

Should probiotics be administered as an adjunctive treatment along with antidepressants for major depressive disorder?

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Madam, Major depressive disorder (MDD) is a significant factor in global disability rates and contributes significantly to the overall disease burden worldwide. According to estimates, approximately 3.8% of the global population is impacted, with a prevalence of 5.0% among adults and 5.7% among adults aged 60 years and above.¹ It is also the leading cause of suicide among individuals. While the administration of antidepressants is the widely known and successful treatment for this mental disorder, recent research and accumulating evidence have demonstrated that probiotics also function effectively in controlling anxiety and depression.

Probiotics that provide psychological benefits are now referred to as psychobiotics. Psychobiotics are defined as live organisms that, when consumed in sufficient quantities, produce unexpected health benefits in individuals with psychiatric disorders.² Around 30% of patients with major depressive disorder (MDD) do not respond to traditional antidepressant medications targeting monoamine pathways, indicating the involvement of other biological mechanisms in the development of MDD.³ One particularly promising hypothesis regarding the pathogenesis of MDD is the dysfunction of the gut-brain axis (GBA), with the gut microbiota playing a crucial role.⁴ Numerous studies have investigated the impact of probiotics on stress resilience. The recent meta-analysis discovered a significant finding: when probiotics were combined with antidepressants, they showed a remarkable reduction in depressive symptoms. However, when used alone, probiotics exhibited a less impact on alleviating depressive symptoms. This highlights the crucial role of combining probiotics with standard treatments for a more substantial effect on managing depression.⁵

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These impressive results elucidate the advantages of administering probiotic strains in individuals suffering from mental health disorders, specifically MDD, by effectively addressing the imbalance within the gut-brain axis (GBA) and suppressing stress-induced activation of biological pathways involved in psychological disturbances. Recurrent evidence has proven that gut microbiota play a significant role in neuronal homeostasis and any imbalance may contribute as a factor in the underlying mechanism of the pathogenesis of MDD.

Henceforth, further research should be encouraged in order to develop promising microbiome-based therapeutics for MDD, and physicians should consider administering probiotics as an adjunctive treatment for depression alongside antidepressants. Moreover, the importance of probiotics should be thoroughly studied, and medical doctors should raise awareness of the significance of the gut-brain axis and associated biological pathways, which play a major role in an individual's mental health.

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References

1. Institute for Health Metrics and Evaluation (IHME). Global Health Data Exchange (GHDx). [Online] 2019 [Cited 2021 May 01]. Available from URL: <https://ghdx.healthdata.org/>
2. Dinan TG, Stanton C, Cryan JF. Psychobiotics: a novel class of psychotropic. *Biol Psychiatry* 2013;74:720-6. doi: 10.1016/j.biopsych.2013.05.001.
3. Berlim MT, Turecki G. What is the meaning of treatment resistant/refractory major depression (TRD)? A systematic review of current randomized trials. *Eur Neuropsychopharmacol* 2007;17:696-707. doi: 10.1016/j.euroneuro.2007.03.009.
4. Liang S, Wu X, Hu X, Wang T, Jin F. Recognizing Depression from the Microbiota-Gut-Brain Axis. *Int J Mol Sci* 2018;19:1592. doi: 10.3390/ijms19061592.
5. Nikolova VL, Cleare AJ, Young AH, Stone JM. Updated Review and Meta-Analysis of Probiotics for the Treatment of Clinical Depression: Adjunctive vs. Stand-Alone Treatment. *J Clin Med* 2021;10:647. doi: 10.3390/jcm10040647.