

Lay summary - Influence of early life microbiome maturation on head circumference growth and neurodevelopment in premature children

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Premature infants are at higher risk of neurodevelopmental disorders, impacting cognition and behavior, causing significant healthcare burdens in Canada and globally. The community of microbes inhabiting the intestines, also known as the gut microbiome, plays a fundamental role in cognition and behavior. Microbiome maturation in premature infants has been linked to improved head circumference growth, a marker of neurodevelopment. We aim to analyze existing data from the BLOOM Study, a cohort of premature infants, to understand the relationship between microbiome maturation, head circumference growth, and neurodevelopment at ages 2 and 3 using advanced statistical models. The study's success could lead to new microbiome-based strategies for detecting and preventing neurodevelopmental disorders in premature infants, benefiting thousands of at-risk children.