

Effects of exercise on cognitive functioning and mental health: a muscle - brain connection

Prof. Luis Carrasco Páez MSc, PhD
Department of Physical Education and Sport
University of Seville. Spain.

Abstract

During the last decades, the benefits of regular exercise for brain health, particularly for cognition and mental health, have been well-reported by both observational and experimental human studies. Although many of these studies were focused on the effects of chronic exercise in cognitively impaired subjects, recent investigations have highlighted the role of exercise improving cognitive abilities and preventing the decline of cognition across the lifespan in healthy individuals. On the other hand, significant evidence exists to suggest that exercise programs can improve treatment outcomes for different mental disorders, especially those that affect mood. However, the mechanisms of acute and chronic exercise-improved brain function are still not completely known. In this context, it is important to consider that exercise induces muscle responses and adaptations that affect remote tissues. Like other secretory cells, myocytes produce cytokines and other peptides called myokines which exert an autocrine function in regulating muscle metabolism as well as a paracrine/endocrine regulatory function on distant organs, such as gut, liver, and brain. Thus, the aim of this keynote presentation is to reinforce the potential of exercise as a useful tool to improve cognitive functioning and mental health and how muscle-brain crosstalk could play a key role in these exercise-related benefits.