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# **Proceedings of the Annual Meeting of the Cognitive Science Society**

### **Title**

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### **Permalink**

<https://escholarship.org/uc/item/443556sj>

### **Journal**

Proceedings of the Annual Meeting of the Cognitive Science Society, 46(0)

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### **Publication Date**

2024

Peer reviewed

# Cognitive Performance in Students: Focus on Lifestyle Factors, Brain Activity & Meditation Intervention

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## Abstract

This study explores the impact of a single-session meditation intervention on cognitive performance and brain wave responses in university students ( 19 years) with varying physical activity levels. In a fast-paced academic environment, understanding factors influencing cognitive health is crucial for overall well-being. Lifestyle components, including sports engagement, stress, sleep, loneliness, and anxiety, were examined using a quasi-experimental design. Participants underwent pre-and-post cognitive tests focusing on attention and working memory with simultaneous brain activity measurement. Experimental groups practiced guided meditation, while controls listened to meditation-benefits audio. Results indicate improved cognitive performance in students from both no-sports and sports groups post-meditation and control. Brain wave data aligned with cognitive performance, revealing a relaxed focus state post-meditation. This provides valuable data from student populations, supporting the development of interventions for a healthier learning environment and validating portable EEG devices for potential use in neurofeedback and cognitive neuroscience research.