

# Transcranial direct current stimulation and attention skills in burnout patients: a randomized sham-controlled pilot study

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**BACKGROUND:** Burnout is defined by deficiencies in executive functions, attention, and episodic and working memory, of which the lingering effects of impaired executive functions and attention are the most frustrating.

**OBJECTIVE/HYPOTHESIS:** We hypothesized that anodal transcranial direct current stimulation (tDCS) of the left dorsolateral prefrontal cortex can improve executive attention in patients with burnout.

**METHODS:** This was a randomized sham controlled pilot study with two arms. Patients with burnout received three weeks of daily sessions (15 sessions in total) of tDCS in addition to three weekly sessions of standard behavioral therapy. The primary outcome measure was the central executive of the working memory, more specifically the updating and control mechanisms. Secondary, the effect of tDCS was measured on other components of working memory, on burnout and depression scores, and on quality of life.

**RESULTS:** Sixteen patients were enrolled and divided in two groups (sham and real). While both groups improved on burnout and depression scores, and on several central executive functions, tDCS had a significant additional beneficiary impact on attention resulting in a better quality of life.

**CONCLUSION:** tDCS might be an effective treatment for burnout. However, the current study has some limitations, including the sample size and heterogeneous patient population. More elaborate studies are needed to elucidate the specific impact of anodal tDCS over the left dorsolateral prefrontal cortex on burnout.

**Keywords:** tDCS — transcranial direct current stimulation, burnout, Attention, Executive Function, dorso lateral prefrontal cortex

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