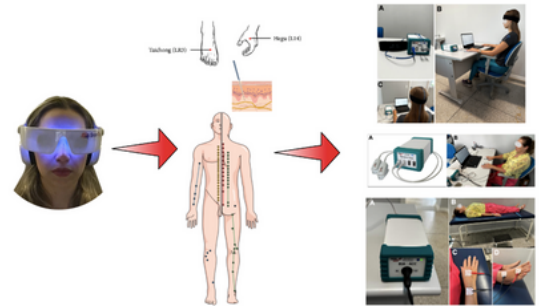


WORKSHOP 34

DATE: 21/09/2023

TIME: 5.30 PM

Integration of Brainwave Entrainment and Electroacupuncture: Effects on Frontal Cortex Hemodynamics and Autonomic Balance



90 minutes

Recent scientific evidence has demonstrated the importance of inhibitory modulation on the prefrontal cortex (PFC) in pain management. More recently, the Heartfulness meditation system has emerged as a popular meditative practice around the world. The use of auditory stimuli to induce specific brain states, more specifically, their applications for a variety of measures of mental well-being, has been a topic widely explored in the academic literature. This Workshop will discuss the neurophysiological basis of the effects and mechanism of action of electroacupuncture and brain wave entrainment from audio visual stimulation. In addition, we will demonstrate in a practical way, the effects of the integration of brainwave entrainment and electroacupuncture on PFC hemodynamics and autonomic balance.

Recent scientific evidence has demonstrated the importance of inhibitory modulation on the prefrontal cortex (PFC) in pain management. The loss of Top-Down function generates an adrenergic dominance that leaves the autonomic nervous system in a state of persistent fight or flight with consequences in the central and peripheral circuits of pain. Studies with functional magnetic resonance imaging (fMRI) have demonstrated the ability of electroacupuncture (EA) to modulate PFC circuits and more recently this has been demonstrated by means of Near-infrared spectroscopy (NIRS). More recently, the Heartfulness meditation system has emerged as a popular meditative practice around the world, with over two million active practitioners worldwide in 2018. Heartfulness meditation (hereinafter known simply as Heartfulness) is a heart-based practice aimed at achieving a balanced mind. In addition, audio brainwave entrainment (hereafter known as ABE), using binaural beats and isochronic tone training, has also become a prominent relaxation technique. Brainwave entrainment refers to the use of rhythmic stimuli to produce a frequency-following response in the brainwaves to match the frequency of the stimuli.

The use of auditory stimuli to induce specific brain states, more specifically, their applications for a variety of measures of mental well-being, has been a topic widely explored in the academic literature. In this Workshop, the neurophysiological basis of the effects and mechanism of action of EA and brainwave entrainment from audio visual stimulation will be discussed. In addition, we will demonstrate in a practical way, the effects of integration of brainwave entrainment and electroacupuncture on PFC hemodynamics and autonomic balance. To this end, a face-to-face demonstration will be carried out with volunteers who will be evaluated for PFC activity (HEG, BioTekna, Italy) and autonomic nervous system activity (PPG Stress Flow, BioTekna, Italy), then individuals will be submitted to a EA + ABE session and the same parameters were reassessed again. We hope to demonstrate live and in real time the effects of EA associated with ABE on PFC modulation and autonomic balance.

Speakers

Francisco José Cidral-Filho - Bachelor's in Naturopathy, Specialization in Chinese Medicine, Master's and PhD in Neuroscience, Post-Doctorate in Health Sciences. Co-founder and Associate Professor of the Laboratory of Experimental Neuroscience (University of Southern Santa Catarina - UNISUL - Brazil) and the Integrative Wellbeing Institute (Orlando, FL).

Gianluca Bianco - Chairman of the Posturology and Neuromodulation Research Laboratory RELPON at Sapienza University of Rome Specialized in Internal Medicine and postgraduate in Rehabilitation and Biontegrative Medicine, Gianluca has obtained three Master degrees: Posturology, Psycho-Neuro-Endocrine-Immunology and Auricular Neuromodulation. He is also graduated in Acupuncture and in Auricular Acupuncture, both accredited by the Italian Federation of Acupuncture Societies F.I.S.A. He focused his research on the diagnostic relationship between stress, pain and the fascial system and applied a therapeutic approach based on acupuncture and neuromodulation for pain and stress relief, developing his own model called "fascial neuromodulation".

Daniel Fernandes Martins - Coordinator and permanent professor of the Graduate Program in Health Sciences (PPGCS) at UNISUL area Medicine II CAPES 5 concept. CNPQ level 2 productivity scholarship holder. Coordinator and researcher at the Laboratory of Experimental Neurosciences (LaNEX-UNISUL). Graduated in Physiotherapy from UNISUL, master's and doctorate in Neurosciences (Pain and inflammation) from the Federal University of Santa Catarina (UFSC). More than 120 articles in the medical scientific literature.