

## Documents

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**Microbiome Dysbiosis in Depression: A Narrative Review**

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**Abstract**

The comprehensive exploration of the microbial composition of the gut and its role in depression underscores a complex interplay involving alterations in gut microbiome, immune pathways, and inflammatory control. Studies reveal potential biomarkers and therapeutic targets linked to depression, with particular bacterial genera correlated with the severity of depressive symptoms. The dysregulation extends to disruptions in metabolic pathways and functions of bacterial proteins within the gut, contributing to intestinal barrier dysfunction and increased gut permeability. Notably, alterations in microbial composition are observed in various depressive conditions, including major depressive disorder (MDD), post-stroke depression (PSD), and depression during neoadjuvant cancer treatment. The influence of the gut microbiome on the central nervous system and the bidirectional relationship between depression and microbial changes are highlighted. Regulatory interventions, including antidepressants and probiotics, show promise in modulating the gut microbiome and alleviating depressive symptoms. The combination of probiotics with antidepressants emerges as a potential strategy for inducing a balanced microbiome. However, a lack of consensus exists regarding specific bacterial taxa associated with depression, emphasizing the need for further research to refine the therapeutic approaches for managing depression and related mood disorders. This review aims to explore the relationship between microbiome dysbiosis and depression, highlighting the role of dysbiosis as a potential contributing factor to depressive symptoms. © (2024), (International Islamic University Malaysia). All Rights Reserved.

**Author Keywords**

Depression; Gut-brain axis; Microbiome; Probiotic

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