

Prefrontal electrical stimulation in non-depressed reduces levels of reported negative affects from daily stressors

ABSTRACT:

Background

Negative emotional responses to the daily life stresses have cumulative effects which, in turn, impose wide-ranging negative constraints on emotional well-being and neurocognitive performance (Kalueff and Nutt, 2007; Nadler et al., 2010; Charles et al., 2013). Crucial cognitive functions such as memory and problem solving, as well more short term emotional responses (e.g., anticipation of- and response to- monetary rewards or losses) are influenced by mood. The negative impact of these behavioral responses is felt at the individual level, but it also imposes major economic burden on modern healthcare systems.

Aims

Although much research has been undertaken to understand the underlying mechanisms of depressed mood and design efficient treatment pathways, comparatively little was done to characterize mood modulations that remain within the boundaries of a healthy mental functioning.

Method

In two placebo-controlled experiment, we applied daily prefrontal transcranial Direct Current Stimulation (tDCS) at five and three points in time.

Results

We found reliable improvements on self-reported mood evaluation. Using a new team of experimenters, we replicated this finding in an independent double-blinded placebo-controlled experiment and showed that stimulation over a shorter period of time (3 days) is sufficient to create detectable mood improvements.

Conclusions

Taken together, our data show that repeated bilateral prefrontal tDCS can reduce psychological distress in non-depressed individuals.

Keywords

Brain Stimulation, tDCS, Mood, Prefrontal cortex

Published Work:

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