



Gut *Bacteroides* Linked to Improved Brain Function and Behavior in Late Infancy

Research overview

The association between microorganisms in the gut (or the “gut microbiome”) and early neurodevelopment in infants is well established. However, how it occurs over different stages of infancy is mostly unknown. To address the knowledge gap, a study was conducted to profile the gut bacteria of 405 children aged 1 year and assess their brain functions including cognitive, linguistic, and motor abilities when the infants were 2 years old. The findings revealed abundant *Bacteroides* species, along with *Proteobacteria* and *Firmicutes*, in most infant guts. One-year-old infants with a *Bacteroides*-enriched gut exhibited higher cognitive and language abilities when they were 2 years old. The effect was particularly prominent in 2-year-old male infants, indicating a sex-specific association. The infants' gut had higher levels of sphingolipids (a short-chain fatty acid produced by *Bacteroides*), further indicating the predominance of this genus, which the researchers believe is caused by reduced competition from other gut bacterial species.

Why is it important?

Neurodevelopmental disorders or disabilities that impair the learning, language, and memory functions in children are attracting global attention. Lately, the gut microbiome has been linked to changes in brain function and behavior. This study offers vital insights into the age-specific effects of this association in infants, which could help inform pediatric health research and practice.

Key takeaway

This study provides insights into the link between early brain development and *Bacteroides* in 2-year-old infants. Future studies could help confirm these outcomes in different populations and establish the impact of the gut microbiome during late infancy on early brain development.



Link to the original article:

<https://www.tandfonline.com/doi/full/10.1080/19490976.2021.1930875>

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