What drives the striatum? Functional MRI studies on conflict and control

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To better understand the relation between anticipation of inhibition and striatal activation. Experiment 1 aims to differentiate between response inhibition and response conflict. Experiment 2 aims to test the effects of subjective expectations of…

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

Summary

ID

NL-OMON36202

Source
ToetsingOnline

Brief title
What drives the striatum?

Condition

- Other condition
- Cranial nerve disorders (excl neoplasms)
- Psychiatric disorders NEC

Synonym
brain network, striatum

Health condition

gezonde proefpersonen

Research involving

Human

Sponsors and support

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

Intervention

Keyword: fMRI, inhibitory control, striatum

Outcome measures

Primary outcome

Striatal activation and how it is affected by response inhibition, response

conflict, subjective expectations, and left or right hand use.

Secondary outcome

Behavioral data

Study description

Background summary

We have previously shown that the striatum is activated not only during inhibition of a prepotent response, but also in anticipation of such inhibition. We want to perform two experiments to better understand the relation between anticipation of inhibition and striatal activation. We will use tasks that contain a series of Go-trials requiring a response, intermixed with Go-trials in which a stop-signal is presented and subjects have to refrain from responding. Brain activation will be measured using functional MRI.

Study objective

To better understand the relation between anticipation of inhibition and striatal activation. Experiment 1 aims to differentiate between response inhibition and response conflict. Experiment 2 aims to test the effects of subjective expectations of stop-signals on striatal activation. Study 3 aims to test the effects of response side on brain activation.

Study design

This study consists of three studies. Prior to the functional MRI session, subjects are trained on the task.

Study burden and risks

Subjects will undergo a magnetic resonance imaging (MRI) scan session of approximately 80 minutes. MRI is a non-invasive technique, so there is no need for special preparation for the subject. There are no known risks associated with the MRI acquisition and the data are solely used for research purposes. However, structural cerebral pathology may be noticed. If medical treatment is indicated, the subject will be notified.

There are no direct benefits for the subjects, but their participation in this study helps broaden the knowledge of the functioning of frontal-striatal circuits. As these circuits are affected in psychiatric illnesses, the knowledge obtained from the current studies may lead to a better strategy for investigating these illnesses.

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 18-30
right-handed

Exclusion criteria

neurological or psychiatric illness
medication use

Study design

Design

Study type: Observational invasive

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

Recruitment

NL

Recruitment status:	Recruitment stopped
Start date (anticipated):	13-05-2012
Enrollment:	72
Type:	Actual

Ethics review

Approved WMO

Date:	12-08-2011
Application type:	First submission
Review commission:	METC Universitair Medisch Centrum Utrecht (Utrecht)

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	NL36937.041.11