Interactions between spatial reference frames and voluntary action selection; differential prefrontal involvement?

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In the proposed experiment we expect to find a similar functional segregation within prefrontal and premotor cortical regions when a free choice option is introduced.

Ethical review	Approved WMO
Status	Recruitment stopped
Health condition type	Movement disorders (incl parkinsonism)
Study type	Observational non invasive

Summary

ID

NL-OMON30506

Source
ToetsingOnline

Brief title
Choices within reference frames

Condition

- Movement disorders (incl parkinsonism)

Synonym
movement disorders

Research involving
Human

Sponsors and support

Primary sponsor: Universitair Medisch Centrum Groningen
Source(s) of monetary or material Support: Ministerie van OC&W,deels Hazewinkel fonds (onder beheer RUG)

Intervention

Keyword: fMRI, free will, prefrontal cortex, visuomotor control

Outcome measures

Primary outcome

Local increases in neuronal activation will inferred from the local BOLD

responses. Significance of such responses will be tested by SPM (ANOVA).

Secondary outcome

nvt

Study description

Background summary

The proposed functional MRI (fMRI) experiment aims to investigate the differences in the cerebral organization of actions that are internally specified (free choice) and externally specified (fixed instruction). In our previous neuro-imaging experiment both parietal and hemispherical segregation was found when contrasting ego- and allocentric spatial reference frames in visuomotor reaching.

Study objective

In the proposed experiment we expect to find a similar functional segregation within prefrontal and premotor cortical regions when a free choice option is introduced.

Study design

The experiment consists of a visuomotor task with auditory instructions. During scanning, subjects have to push a button on a response box with a right hand finger. This action is observed by mirror The task consists of 4 conditions in which (1) one of many fingers has to push the same button, (2) the index finger has to push various buttons. Both tasks can be performed in response to a fixed instruction (3), or with allowing free choices (4). By distinguishing the actions specified by the spatial reference frames (button/finger), as well as those specified by free choice or fixed response, we are able to differentiate between the cortical processing of internal and external specified actions in

relation to spatial reference frames. Differences in task-related neuronal activations will be analysed with voxel-based statistics (SPM).

Study burden and risks

nvt.

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

healthy right-handed subjects, 18-65 y

Exclusion criteria

neurological or ophtalolmogical disease,
pregnancy, claustrofobia,
carrier of ferromagnetic material,

Study design

Design

Study type: Observational non invasive

Masking:	Open (masking not used)
Control:	Uncontrolled
Primary purpose:	Diagnostic

Recruitment

NL

Recruitment status:	Recruitment stopped
Start date (anticipated):	01-02-2007
Enrollment:	18
Type:	Actual

Ethics review

Approved WMO

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	NL15435.042.06