

# ACTIVIA®

## MIND-GUT CONNECTION

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*The exploration of probiotics and their health benefits presents a fascinating intersection between nutrition and the intricate workings of the human body. While the focus here is on the broad advantages these beneficial bacteria offer, it's crucial to understand that specific strains of probiotics have distinct effects. It's noteworthy that some probiotic yogurt has been associated with reducing minor digestive issues—like bloating, gas, abdominal pain, and rumbling—when consumed as part of a balanced diet and healthy lifestyle, specifically twice\* a day for two weeks.*

### THE MIND-GUT CONNECTION: A FRONTIER IN SCIENCE

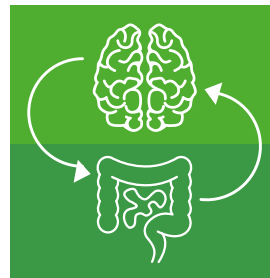
Recent scientific endeavours have shed light on the connection between our gut health, the microbiome residing in our digestive system, and our central nervous system. This relationship could impact our mood, behaviour, and even thought processes, introducing the concept of the gut-brain axis. An everyday example of this connection is the sensation of "butterflies" in the stomach during moments of nervousness, illustrating how stress in the brain can influence gut reactions<sup>1</sup>.

### DIGESTION, HEALTH, AND MOOD: AN INTERLINKED TRIO

The gastrointestinal tract is more than just a digestion centre, it houses over 100 million nerve cells, forming its own nervous system known as the enteric nervous system, or the "second brain." This intricate system highlights how our gut feelings are often a mirror of our emotional states, supporting the idea that digestive health can be a factor in our physical and psychological well-being<sup>2</sup>.

### PROBIOTICS: ALLIES IN MAINTAINING BALANCE

Probiotics, the beneficial bacteria found in certain foods and supplements, play a crucial role in maintaining this balance. By supporting a healthy gut microbiome, probiotics can contribute to improved digestion and may even have a positive impact on mood. The specific strains of probiotics and their targeted benefits are an area of ongoing research, highlighting the importance of choosing the right type of probiotic for specific health needs.

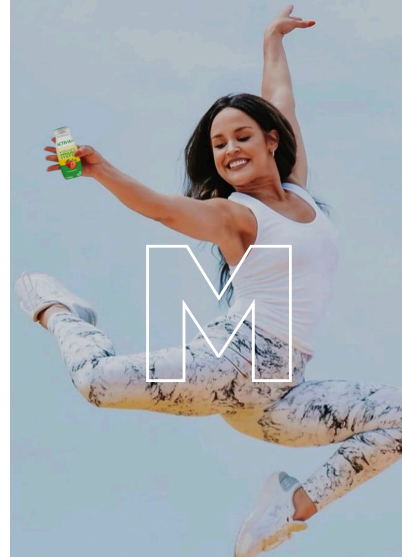


### THE FUTURE OF GUT HEALTH AND MENTAL WELL-BEING

As we continue to unravel the complexities of the gut-brain axis, the potential for probiotics to support both physical and mental health becomes increasingly apparent. This burgeoning field of research holds promise for developing more targeted use of probiotics<sup>3</sup>.



## IT STARTS IN THE GUT



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### RESEARCH VALIDATES THE BRAIN-GUT-MICROBIOME CONNECTION IN HEALTHY INDIVIDUALS

The intricate dance between our brain, gut, and the microscopic inhabitants of our digestive system is a fascinating area of study that has captured the attention of scientists around the world. This relationship, often referred to as the brain-gut-microbiome axis, suggests a complex network of communication that significantly influences our health, behaviour, and emotions. One specific study has further illuminated this connection, providing evidence of how our gut microbiota—the vast community of microorganisms living in our digestive tract—interacts with our brain and influences our mood<sup>4</sup>.

In this particular study, researchers focused on healthy female participants, analyzing their fecal samples to understand the composition of their gut microbiota. What they discovered were two distinct groups based on the bacterial genera predominating their gut environment: one group had a higher prevalence of *Bacteroides*, while the other was more abundant in *Prevotella*<sup>4</sup>. These findings are not just a testament to the diversity of human microbiota.

Participants with a gut microbiota dominated by *Bacteroides* were found to have a thicker cortex in areas associated with complex cognitive processing and a larger volume in regions related to memory<sup>5</sup>. This suggests that the presence of *Bacteroides* may be linked to enhanced cognitive functions. On the other hand, individuals with a *Prevotella*-dominant microbiota exhibited more connections between brain regions involved in processing emotions, attention, and sensory information<sup>5</sup>. Interestingly, these individuals also reported experiencing higher levels of negative emotions, such as anxiety and distress, when exposed to unpleasant images, compared to the *Bacteroides*-rich group<sup>5</sup>.

While the mechanisms behind these observations remain a subject of ongoing research, the study underscores the possible impact of gut microbiota on our brain structure and emotional health. It reinforces the idea that the microbes residing in our gut can influence far more than just our digestive health.

The implications of these findings extend into practical advice for maintaining a healthy gut-brain axis. One of the most accessible ways to support gut health is through diet, particularly by incorporating fermented foods and probiotics. Fermented foods are not only nutritious, but also promote a diverse gut microbiota.

### THE ROLE OF FERMENTED FOODS AND PROBIOTICS IN ENHANCING GUT WELLNESS

Probiotics or live microorganisms, when consumed in adequate amounts, play a role in maintaining gut flora balance. Although they may not permanently colonize the gut, probiotics can influence the existing gut microbiota composition and activity, promoting a healthy digestive environment<sup>6</sup>.

The study of the brain-gut-microbiota axis is a vivid reminder of the holistic nature of our health. It highlights the importance of nurturing our gut microbiota through dietary choices that support microbial diversity and balance. This emerging field of science not only broadens our understanding of human biology but also offers promising avenues for developing novel approaches to promoting overall well-being.

\*2 servings

#### REFERENCES

1. Bugs on the Brain: the Microbiota-Gut-Brain Axis. International Scientific Association for Probiotics and Prebiotics (ISAPP). September 2017. Available at: <https://isappscience.org/bugs-brain-microbiota-gut-brain-axis/> [Accessed December 13, 2021]. 2. Shah E, Rezaie A, Riddle M, Pimentel M. Psychological disorders in gastrointestinal disease: epiphenomenon, cause or consequence? *Ann Gastroenterol*. 2014;27(3):224-230. 3. Carabotti M, Scirocco A, Maselli MA, Severi C. The gut-brain axis: interactions between enteric microbiota, central and enteric nervous systems. *Ann Gastroenterol*. 2015;28(2):203-209. 4. Tillisch K, et al. Brain Structure and Response to Emotional Stimuli as Related to Gut Microbial Profiles in Healthy Women. *Psychosom Med*. 2017;79(8):905-913. 5. Rivero E. Research suggests association between gut bacteria and emotion. UCLA Newsroom. 2017. <https://newsroom.ucla.edu/releases/research-suggests-association-between-microbiome-and-emotion> Accessed January 5, 2022. 6. Sanders M, et al. Probiotics for human use. *Nutr Bull*. 2018;43(3):212-225.