

Special Issue

Life Course Microbiomics: How Early Microbial, Nutritional, and Psychosocial Environments Shape Mental and Cognitive Development

Message from the Guest Editors

The perinatal period and early childhood represent critical windows during which the maternal and infant microbiomes undergo profound shifts with long-lasting implications for health. Growing evidence highlights the dynamic interplay between microbial communities, maternal nutrition and lifestyle, psychosocial and mental health factors, and early neurodevelopment. Yet, the mechanisms linking these domains across pregnancy, the postpartum period, and child development remain incompletely understood. This Special Issue aims to bring together cutting-edge research that advances our understanding of the maternal–infant microbiome continuum and its relevance to psychological, cognitive, and developmental outcomes. We welcome contributions that explore how diet, nutrients, stress, physical activity, environmental exposures, and other modifiable factors shape maternal or child microbiome trajectories; how microbial and metabolic pathways interact with maternal mental health; how biological networks of mother and child may be linked; and how early-life microbial patterns relate to cognitive development, emotional regulation, and child wellbeing.

Guest Editors

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About the Journal

Message from the Editor-in-Chief

"Microorganism" merges the idea of the very small with the idea of the evolving reproducing organism is a unifying principle for the discipline of microbiology. Our journal recognizes the broadly diverse yet connected nature of microorganisms and provides an advanced publishing forum for original articles from scientists involved in high-quality basic and applied research on any prokaryotic or eukaryotic microorganism, and for research on the ecology, genomics and evolution of microbial communities as well as that exploring cultured microorganisms in the laboratory.

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manuscripts are peer-reviewed and a first decision is provided to authors approximately 20 days after submission; acceptance to publication is undertaken in 2.9 days (median values for papers published in this journal in the second half of 2025).