

Title: DOES PREFRONTAL NON INVASIVE BRAIN STIMULATION ALLEVIATING SYMPTOMS IN DEPRESSION AND SCHIZOPHRENIA IMPACT EMOTION PROCESSING ?

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Abstract

Repetitive transcranial magnetic stimulation (rTMS) and transcranial direct current stimulation (tDCS) are noninvasive brain stimulation techniques currently used as therapeutic tools in various neuropsychiatric conditions. Applied over the dorsolateral prefrontal cortex (DLPFC), they showed their efficacy in reducing treatment-resistant symptoms in patients with major depression and in patients with schizophrenia with predominantly negative symptoms. The DLPFC is a brain structure involved in the expression of these symptoms as well as in other dysfunctional processes observed in these conditions such as emotional processes. By analyzing data from literature, we aim to establish whether or not a link exists between clinical improvements and modulation of emotional processes following the stimulation of the DLPFC in both pathological conditions. In selected studies, emotional processes were assessed by using standardized psychometric scales or specific emotional tasks. The data collected show that tDCS and rTMS can alleviate depressive and schizophrenic symptoms as well as modulate emotional processes in patients. However, an effect on emotional processes is not linked to a clinical improvement neither in patients with depressions nor in patients with negative schizophrenia. Our results suggest that although sharing common brain structures, the brain networks involved in symptoms and in emotional processes would be separate in depression as well as in schizophrenia.