Brain Medicine

Table of Contents

Volume 1 • Number 5 • September 2025

Cover Art

Cover Image: Exercise counters cafeteria diet-induced behavioral despair through metabolic and gut-brain mechanisms. This issue's cover illustrates the interplay between diet, exercise, and mental health investigated by Nota and colleagues. In adult male rats, voluntary wheel running mitigated the increase in immobility (a depression-like behavior) induced by a Western-style cafeteria diet high in saturated fat and sugar. Exercise also exerted modest anxiolytic effects and improvements in spatial learning independent of diet. The antidepressant-like effects of exercise in cafeteria diet-fed rats were accompanied by attenuation of diet-induced increases in plasma insulin and leptin, and restoration of caecal metabolites including anserine, indole-3-carboxylate, and deoxyinosine. Exercise increased circulating GLP-1 and promoted adult hippocampal neurogenesis in chow-fed animals; however, both effects were blunted in rats exposed to the cafeteria diet. Correlation analyses revealed associations between specific caecal metabolites and depression- and cognition-related behaviors, independent of diet and exercise. These findings provide insight into metabolic hormone and gut-derived metabolite mechanisms underlying the effects of cafeteria diet and exercise on brain and behavior, with implications for the microbiotagut- brain axis in mood disorders. Cover image adapted from research by Nota et al. (pages [52–66]) and discussed in the accompanying editorial by Licinio et al. (pages [1–4]).

Image credits: Left panel generated by Grok XAI after extensive human interaction with the editor; right panel by satyrenko via Depositphotos.

This issue is now available at https://genomicpress.kglmeridian.com/view/journals/brainmed/brainmed-overview.xml?journaltabs-desktop=Archive.