AA, et al. *Microbiome*. 2014;2:38. | (9) Dibartolomeo ME, Claud EC. *Clin Ther*. 2016;38(4):733-39.