Coupling between brain and muscles in response to mechanical perturbations.

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The control of voluntary movement involves different parts of the central nervous system. The involvement of the cortex in the control of movement is not always incorporated in research on motor control. In this study we will use system...

Ethische beoordeling	Positief advies
Status	Werving gestopt
Type aandoening	-
Onderzoekstype	Interventie onderzoek

Samenvatting

ID

NL-OMON27695

Bron
NTR

Aandoening

ENG: movement disorders
NL: bewegingsstoornissen

Ondersteuning

Primaire sponsor: MIRA institute, University of Twente
Overige ondersteuning: MIRA institute, University of Twente

Onderzoeksproduct en/of interventie

Uitkomstmaten

Primaire uitkomstmaten

Corticomuscular coherence and impulse response functions from perturbation to EMG and EEG.

Toelichting onderzoek

Achtergrond van het onderzoek

Objective:

Study cortical involvement in motor control using system identification techniques in the time and frequency domain.

Method:

Electrophysiological signals will be recorded from the subject’s scalp and over three muscles in the lower arm while the subject exerts a constant force to a manipulandum. The manipulandum will apply perturbations in the form of wrist angle changes. Using different perturbations we will look at coupling measures in the time domain (proprioceptive evoked potentials) end the frequency domain (corticomuscular coherence).

Countries of recruitment:

The Netherlands.

Doel van het onderzoek

The control of voluntary movement involves different parts of the central nervous system. The involvement of the cortex in the control of movement is not always incorporated in research on motor control. In this study we will use system identification technique in order to study functional corticomuscular coupling in the time and frequency domain.

Onderzoeksopzet

During one session of approximately 2,5 hours, EEG and EMG are recorded during motor tasks. During the motor task the subject is perturbed by continuous position perturbations.

Onderzoeksproduct en/of interventie

Position perturbations while the subject applies a constant force against a manipulandum.

Contactpersonen

Publiek

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Wetenschappelijk

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Deelname eisen

Belangrijkste voorwaarden om deel te mogen nemen (Inclusiecriteria)

1. Age between 18 and 50 years old;

2. Written informed consent.

Belangrijkste redenen om niet deel te kunnen nemen (Exclusiecriteria)

1. Injury of the dominant wrist in the past year;

2. Suffer from any movement disorder;

3. Suffer from a sever medical condition.

Onderzoeksopzet

Opzet

Type:	Interventie onderzoek
Onderzoeksmodel:	Parallel
Toewijzing:	N.v.t. / één studie arm
Blindering:	Open / niet geblindeerd
Controle:	N.v.t. / onbekend

Deelname

Nederland

Status:	Werving gestopt
(Verwachte) startdatum:	15-03-2011
Aantal proefpersonen:	20
Type:	Werkelijke startdatum

Ethische beoordeling

Positief advies

Datum:	19-01-2011
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	NL2575
NTR-old	NTR2701
Ander register	ABR : 34673
ISRCTN	ISRCTN wordt niet meer aangevraagd.

Resultaten

Samenvatting resultaten
N/A