

## GUT MICROBIOME AND DEPRESSION: HOW MICROBES AFFECT THE WAY WE THINK.

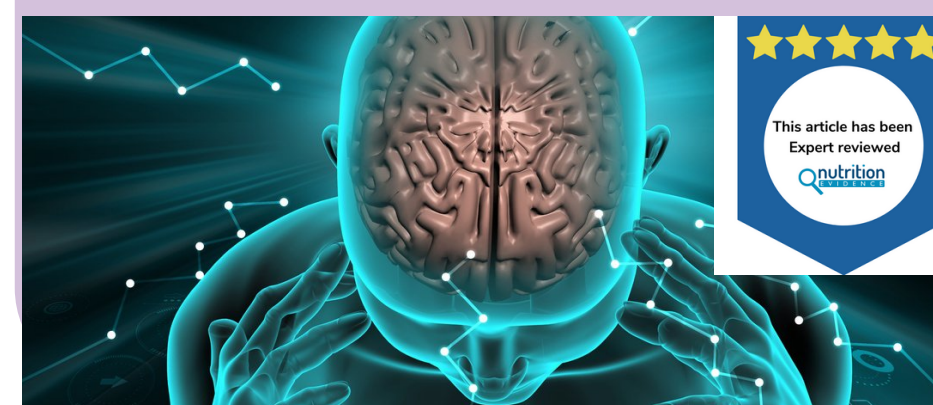
Limbana, T ; Khan, F ; Eskander, N  
Cureus. 2020;12(8):e9966

Recent findings have shown that a healthy gut microflora transmits signals to the brain through various pathways, namely the gut-brain axis. With the gut and brain working in a bidirectional relationship, emerging research suggests this could potentially impact stress, anxiety, depression and cognition. Therefore the aim of this review was to determine the role of the gut microbiome in mental health and depression. A total of 26 articles were reviewed and based on these articles, a strong link exists between the gut microbiome and its impact on mental health. Additionally, the literature supports the notion that the gut-brain axis serves as an essential pathway. Based on these findings, the authors agree there is a strong association between the gut microbiome and mental health, while also acknowledging the need to establish a causal link between these two entities. The authors conclude that the microbiome is a promising approach when considering the prevention, treatment and management of mental health diseases in the future.

## PROBIOTIC LACTOBACILLUS PLANTARUM 299V DECREASES KYNURENINE CONCENTRATION AND IMPROVES COGNITIVE FUNCTIONS IN PATIENTS WITH MAJOR DEPRESSION: A DOUBLE-BLIND, RANDOMIZED, PLACEBO CONTROLLED STUDY.

Rudzki, L ; Ostrowska, L ; Pawlak, D ; Matus, A ; Pawlak, K ; Waszkiewicz, N ; Szulc, A  
Psychoneuroendocrinology. 2019;100:213-222

This study sets out to explore the psychobiotic potential of the probiotic strain Lactobacillus Plantarum 299v (LP299v), a common single strain probiotic supplement. Depression symptoms, cognitive function and biochemical parameters were assessed in 79 patients with MDD undergoing conventional treatment with SSRIs in this double-blind placebo-controlled trial over a period of 8 weeks. Various outcome measures were used to assess the severity of depression and cognitive function, and various biochemical parameters such as tryptophan, kynurenine and cortisol were monitored. Results showed there was a significant decrease in kynurenine concentration and an improvement in cognitive function in the LP299v group.



## GUT FEELINGS: A RANDOMISED, TRIPLE-BLIND, PLACEBO-CONTROLLED TRIAL OF PROBIOTICS FOR DEPRESSIVE SYMPTOMS.

Chahwan, B ; Kwan, S ; Isik, A ; van Hemert, S ; Burke, C ; Roberts, L  
Journal of affective disorders. 2019;253:317-326

Depression is a debilitating psychiatric disorder that is the leading cause of disability world-wide. Multiple causes of depression have been identified, including genetic, neurological, inflammatory, personality, cognitive, and environmental factors. The aim of this study was to investigate the effectiveness of the multispecies probiotic Ecologic® Barrier for reducing symptoms in adults with mild to severe levels of depression. The study was a triple-blinded parallel, placebo-controlled randomised clinical trial. Participants were randomly allocated into two groups; probiotic and placebo. 71 participants with depressive symptoms were recruited and allocated sequentially over 12 months. Results indicate that all participants across both probiotic and placebo groups exhibited a reduction in depressive symptoms over the time-period of the trial. Thus, the routine involved with daily preparation and consumption of the probiotic and scheduled appointments, as well as involvement in these behaviours with the aim of seeking improvement in depressive symptoms had positive impacts on mood, irrespective of whether the probiotic or placebo was consumed. Authors conclude that their findings offer evidence to indicate that probiotic consumption can exert change on cognitive patterns associated with depression.



## UPDATED REVIEW AND META-ANALYSIS OF PROBIOTICS FOR THE TREATMENT OF CLINICAL DEPRESSION: ADJUNCTIVE VS. STAND-ALONE TREATMENT.

Nikolova, VL ; Cleare, AJ ; Young, AH ; Stone, JM  
Journal of clinical medicine. 2021;10(4)

Major depressive disorder is a common, complex, and heterogeneous illness that is characterized by persistent low mood and anhedonia, and a combination of sleep disturbances, changes in appetite, feelings of worthlessness or guilt, poor concentration, and suicidal ideation. The aim of this study was to identify and evaluate all current evidence from randomised controlled trials on the efficacy of probiotics in reducing depressive symptoms among people with clinical depression. This study is a review and meta-analysis of randomised controlled trials which included seven studies for qualitative and quantitative analysis. Results demonstrate that probiotics significantly reduce depressive symptoms after eight weeks of use, but only when used in addition to an approved antidepressant. Authors conclude that their findings support the clinical use of probiotics in depressed populations and provides an insight into the mode of administration more likely to yield antidepressant effects.

