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

Pia Van Noppen1, Kim Van Dun2, Siel Depestele2*, Stefanie Verstraelen2 and Mario U. Manto3

• 1 DIADIS BVBA, Belgium
• 2 University of Hasselt, Belgium
• 3 University of Mons, Belgium

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


Presentation Type: Poster presentation

Topic: Behavioral/Systems Neuroscience

Copyright: The abstracts in this collection have not been subject to any Frontiers peer review or checks, and are not endorsed by Frontiers. They are made available through the Frontiers publishing platform as a service to conference organizers and presenters.

The copyright in the individual abstracts is owned by the author of each abstract or his/her employer unless otherwise stated.

Each abstract, as well as the collection of abstracts, are published under a Creative Commons CC-BY 4.0 (attribution) licence (https://creativecommons.org/licenses/by/4.0/) and may thus be reproduced, translated, adapted and be the subject of derivative works provided the authors and Frontiers are attributed.

For Frontiers’ terms and conditions please see https://www.frontiersin.org/legal/terms-and-conditions.

Received: 30 Apr 2019; Published Online: 02 May 2019.

* Correspondence: Mx. Siel Depestele, University of Hasselt, Hasselt, Limburg, 3500, Belgium, siel.depestele@uhasselt.be