The effect of subjective beliefs on motivated behavior in transcranial direct stimulation: An exploratory study

Published: 04-06-2018
Last updated: 11-04-2024

To investigate the effect of subjective beliefs on motivated behavioral responses following frontal transcranial direct current stimulation (tDCS) in healthy volunteers.

Ethical review	Approved WMO
Status	Recruitment stopped
Health condition type	Other condition
Study type	Interventional

Summary

ID

NL-OMON46721

Source
ToetsingOnline

Brief title
Expectations and tDCS

Condition

- Other condition

Synonym
not applicale

Health condition

onderzoek bij gezonde vrijwilligers

Research involving
Human

Sponsors and support

Primary sponsor: Radboud Universiteit Nijmegen
Source(s) of monetary or material Support: Ministerie van OC&W

Intervention

Keyword: Direct current stimulation, Expectations, Placebo

Outcome measures

Primary outcome

Average reaction times in milliseconds.

Secondary outcome

not applicable

Study description

Background summary

Transcranial direct current stimulation (tDCS) is routinely applied to investigate psychological functioning. A priori beliefs about the effects on the efficacy of tDCS may interact with the actual observed behavioral effects. However the moderating effect of subjective beliefs has not been systematically studied in tDCS studies.

Study objective

To investigate the effect of subjective beliefs on motivated behavioral responses following frontal transcranial direct current stimulation (tDCS) in healthy volunteers.

Study design

Sham-controlled partly double blind mixed subjects design.

Intervention

Participants will be randomly assigned into one of two groups, One group will receive information that tDCS is highly effective, while the other group will receive information that tDCS does not work.

Transcranial direct current stimulation (tDCS) will be delivered by a battery-driven electric current stimulator (Eldith DC Stimulator (CE 0118), Ilmenau) using a pair of 3x5 cm electrodes placed over the left (ANODE) and right dorsolateral prefrontal cortex (CATHODE). Stimulation at an intensitiy of 2 mA will be delivered for 25-30 minutes during a cognitive motor task.

Study burden and risks

The currently proposed tDCS procedure and experiment does not carry any significant risks. Stimulation will be performed in line with the Standard Operating Procedure Non-Invasive Brain Stimulation of the Donders Institute for Brain, Cognition and Behaviour. Potential side-effects of tDCS are itching or burning sensations on the under the electrodes, light headache and/or fatigue. These are mild discomforts that respond promptly to common analgesics. Volunteers can withdraw from the study at any given time and there are no direct benefits for the participants. The novel insights will broaden our fundamental understanding on the psychological factors, here subjective expectations about efficacy of DC stimulation, on the actual effect of real DC stimulation.

Contacts

Public
Radboud Universiteit Nijmegen

Montessorilaan 3
Nijmegen 6525HR
NL
Scientific
Radboud Universiteit Nijmegen

Montessorilaan 3
Nijmegen 6525HR
NL

Trial sites

Listed location countries

Netherlands

Eligibility criteria

Age
Adults (18-64 years)
Elderly (65 years and older)

Inclusion criteria

Between 18-35 years of age years; Right-handed; Non-smoking; Normal or corrected-to-normai vision;
Willingness and ability to give written informed consent and willingness and ability to understand the nature and content, to participate and to comply with the study requirements.

Exclusion criteria

1) Average use of more than 3 alcoholic beverages daily; (2) Use of psychotropic medication or recreational drugs; (3) Skin disease; (4) Pregnancy; (5) Serious head trauma or brain surgery; (6) Neurological or psychiatric disorders; (7) Large or ferromagnetic metal parts in the head (except for a dental wire); (8) Implanted cardiac pacemaker or neurostimulator; (9) Participation in a NBS study in the past 28 days.

Study design

Design

Study type:	Interventional
Intervention model:	Parallel
Allocation:	Randomized controlled trial
Masking:	Single blinded (masking used)
Control:	Placebo
Primary purpose:	Other

Recruitment

NL
Recruitment status: Recruitment stopped

Start date (anticipated):	18-06-2018
Enrollment:	40
Type:	Actual

Ethics review

Approved WMO Date:	04-06-2018
Application type:	First submission
Review commission:	CMO regio Arnhem-Nijmegen (Nijmegen)

Study registrations

Followed up by the following (possibly more current) registration

No registrations found.

Other (possibly less up-to-date) registrations in this register

No registrations found.

In other registers

Register	ID
CCMO	NL65301.091.18