


Exploring the intersection of metabolic and neuropsychiatric health

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Editorial

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This special issue of *Acta Neuropsychiatrica* focuses on Metabolic Neuropsychiatry, an emerging discipline investigating the intersection of metabolic and brain sciences. This field addresses critical questions regarding the bidirectional relationship between neuropsychiatric disorders and metabolic abnormalities, with the ultimate goal of advancing knowledge that informs both clinical and research practices.

Neuropsychiatric disorders are frequently associated with metabolic comorbidities, including obesity, dyslipidaemia, impaired glucose regulation, and hypertension. Similarly, metabolic syndromes increase the risk of developing mental health conditions. The complex interplay of these factors demands an integrative approach spanning nutrition, exercise science, endocrinology, immunology, psychiatry, and neurology, supported by robust basic and clinical neuroscience (Sahay *et al.*, 2024).

The contributions to this issue present a diverse array of studies that illustrate the breadth of Metabolic Neuropsychiatry. Two studies investigate the bio-behavioural effects of early-life adversity. The first using rodent models highlights the role of stress response pathways and mitochondrial dysfunction in shaping bio-behavioural outcomes, particularly in rats with genetic susceptibility to depression (Whitney *et al.*, 2023a). The other evaluates the effects of early-life exercise on depressive-like behaviour and associated biological markers in a rodent model, demonstrating alterations in hippocampal monoamine levels and mitochondrial function (Whitney *et al.*, 2023b). Together, these studies underscore the critical role of stress-response pathways and mitochondrial dysfunction in shaping developmental and behavioural outcomes. Influence of early environment could also be found in a study of Niemann-Pick type C disease investigating neurodevelopmental anomalies, which may have implications for understanding early gestational influences on brain structure (Walterfang *et al.*, 2023).

This issue also includes research on metabolic syndrome in individuals with bipolar disorder, identifying sex-specific risks and independent predictors of metabolic comorbidities (Liu *et al.*, 2023). Another contribution examines the neurocognitive and social challenges experienced by individuals with classical galactosemia, exploring links between metabolic dysfunction and brain function (Hermans *et al.*, 2024).

These studies underscore the complexity of the relationships between metabolic and neuropsychiatric processes and highlight the importance of interdisciplinary research to address these challenges. While significant advances have been made, gaps remain in understanding the underlying mechanisms, as well as in translating findings into effective therapeutic interventions.

We express our gratitude to the contributors and reviewers whose rigorous work has shaped this issue. Their efforts contribute to the growing body of evidence in this field and underscore the importance of Metabolic Neuropsychiatry in addressing unmet clinical needs. We hope that this collection will serve as a foundation for future studies, providing insights that will inform both research and clinical practice.

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