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The gut-brain connection: Exploring how gut microbiome influences Mental Health**Alla Zaentz***American Board of Regenerative Medicine, UAE*

Emerging research highlights a profound connection between gut health and mental well-being, revealing the gut microbiome as a pivotal player in the gut-brain axis. This presentation delves into the intricate relationship between the gut microbiome and mental health, offering insights into the underlying mechanisms and potential therapeutic applications.

The human gut hosts a complex community of microorganisms that perform essential functions, including digestion, immune modulation, and the synthesis of vital compounds. Recent studies have demonstrated that these gut microbes communicate with the brain through various pathways, including the vagus nerve, immune system interactions, and the production of neurotransmitters such as serotonin and gamma-aminobutyric acid (GABA). These interactions suggest that the gut microbiome can significantly influence mood, behaviour, and cognitive functions.

Evidence from clinical and preclinical research indicates that alterations in gut microbiota composition are linked to mental health disorders such as anxiety, depression, and autism spectrum disorders. For instance, individuals with depression often exhibit reduced microbial diversity and specific imbalances in gut bacteria. Conversely, positive mental health outcomes have been associated with the presence of beneficial microbes like *Lactobacillus* and *Bifidobacterium*.

Dietary interventions, including the use of prebiotics, probiotics, and fermented foods, peptides therapy, FMT show promise in modulating the gut microbiome to support mental health. These findings open new avenues for treating mental health disorders through dietary and microbiome-targeted therapies.

This presentation will explore the current state of research on the gut-brain connection, highlight key studies illustrating the impact of gut microbiota on mental health, and discuss future directions in this rapidly evolving field. Understanding the gut-brain connection not only advances our knowledge of mental health but also paves the way for innovative treatment strategies that harness the power of the microbiome.

Biography

Alla Zaentz is an infectious disease specialist with over 13 years of experience, focusing on functional and regenerative medicine. She is certified by the American Board of Regenerative Medicine. Zaentz has been a speaker at prestigious conferences, including the 8th UAE Global Diabetes Association and IFCC WorldLab 2024.