Integrated EEG-fMRI registration

Published: 01-09-2011
Last updated: 29-04-2024

The purpose of this study is to gain experience and expertise with simultaneous recordings and with analyses of the accompanying datasets.

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

Summary

ID

NL-OMON35821

Source
ToetsingOnline

Brief title
EEG-fMRI

Condition

- Other condition

Synonym
Memory and emotion processes

Health condition

Onderzoek naar de cognitieve-, aandachts- en geheugenprocessen bij gezonde vrijwilligers

Research involving
Human

Sponsors and support

Primary sponsor: Erasmus MC, Universitair Medisch Centrum Rotterdam
Source(s) of monetary or material Support: Internationaliseringsfonds EUR

Intervention

Keyword: EEG, Emotion, fMRI, Memory

Outcome measures

Primary outcome

Brain function: extent of fMRI activation (number and spatial distribution of

significantly activated voxels).

Psychophysiological function: Event-related potentials and EEG frequency data.

Recruitment

Secondary outcome

nvt

Study description

Background summary

Both functional Magnetic Resonance Imaging (fMRI) and Electro-Encephalography (EEG) are well-established research tools of investigating how the brain responds to external events. In fMRI this is achieved by investigating the blood-oxygenation-level-dependent (BOLD) response. Using this it is possible to localize which regions are active during a certain event. However, since this signal is measured indirectly trough the BOLD response the temporal resolution is low. In EEG the neuronal electrical activity is measured from the scalp. This means it provides a direct measure of brain activity. However, the source in EEG is difficult to pin down. Integrating these research tools means the high spatial resolution of fMRI can be combined with the high temporal resolution of EEG. Furthermore, when simultaneously recording is applied several testing artifacts can be ruled out, namely order effects, differences in sensory stimulation, subjective experience and behavior.

Study objective

The purpose of this study is to gain experience and expertise with simultaneous recordings and with analyses of the accompanying datasets.

Study design

The imaging study will take place in the radiology department of the Erasmus MC in one of the MRI scanners. The total scan time shall not exceed 90 minutes. There is no contrast agent administered during the scan. During the investigation, the volunteer is in contact with the researcher. At any time, the volunteer can stop the scan. In structural sequences (eg DTI) the volunteer will lie still in the scanner. During functional MRI will the subject will be offered stimuli (visual, tactile and / or auditory) and the volunteer will be asked to perform commands (moving body parts, watch a video screen, hear a sound, cognitive tasks , pressing response buttons). These commands are hardly taxing on the subject and already tested and optimized.

Study burden and risks

There are no risks associated with the MRI scan if the volunteer is screened for MRI contra-indications. The scan will last for a maximum of 90 minutes.

Contacts

Public
Erasmus MC, Universitair Medisch Centrum Rotterdam

's Gravendijkwal 230
3015 CE
NL
Scientific
Erasmus MC, Universitair Medisch Centrum Rotterdam

's Gravendijkwal 230
3015 CE
NL

Trial sites

Listed location countries

Netherlands

Eligibility criteria

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

Inclusion criteria

Informed consent
> 18 years old
Healthy
Able to speak and understand Dutch
Able to perform given tasks

Exclusion criteria

MRI contraindications
Epilepsy (due to EEG)
Use of drugs and/or /medication that will influence testresults
Pregnancy
Clautrophobia

Study design

Design

Study type: Observational invasive

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

Recruitment

NL

Recruitment status:	Recruiting
Start date (anticipated):	06-09-2011
Enrollment:	20
Type:	Actual

Ethics review

Approved WMO Date:	01-09-2011
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	NL36868.078.11