

## عنوان مقاله:

Investigating the Putative Mechanisms Mediating the Beneficial Effects of Exercise on the Brain and Cognitive Function

## محل انتشار:

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## نویسندگان:

Zahra Mashhadi - Faculty of Medicine, Ardabil University of Medical Sciences, Ardabil, Iran

Hakimeh Saadati - Department of Physiology, Faculty of Medicine, Ardabil University of Medical Sciences, Ardabil, Iran

masoumeh Dadkhah - Pharmaceutical Sciences Research Center, Ardabil University of Medical Sciences, Ardabil, Iran

## خلاصه مقاله:

Introduction: Exercise training is documented to impact many aspects of brain function and has helpful effects on the overall brain, mental health, and performance. The beneficial impacts of exercise on brain performances are the promotion of learning and memory, enhancement of plasticity, protection from neurodegenerative disease, and neuro-rehabilitation following stroke. Methods: Searching keywords including cognitive functions, exercise, neurodegenerative diseases, neurotrophic factors, and sleep deprivation in Pubmed, Science Direct, and Google Scholar helped us to access approximately ۱۵۳ articles in this study. Besides, the positive effects of various forms of exercise on the brain function in humans and animal experiments mediated by neurotrophic factors were compared and discussed in this review. Results: Regular physical activity increases synaptic plasticity by influencing the synaptic organization and potentiating synaptic strength and enhances the expression of certain neurotrophic factors including Brain -Derived Neurotrophic Factor (BDNF) which is the key mechanism intermediating wide benefits of exercise in the brain and animal hippocampus. In addition, exercise improves synaptic plasticity by reinforcing the underlying systems which support plasticity including neurogenesis, metabolism, and angiogenesis. Such structural and functional alteration made by physical activities has been indicated in various parts of the brain. These alternations have been studied more in the hippocampal system. Conclusion: A variety of brain disorders including alzheimer's disease, parkinson's disease, chronic stress, age-related cognitive decline, psychological disorders have been revealed to .avoid, restore, or improve by different procedures of physical exercise

## کلمات کلیدی:

Cognitive Functions, Exercise, Neurodegenerative Diseases, Neurotrophic Factors

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