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Energy drinks intake modulates motor cortical excitability, plasticity and motor performance

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Energy drinks (EDs) containing caffeine, taurine and glucuronolactone are very popular. In the field of athletic training, previous reports showed that consumption of caffeinated EDs might affect motor behaviors and performances. The physiology of cortical circuitries can be investigated in humans by using transcranial magnetic stimulation (TMS). I will discuss the use of TMS as a tool to investigate the effects of EDs intake on motor cortical circuitries to further understand the mechanisms underlying to the putative ergogenic and performance-enhancing effects of EDs. Furthermore, I will discuss the effects of EDs intake on sensorimotor integration, cortical plasticity, movement preparation and exercise-induced cortical plastic adaptations in humans.

Biography

Fortunato Battaglia is an MD, PhD neurologist who specializes in clinical neurophysiology. He graduated from the University of Messina, Italy. Currently he is a Professor at Seton Hall University where he teaches neuroscience, clinical neurology and motor control. He is interested in exploring cortical synaptic plasticity to better understand the pathophysiology of neuropsychiatric diseases and to develop treatments for these conditions. His current research focus on integrative health and wellness, motor control and cognition and he is conducting studies using non-invasive brain stimulation techniques such as transcranial magnetic stimulation (TMS) and direct current stimulation (tDCS). He published over 70 papers on high-impact journals that have been extensively cited by other researchers.

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