Metabolic Dysregulation and Memory Cognition: Baseline Findings Using a Delayed Recall Test

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Introduction. Cognitive impairment has been associated with metabolic risk factors, such as a body mass index (BMI) over 30. Memory, critical for daily functioning, may serve as an indicator of early cognitive decline in individuals with metabolic risk factors. Existing research focuses on older adults, leaving a gap in mid-life populations where interventions may be more effective. This study investigates the relationship between metabolic risk factors and memory in mid-life adults.

Methods. Forty adults (ages 45-65) were recruited for a six-week exercise intervention. Baseline assessments included BMI and cognitive assessments. Memory was evaluated using the NIH Toolbox Rey Auditory Verbal Learning Test, which measures memory recall approximately 15 minutes following learning a list of words. The relationship between BMI and memory were analyzed with a Pearson correlation.

Results. A negative correlation trend was observed between BMI and memory ($r = -0.314$, $p = 0.06$). Over 55% of participants had a BMI over 30, indicating an elevated risk for developing metabolic syndrome.

Conclusions. Findings suggest a relationship between BMI and poorer memory recall, underscoring the potential role of metabolic risk factors contributing to cognitive decline. These results emphasize the importance of addressing metabolic risk factors in strategies aimed at mitigating cognitive impairment. Future research will include other metabolic risk factors: hypertension, dyslipidemia, diabetes, and arterial stiffness, to determine their individual and combined contributions to memory and overall cognitive function.

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