

Stimulation the prefrontal cortex by EEG-neurofeedback training in high body mass index individuals

ABSTRACT

The prevalence of high body mass index individuals can be said to have reached epidemic proportions, thus proving that at least part of the individuals is not capable of regulating their own food intake which is key to weight gain prevention. The general symptomatology that may be associated with overweight or obesity is a cognitive deficit in the regulation food intake behavior, this functional change is often associated with certain characteristic neuro-diagnostic electroencephalography. In current years, stimulation of the prefrontal cortex by using neuromodulation techniques has been suggested as such an approach and has attracted the attention of many researchers. However, the EEG-neurofeedback training is one of neuromodulation techniques that utilizes a real-time display of EEG signal to learn self-regulation of brain activity. The design of present study is randomized control trial, ten healthy students with high body mass index were recruited to participate in study. These students divided to two groups, experimental group and control group with two conditions (pre and post-intervention). This study found out the feasibility of EEG-Neurofeedback Training in stimulation the prefrontal cortex in high body mass index individuals that may be a valuable contribution to change the food intake behavior.

Keyword: BMI; EEG; Food-intake; Overweight; Obesity; Neuromodulation; Neurofeedback training; Prefrontal cortex