

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

📅 2025年9月26日(金) 16:30 ~ 18:00 🏢 Session Room 7 (Conference Room C)

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

Moderator: Katsunaka Mikami (Department of Psychiatry, Tokai University School of Medicine), Chaiyavat Chaiyasut (Innovation Center for Holistic Health, Nutraceuticals, and Cosmeceuticals, Faculty of Pharmacy, Chiang Mai University)

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

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It is becoming clear that gut microbiota plays a crucial role in brain development and function. The gut and brain communicate bidirectionally via mechanisms such as hormones, cytokines, the vagus nerve and the central nervous system via spinal afferent fibers. Recently, the gut microbiota has been attracting particular attention in this mechanism. This new system is the recently proposed bidirectional “gut microbiota-gut-brain axis (MGBA)”. It has also become clear that biologically active substances derived from intestinal bacteria affect stress responses, behavior, and mental states. Plasma ACTH and corticosterone levels in response to restraint stress (i.e., activation of the hypothalamic-pituitary-adrenal (HPA) axis) were higher in germ-free (GF) mice than in specific pathogen-free (SPF) mice. The resident microbiota may affect the postnatal development of the HPA stress response in mice. Furthermore, GF mice were shown to be more active, anxious, and aggressive than Ex-GF mice. These results suggest that the intestinal microbiota may strongly affect not only the stress response but also the host's behavior and mental state.

This symposium will focus on the effect of MGBA on the behavior and mental status of children and adolescents and discuss them from the perspectives of basic researchers and clinicians. The speakers will introduce the latest topics in this interesting field of microbial research. From a clinical perspective, the presentation will focus on the pathology of anorexia and stress intervention methods in relation to MGBA. From a basic science, the presentation will focus on mouse aggression and early developmental intervention, as well as the effects of dog ownership and adolescent microbiota on mental health.