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Effect of balance training versus stretching relaxation exercise in memory & spatial cognition enhancement on healthy adults

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Abstract

Background: Physical exercise has been shown to improve cognitive functions. However, it is still unknown which type of exercise affects cognition. In the present study, we tested the hypothesis that demanding balance training program improves memory and spatial cognition.

Objective: To test the effect of balance training versus stretching relaxation exercise on memory and spatial cognition in cognitive enhancement.

Patients and Methods: Participants randomly assigned into 2 groups, 40 participants in balance training group (group 1) and 40 participants in stretching relaxation training group (group 2). Participants trained in groups of 10–12 individuals. Each group trained four times a week for 6 weeks. Each session lasts for 50 minutes. Training groups instructed by the same professional trainers. Each participant took part in 24 training sessions in total. All participants advised not to change their habitual level of physical activity throughout the intervention period.

Results: Balance performance improved only in the balance group from pre- to post-training from 85.8±3.0 to 95.0±2.2. Only the balance group improved in memory in wechsler IQ test from 94.6±2.6 to 108.0±4.5 and spatial cognitive abilities in spatial reasoning from 17.5±5.0 to 26.2±5.2. Finally, none of the two groups displayed changes in mismatch negativity test. The findings suggest that systematic balance training is capable of enhancing some cognitive functions, such as memory and spatial cognition.

Conclusion: In sum, we are able to conclude that 6 weeks of balance training in healthy adults has positive effects on memory and spatial cognition, and an increase in cardiorespiratory fitness does not seem to be necessary to induce beneficial effects of physical exercise on cognition. From an applied perspective, balance training might represent a promising alternative intervention for individuals who are not able to participate in aerobic training following health restrictions.

Biography

Ahmed A. El-Hameed an Egyptian Audio-vestibular Physician has completed Bechlor degree of Medicine from Ain Shams University, Egypt in 2014. Then graduated from the Military Academy in 2016 to join Audio-vestibular department in Egyptian Armed Forces Hospitals. My publication & interest in connection between vestibular system & cognitive funcions & its reflection on individual performance in military/sport/educational activities.

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