The effect of non invasive brain stimulation on learning leg movements.

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Motor cortex or cerebellar tDCS(transcranial Direct Current Stimulation) will enhance motor skill learning in heatlhy subjects and chronic stroke survivors. Stimulating the motor cortex will result in an increase in offline learning, whereas...

Ethische beoordeling	Positief advies
Status	Werving nog niet gestart
Type aandoening	-
Onderzoekstype	Interventie onderzoek

Samenvatting

ID

NL-OMON22709

Bron
NTR

Aandoening

tDCS
Stroke
motor skill learning

Dutch:
tDCS
CVA
motorisch leren

Ondersteuning

Primaire sponsor: University of Twente, Research institute MIRA
Overige ondersteuning: ZON-MW, The Netherlands Organization for Health Research and Development

Onderzoeksproduct en/of interventie

Uitkomstmaten

Primaire uitkomstmaten

Relative change in motor skill between the first and last training block (total learning).

From the first and last training block of every training session the mean movement time and the error rate is calculated. By combining these two parameters with the SAF the motor skill of these two blocks are calculated. The motor skills from all training sessions together are used to calculate the main parameter total learning and the secondary parameters on- and offline learning.

Toelichting onderzoek

Achtergrond van het onderzoek

The primary objective of this study is to assess whether anodal motor cortex- or anodal cerebellar tDCS can enhance motor skill learning in the lower extremities in chronic stroke survivors and healthy subjects.
This study is a double blind randomized controlled trial. All subjects participate in three experimental training sessions on consecutive days and receive tDCS during the first 10 minutes of every training session. Every experimental group receives one type of stimulation, being anodal motor cortex stimulation, anodal cerebellar stimulation or sham (placebo) stimulation.
It is of importance to conduct this study to know whether tDCS results in any beneficial lasting effects on motor learning. If so, the role of different brain areas in motor skill learning will be better understood and in future studies we can try to maximize these beneficial effects on rehabilitation of walking.

Doel van het onderzoek

Motor cortex or cerebellar tDCS(transcranial Direct Current Stimulation) will enhance motor skill learning in heatlhy subjects and chronic stroke survivors. Stimulating the motor cortex will result in an increase in offline learning, whereas stimulating the cerebellum will result in an increase in online learning.

Onderzoeksopzet

Total learning: after day 3
Online learning: After day 1,2,3
Offline learning: After day 2,3

Onderzoeksproduct en/of interventie

Subjects will participate in three training sessions and receive tDCS (transcranial Direct Current Stimulation) during the first 10 minutes of every training session. Every experimental group receives one type of stimulation, being anodal motor cortex stimulation, anodal cerebellar stimulation or sham (placebo) stimulation.

Contactpersonen

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Deelname eisen

Belangrijkste voorwaarden om deel te mogen nemen (Inclusiecriteria)

For healthy subjects:

1. Age > 18 years;

2. Able to stand and make stepping movements for in total 42 minutes;

3. Good vision (on 2 m distance).

Additional for stroke patients:

1. Diagnosed with a hemiparesis as the result of a first ever, ischemic subcortical stroke;

2. Chronic stage: time since stroke > 6 months;

3. Independent walkers with clear walking impairment.

Belangrijkste redenen om niet deel te kunnen nemen (Exclusiecriteria)

1. Metallic implants in the brain;

2. Presensce of severe or frequent headache;

3. Other neurological disorders or orthopedic problems;

4. Have a history of cardiac conditions that interfere with physical load.

Onderzoeksopzet

Opzet

Type:	Interventie onderzoek
Onderzoeksmodel:	Parallel
Toewijzing:	Gerandomiseerd
Blindering:	Dubbelblind
Controle:	Placebo

Deelname

Nederland

Status:	Werving nog niet gestart
(Verwachte) startdatum:	01-03-2012
Aantal proefpersonen:	60
Type:	Verwachte startdatum

Ethische beoordeling

Positief advies

Datum:	29-02-2012

Soort: Eerste indiening

Registraties

Opgevolgd door onderstaande (mogelijk meer actuele) registratie

Geen registraties gevonden.

Andere (mogelijk minder actuele) registraties in dit register

Geen registraties gevonden.

In overige registers

Register	ID
NTR-new	NL3171
NTR-old	NTR3315
CCMO	NL39593.044.12
ISRCTN	ISRCTN wordt niet meer aangevraagd.

Resultaten

Samenvatting resultaten
N/A