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Sommario/riassunto	<p>There is overwhelming evidence linking increased physical activity with positive changes in cognitive functioning and brain health. Much of what we know about these interrelationships comes from aerobic exercise training studies with older adults and children. This literature has paved the way for the neuroscientific investigation of mechanisms responsible for exercise-induced cognitive and brain health enhancement, a list that ranges from molecular changes to systemic changes in executive control and neural connectivity. A new perspective has also emerged that aims to understand executive control processes that may underlie the regulation of health behavior. In accordance with this view, physical activity falls under the umbrella of health behaviors that require a substantial amount of executive control. Executive control is a limited resource, and the aging process depletes this resource. People who regularly exercise are said to have higher “self-regulatory control”—planning, goal-shielding and impulse control—than irregular exercisers. The successful maintenance of physical activity participation in lieu of daily cognitive stressors likely reflects an adaptive resistance to control failures. Indeed, a handful of studies have shown the relationship between greater executive control and subsequently higher levels of physical activity. However, little is known about the neural correlates of physical activity adherence or sedentary behavior, with the view that neurocognitive factors have an antecedent and reciprocal influence on these behaviors. No research has focused</p>

on the brain networks responsible for the self-regulation of physical activity, which likely overlaps with structures and functions playing critical roles in the regulation of other health behaviors.

Interdisciplinary investigations are needed to explain the extent to which physical activity self-regulation and self-regulatory failure is dependent upon, or under the influence of executive control processes and brain networks. Understanding the degree to which self-regulatory resources may be enhanced, restored, and trained will have enormous implications for basic science and applied fields. It is also of great import to understand whether or not physical activity self-regulation is a domain-specific behavior associated with specific brain networks, or to determine the extent to which regulatory network-sharing occurs. The aim of this Frontiers Research Topic is to curate contributions from researchers in social and cognitive neurosciences and related fields, whose work involves the study of physical activity behavior, self-regulation and executive control. For this Research Topic, we, therefore, solicit reviews, original research articles, and opinion papers, which draw theoretical or empirical connections related to sustained physical activity behavior, self-regulatory strategies, cognitive performance, and brain structure and function. While focusing on work in the neurosciences, this Research Topic also welcomes contributions in the form of behavioral studies, psychophysiological investigations, and methodological innovations. This Frontiers Research Topic will carve out new directions for the fields of exercise, cognitive, and social neurosciences. We hope you will consider submitting your work.
