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### Effects of probiotics on mood disorders

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The human microbiome has been identified as an ecosystem of microbes inside the gut that is as crucial as our own cells are when it comes to regulating physiology, immunity to infectious disease, metabolic activity, and even behavior. The microbiome is able to communicate with the nervous, endocrine, immune and digestive systems through the gut-brain axis. Dysbiosis of the microbiome and dysfunction of the gut-brain axis has been implicated in the etiology of a number of gastrointestinal, psychiatric or mood, and eating disorders. The contribution of this communication between the enteric nervous system and the central nervous system can also be suggested by the high rates of comorbidity between gastrointestinal and psychiatric illnesses. For example, mood disorders affect more than 50% of patients with irritable bowel syndrome. In addition, according to the National Association of Anorexia Nervosa and Associated Disorders, 33-50% of anorexia patients have a co-morbid mood disorder, such as depression. A review of the literature has shown prebiotic and probiotic interventions to regulate and normalize the microbiome may reduce mood disorder symptoms such as depression and anxiety. Conversely, there is research of probiotic interventions that have found no significant effect on mood and depression. Treating imbalances related to dysbiosis with prebiotics or probiotics, may prove to be a beneficial in the course and treatment of mood disorders. This research is a review of the literature examining the effects of probiotic or prebiotic interventions on mood disorders, however more research is needed in this area.