



JOURNAL OF EXERCISE SCIENCE AND PHYSIOTHERAPY

Indexed, Peer Reviewed, Referred

Since 2005



Effect of Sprint Interval Training on Cognition in Young Adults

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Abstract

Objectives: To evaluate the effect of Sprint Interval Training (SIT) on short-term memory, working memory, cognitive flexibility, selective/sustained attention, and processing speed among young adults. **Materials and Methods:** An experimental study was conducted on 60 young adults aged 18–25 years who were randomly allocated into an experimental group ($n = 30$) and a control group ($n = 30$). The experimental group underwent Sprint Interval Training on a cycle ergometer, while the control group received no intervention. Cognitive outcomes were assessed using the Digit Span Test, Trail Making Test, Bells Test, and Stroop Test. **Results:** The experimental group demonstrated significant improvements in short-term memory ($p = 0.003$), working memory ($p < 0.001$), and selective/sustained attention ($p < 0.001$). Processing speed showed significant within-group improvement ($p = 0.046$), whereas cognitive flexibility did not improve significantly. **Conclusions:** Sprint Interval Training significantly improved short-term memory, working memory, and selective/sustained attention in young adults, suggesting that SIT is an effective and time-efficient strategy for enhancing selected domains of cognition.

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Key words: Working Memory; Selective Attention; Processing Speed; Neuroplasticity; High-Intensity Exercise; Executive Function

DOI: 10.18376/jesp/2026/v22/i2/47767

Introduction

Cognition encompasses all forms of knowing and awareness, including perceiving, remembering, reasoning, judging, imagining, and problem-solving. It is defined as the collection of processes through which sensory input is transformed, stored, recovered, and utilized (Bayne et al., 2019). Cognitive function refers to the mental processes involved in acquiring knowledge, processing information, and reasoning, including domains such as perception, memory, attention, decision-making, and language (Kiely, 2014). These processes enable individuals to learn, think, remember, plan, make judgments, and interact effectively with their environment (Sternberg and Sternberg,