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Increasing resilience: Molecular and electrophysiological changes following Quadrato Motor Training

At this historic moment, which is characterized by exponential external technological development, we need tools to help us cope better with induced stress. What may be required in order to keep pace is a work on Inner Design Technology, in which people, through different training paradigms, can undergo neuroplasticity, which can in turn aid in becoming more resilient. While stress suppresses many brain functions, as well as brain derived neurotrophic factor (BDNF) synthesis, important for learning and neuronal plasticity; some antidepressant treatments were found to increase BDNF. Nevertheless, injection of BDNF was also found to produce an opposing depression-like response, emphasizing the importance of activating the body's own resources. To this aim, we utilized the Quadrato Motor Training (QMT), a specifically-structured movement meditation, created by Patrizio Paoletti, which was found improve neuronal communication, attentive relaxation and creativity. Following 12-weeks of daily practice, we further found increased proBDNF level. The present results support the usefulness of integrating training such as the QMT across the lifespan and suggest that it may aid in coping with stress and increase well-being. In the current talk, we will discuss the underlying biological and neuronal mechanisms mediating improved cognitive and emotional functions, extending previous knowledge regarding the benefits of training for increasing emotional, molecular and neuronal resilience.

Biography

Tal Dotan Ben Soussan is the Director of Neuroscientific Research Unit of the Patrizio Paoletti Foundation. Leading studies examining the effects of different training paradigms on neuroplasticity, resilience and well-being, her multidisciplinary approach utilises electrophysiological, neuroanatomical and molecular tools to examine the underlying mechanisms promoting cognitive and emotional well-being. Her pioneering work on the Quadrato Motor Training has demonstrated that specifically-structured sensorimotor activity can improve neurobiological, emotional and cognitive functions. She is also applying her neuroscientific model to examine the interconnectedness of motion, emotion and cognition for increasing resilience and performance in the workplace, as well as in schools and neurodegenerative states.

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