The Role of Microbiota in Gut-Brain Axis Regulation

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Abstract. This research explores the significant role of gut microbiota in the regulation of the gut-brain axis, a bidirectional communication network between the gastrointestinal tract and the brain. Recent studies suggest that the gut microbiome can influence neurological function and behavior. This article reviews the current understanding of these interactions and their implications for treating neurological disorders. By examining the microbiota's role, this paper aims to uncover potential therapeutic targets for improving mental health outcomes, thereby opening new avenues for clinical treatment strategies.

Keywords: microbiota, gut-brain, neuro, therapy, mental

Introduction: The gut-brain axis represents a complex communication network that links the gastrointestinal tract to the central nervous system, playing a crucial role in maintaining physiological balance. The gut microbiota, a diverse and dynamic community of microorganisms in the intestines, is an integral part of this axis, influencing brain function and behavior. Recent advances in microbiome research have highlighted its potential impact on neurological conditions, including anxiety, depression, and neurodegenerative diseases. This paper seeks to elucidate the mechanisms underlying gut-brain interactions and explore how modulation of the microbiota could offer new therapeutic opportunities. By enhancing our understanding of these intricate relationships, we aim to provide insights into innovative treatments for neurological disorders, potentially transforming clinical practice.

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