Observing is moving: Motor facilitation in ischemic stroke patients through movement observation

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The objective of the study is therefore:1) Investigate whether the motor system of stroke patients can be activated by movement observation.2) Investigate whether movement observation leads to improved movement execution.

Ethical review	Approved WMO
Status	Recruiting
Health condition type	Other condition
Study type	Observational invasive

Summary

ID

NL-OMON29752

Source
ToetsingOnline

Brief title
observing is moving

Condition

- Other condition
- Central nervous system vascular disorders

Health condition

bewegingsbeperking

Research involving
Human

Sponsors and support

Primary sponsor: Universitair Medisch Centrum Groningen
Source(s) of monetary or material Support: Ministerie van OC&W

Intervention

Keyword: observation, rehabilitation, stroke, tms

Outcome measures

Primary outcome

The main outcome measures of experiment 1 are the effect of movement observation on amplitude, surface area and latency time of the Motor Evoked Potentials (MEP*s). For the second experiment the main outcome measures are the effect of movement observation on EMG (Electromyography), the reaction time and the Range of Motion.

Secondary outcome

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Study description

Background summary

Stroke is a major cause of acquired disabilities in adults. Therefore stroke rehabilitation is a topic that deserves attention. In the field of physiotherapy and rehabilitation there is a need for evidence-based instruments and strategies.
Rehabilitation after stroke can for a large part be seen as relearning of movements. After a stroke the patients have to reacquire their former movement repertoire. Because movement observation activates the motor system it may be possible to facilitate movement execution through observation. Therefore movement observation may be of use in stroke rehabilitation

Study objective

The objective of the study is therefore:

1) Investigate whether the motor system of stroke patients can be activated by movement observation.
2) Investigate whether movement observation leads to improved movement execution.

Study design

The study consists of 2 experiments. In the first experiment Transcranial Magnetic Stimulation (TMS) will be used to study whether observation of goal directed grasping leads to increased motor system activity (see item 1 under objective). The same subjects that participate in the first experiment will take part in the second experiment. This second experiment will examine the effect of movement observation on movement execution (see item 2 under objective). In this study the subjects observe a movement several times and later execute the movement themselves.

Study burden and risks

The study is consists of two parts. In the first part Transcranial Magnetic Stimulation (TMS) is used. Approximately 240 stimulations will be executed. The second part of the study deals with the movement execution. In order to do this EMG, range of motion and reaction time will be measured. The study will take about 3 hours to administer. The study will take place in the period during which physiotherapy is started. So the patients can be loaded to a certain extent. There are no risks for the subjects, as a result of the study, when in- and exclusion criteria are met.

Contacts

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Trial sites

Listed location countries

Netherlands

Eligibility criteria

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

Inclusion criteria

patients:
- mild-moderate stroke based on the criteria of the National Institute of Health Stroke Scale (NIHSS) up to a maximum of 16.
-a partial a. cerebri media infarction with distal paresis of 1 to 3 based on the Medical Research Council (MRC).
-be able to make some hand and finger movements.
-be able to understand the unstructions of the experiment
-informed consent;subjects of the control group:
-informed consent
-age and education match with patient group

Exclusion criteria

patients
-severe damage of the premotor areas
-a complete a. cerebri media infarction or lacunar infarct
-motor problems pre-stroke
-aphasia
-unable to give informed consent
-severe vision problems
-hemianopsia or neglect
-metal implants
-metal splinters in the eye or head (metalworkers)
-cardiac pacemaker
-migraine attacks
-epilepsy;subjects of the control group
-neurological disorders or muscle disorders, a neurologist will do a standard clinical

neurological examination
-severe vision problems
-metal implants
-metal splinters in the eye or head (metalworkers)
-cardiac pacemaker
-migraine attacks
-epilepsy

Study design

Design

Study type:	Observational invasive
Intervention model:	Other
Allocation:	Non-randomized controlled trial
Masking:	Open (masking not used)
Control:	Active
Primary purpose:	Treatment

Recruitment

NL

Recruitment status:	Recruiting
Start date (anticipated):	15-03-2007
Enrollment:	20
Type:	Actual

Medical products/devices used

Registration:	No

Ethics review

Approved WMO

Date:	08-05-2006
Application type:	First submission
Review commission:	METC Universitair Medisch Centrum Groningen (Groningen)

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	NL11328.042.06