

Probiotics Impact on Cognitive Ability and Emotions in Adolescents: A Brain-Gut Axis Study

Authors : Boran Cui, Zhenxiong Wen, Yuhan Zhang, Weibo Zhang

Abstract : The Gut-Brain Axis (GBA) is a bidirectional communication system between the central nervous system (CNS) and the enteric nervous system (ENS), with gut microbiota playing a crucial role in regulating its functions. This study investigates probiotics' effects on adolescents' cognition, memory, and emotions. A double-blind, randomized controlled trial involved 15 healthy adolescents aged 15-18, divided into a treatment group receiving probiotics and a control group given a placebo. Assessments included baseline and post-intervention evaluations after a fourweek period using the Positive and Negative Affect Schedule (PANAS) and the Montreal Cognitive Assessment (MoCA). Results showed significant cognitive improvement and increased positive emotions in the treatment group, while the control group exhibited no notable changes. These findings suggest probiotics positively influence cognitive function and emotional state by modulating gut microbiota. Despite the small sample size, this study provides preliminary evidence for probiotics' therapeutic potential in adolescents. Larger, longer-term studies are needed to confirm these results.

Keywords : gut-brain axis, probiotics, cognitive function, emotional state, adolescents, Lp-G18

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