The role of the TemporoParietal Junction in interpersonal trust

Published: 26-04-2021
Last updated: 08-04-2024

Het objective of this study is to investigate a causal role between brain activity in the TemporoParietal Junction (TPJ) and interpersonal trust.

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

Summary

ID

NL-OMON55285

Source
ToetsingOnline

Brief title
TPJ and trust

Condition

- Other condition

Synonym
Not applicable

Health condition

Geen aandoening, dit onderzoek richt zich op de werking van het gezonde brein.

Research involving
Human

Sponsors and support

Primary sponsor: Universiteit van Amsterdam
Source(s) of monetary or material Support: Ministerie van OC&W

Intervention

Keyword: Functional MRI, Neuroscience, Repetitive TMS, Trust

Outcome measures

Primary outcome

Primary study parameters are: fMRI-measurements, decisions on experimental task

(number of invested tokens) and answers to (personality-)questionnaires.

Secondary outcome

Not applicable.

Study description

Background summary

Previous research has shown that the TemporoParietal Junction (TPJ) is involved in interpersonal trust. However, previous studies were all correlational studies. In the current study, we aim to prove a causal role between TPJ activity and interpersonal trust.

Study objective

Het objective of this study is to investigate a causal role between brain activity in the TemporoParietal Junction (TPJ) and interpersonal trust.

Study design

The study design consists of a double-blind, randomized experimental study, where "continuous theta-burst stimulation (cTBS)" will be administered to the temporoparietal junction (TPJ). cTBS is a variant of transcranial magnetic stimulation (TMS) and results in lowered brain activation of the stimulated brain region for about hour. 33% of the participants will receive cTBS to the left TPJ, 33% to the right TPJ, and 33% received placebo-cTBS to the left TPJ (by tilting away the magnetic coil by 90 degrees, so magnetic pulses will not enter the brain).

After having received cTBS, the participant will perform behavioural experiments, while functional MRI is recorded simultaneously.

Intervention

Participants will receive "continuous theta-burst stimulatie (cTBS)". cTBS is a variant of transcranial magnetic stimulation (TMS) and results in lowered brain activation of the stimulated brain region for about hour. 33% of the participants will receive cTBS to the left TPJ, 33% to the right TPJ, and 33% received placebo-cTBS to the left TPJ (by tilting away the magnetic coil by 90 degrees, so magnetic pulses will not enter the brain). Each participant will be randomly assigned to one of the experimental conditions.

Study burden and risks

Participants need to visit the lab 2 times and need to fill in questionnaires and practice the behavioural tasks once during an online experimental sessions. During the first lab visit, the participant will be screened to prevent adverse effects during the rest of the study. During this initial screening sessions, the resting motor threshold of the participant will be assessed twice with the use of TMS, followed by the acquisition of an anatomical MRI-scan of their brain. After successful medical screening, the participant will fill in a few personality-questionnaires and practice the behavioural task (at home, online). The second lab visit is the main test day. During the test day, the active motor threshold of the participant will be assessed twice and participants will perform a couple of simple computer tasks, while their brain activation is measured with functional MRI. Prior to the functional MRI measurements, the participants will receive cTBS to the left TPJ, the right TPJ or placebo-cTBS to the linker TPJ. In addition, participants need to follow specific instructions about drugs and alcohol intake prior to the test day and during the test day.

TMS can produce side effects, among which dizziness, nausea and headaches. In very rare occasions, an epileptic seizure may occur. Previous studies have reported that healthy participants tolerate cTBS well. As a screening proceeds the actual brain stimulation protocols, we expect no serious side effects.

Contacts

Public
Universiteit van Amsterdam

Nieuwe Achtergracht 129B
Amsterdam 1018WS
NL
Scientific
Universiteit van Amsterdam

Nieuwe Achtergracht 129B
Amsterdam 1018WS
NL

Trial sites

Listed location countries

Netherlands

Eligibility criteria

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

Inclusion criteria

Healthy volunteers between 18 and 45 years old;
Predominant righthandedness;
Normal or corrected-to-normal visus

Exclusion criteria

Current or history of any medical or psychiatric disorder or disease
History of epileptic seizures in self or family member
MRI contraindications
TMS contraindications
History of drug or alcohol dependence
Excessive alcohol intake in the last week

Study design

Design

Study type:	Interventional
Intervention model:	Parallel

Allocation:	Randomized controlled trial
Masking:	Double blinded (masking used)
Control:	Placebo
Primary purpose:	Other

Recruitment

NL

Recruitment status:	Recruitment stopped
Start date (anticipated):	20-07-2021
Enrollment:	90
Type:	Actual

Ethics review

Approved WMO

Date:	26-04-2021
Application type:	First submission
Review commission:	METC Amsterdam UMC

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	NL73174.018.20