

Symposium | MDD : [Symposium 53] How does the gut microbiota contribute to elucidating the mental health in children and adolescents?

📅 Fri. Sep 26, 2025 4:30 PM - 6:00 PM JST | Fri. Sep 26, 2025 7:30 AM - 9:00 AM UTC 🏢 Session Room 7
(Conference Room C)

[Symposium 53] How does the gut microbiota contribute to elucidating the mental health in children and adolescents?

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[SY-53-01] Influences of probiotic supplementation on the mental health of humans

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Keywords : Probiotics, Prebiotics, Mental health, Stress, Synbiotics

Probiotic consumption is increasing globally due to their well-documented health benefits. Research has shown that probiotics are effective as adjuvant therapeutic agents for various conditions. Mental health issues affect around 20% of people worldwide, underscoring the urgent need for effective treatments and preventative strategies. Good mental health means feeling well emotionally and mentally. It allows one to handle everyday stress, work effectively, and participate in the community. The connection between gut health and mental well-being is gaining increasing attention, as emerging research suggests that the gut microbiome plays a crucial role in regulating mental health. Probiotics may help modulate these processes by supporting healthy gut microbiota and offer promising adjuncts to traditional mental health treatments. We have investigated the effect of synbiotic supplementation (*Lactobacillus paracasei*H1101 and *Bifidobacterium animalis* subsp. *lactis*, 5 g galactooligosaccharides, and 5 g oligofructose) on stress-related parameters in Thai subjects. In the stressed group, administering synbiotics led to a significant reduction in negative scores on the Thai Stress Test and a decrease in tryptophan levels. In the non-stressed group, administration of synbiotics resulted in a notable reduction in tryptophan. At the same time, levels of dehydroepiandrosterone sulfate, tumor necrosis factor- α , 5-hydroxyindoleacetic acid, and short-chain fatty acids (SCFAs) increased significantly. In both groups, synbiotic supplementation lowered cortisol and lipopolysaccharide (LPS) levels, while increasing the anti-inflammatory mediator interleukin-10 (IL-10) and immunoglobulin A (IgA). In conclusion, administering synbiotics helped alleviate negative feelings by modulating the hypothalamic-pituitary-adrenal (HPA) axis, enhancing IL-10 and IgA levels, and reducing LPS. In contrast, while synbiotics did not significantly impact stress levels in the non-stressed group, they did promote favorable changes in SCFA profiles, the HPA axis, and tryptophan metabolism. These findings suggest that synbiotics may offer therapeutic potential for stress-related disorders and gut microbiome remodeling, depending on the individual's baseline stress status.