Eye-hand coordination in patients with unilateral spatial neglect.

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Primary researchquestion:1. What are the differences in eye-hand coordination in patients with left or right hemisphere damage compared to healthy age-matched controls?Secondary research questions:2. What is the difference in eye-hand coordination...

Ethical review	Approved WMO
Status	Recruitment stopped
Health condition type	Central nervous system vascular disorders
Study type	Observational non invasive

Summary

ID

NL-OMON33368

Source
ToetsingOnline

Brief title
Eye-hand coordination in USN.

Condition

- Central nervous system vascular disorders
- Cognitive and attention disorders and disturbances

Synonym
Neglect, Unilateral Spatial Neglect

Research involving
Human

Sponsors and support

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

Intervention

Keyword: Diagnostics, Eye-hand coordination, Unilateral Spatial Neglect

Outcome measures

Primary outcome

Parameters eye-hand coordination:

- latency eye movement (defined as the time between the display of the visual stimulus and the start of the eye movement (in milliseconds))

- response time (defined as the time between the start of the eye movement and start of the hand movement (in milliseconds))

- execution time (time between start of the hand movement and touching the stimulus on the touchscreen (in milliseconds))

- hand peak velocity (time of peakvelocity in execution time period (in meters per second))

- number of errors in the tasks performed

Secondary outcome

Not applicable

Study description

Background summary

Damage to cortical areas involved in sensori-motor systems due to stroke, impair the integration of sensory information and execution of motor tasks, which may have a great impact on the quality of life. A special group in these stroke patients are patients with USN. USN is defined as *the inability to attend to objects, or even one*s own body, in a portion of space, despite the fact that visual acuity, somatic sensation and motor ability remain intact*. USN is a heterogeneous disorder that is a common consequence of stroke, it mostly presents itself in affecting the egocentric or allocentric frame of

reference. Although it is generally accepted that visuo-spatial attention may be the underlying cause for neglect, the heterogeneous presentation complicates the construction of cognitive models of spatial attention that might account for all types of USN. This in term leads to problems in developing tests to diagnose USN.
In clinical settings neglect is often under-diagnosed. Most clinical care focuses on severe presentations, which are most often cases with right hemisphere damage (RHD). This group of patients typically show neglect for the left side of their visual field or left side of their body.
USN mostly occurs after posterior inferior parietal cortex damage, but up-to-date, information is lacking about the role of eye-hand coordination and in the degree it is affected in USN patients, either with left hemisphere damage (LHD) or RHD. However, the role of parietal and frontal regions in coordinating eye-hand tasks has been shown in human as well as in studies involving non-human primates. We aim at developing specific eye-hand coordination tasks together with word spelling tasks based on the reference frames and apply these tests in patients with parietal or frontal damage. We expect that the sensitivity to diagnose neglect, as well in the LHD as in the RHD patients, will be higher by combining tasks examining eye-hand coordination and tasks examining word spelling abilities in these patients.

Study objective

Primary researchquestion:
1. What are the differences in eye-hand coordination in patients with left or right hemisphere damage compared to healthy age-matched controls?

Secondary research questions:
2. What is the difference in eye-hand coordination and word spelling abilities in patients with left hemesphere damage compared to patients with right hemisphere damage?
3. Is this method applicable and reproducable?
4. To what extent is the spatial processing ability affected?
5. Which frames of reference are affected?

Study design

Experimental / test development

Study burden and risks

Low.
The risks of this research are negligible. There will be little intervention and the investigation is not invasive.
The only possibility is that the subject gets frustrated because he is unable to complete a task. But the

expectation is that this will be minimal, moreover, the test may be interrupted if desired.

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

- age 20 years or older
- strokepatients with left or right hemisphere damage
- chronic

Exclusion criteria

- big frontal lesions with disturbances in behavior
- hemiplegia
- uncorrected ocular pathology
- other neurological co-morbidity

Study design

Design

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

Recruitment

NL

Recruitment status:	Recruitment stopped
Start date (anticipated):	01-10-2009
Enrollment:	60
Type:	Actual

Ethics review

Approved WMO

Date:	14-09-2009
Application type:	First submission
Review commission:	METC Erasmus MC, Universitair Medisch Centrum Rotterdam (Rotterdam)

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	NL29104.078.09