

Hippocampal dysfunction in pattern separation

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The main objective of the current project is to characterize hippocampal neural (dys)function in the process pattern separation by comparing subjects along their performance on a behavioural pattern separation task.

Ethical review	Approved WMO
Status	Recruitment stopped
Health condition type	Anxiety disorders and symptoms
Study type	Observational invasive

Summary

ID

NL-OMON44199

Source

ToetsingOnline

Brief title

Hippocampus and pattern separation

Condition

- Anxiety disorders and symptoms

Synonym

anxiety, fear

Research involving

Human

Sponsors and support

Primary sponsor: Universiteit Maastricht

Source(s) of monetary or material Support: Ministerie van OC&W

Intervention

Keyword: Anxiety disorders, Fear, Hippocampus, Magnetic Resonance Imaging

Outcome measures

Primary outcome

The primary study parameters are the BOLD signal and the hippocampal subfield measures.

Secondary outcome

Secondary study parameters are anxiety and depression levels.

Study description

Background summary

A prominent and invalidating feature of anxiety disorders is the expansion of symptoms over stimuli and settings. This expansion is known as overgeneralization. When fear overgeneralizes, its impact on daily life can be devastating. Therefore, overgeneralization of fear is thought to constitute a central mechanism in the development of anxiety disorders. Recent studies have shown that the degree of generalization depends on perceptual similarity between stimuli and settings. Therefore, a specific mechanism called pattern separation is thought to underlie overgeneralization in anxiety disorders. The process of pattern separation refers to the ability to correctly discriminate between similar stimuli. Guiding behaviour by comparing new sensory input to stored representations is regulated by the hippocampus. The hippocampus is however not a uniform structure, but rather a hippocampal formation consisting of several morphologically and functionally different subregions

Study objective

The main objective of the current project is to characterize hippocampal neural (dys)function in the process pattern separation by comparing subjects along their performance on a behavioural pattern separation task.

Study design

The current project is set up as an experimental study. Once included in the study, participants will be invited to the test day, which

includes filling in several anxiety and depression questionnaires, a computer task measuring pattern separation, and undergoing structural and functional MRI-scans. No health risks are involved in participating in the study and it is unlikely that participants will directly benefit from their participation. The main burden for participants is their investment in time (2 visits, 3 hours in total) and the possible transient side-effects, such as vertigo and dizziness, associated with high magnetic fields.

Study burden and risks

No health risks are involved in participating in the study and it is unlikely that participants will directly benefit from their participation. The main burden for participants is their investment in time (2 visits, 3 hours in total) and the possible transient side-effects, such as vertigo and dizziness, associated with high magnetic fields.

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 up to 25 (<26);
- right-handed
- native Dutch speaker;

Exclusion criteria

- previous or current diagnosis or treatment for psychiatric disorder
- current psychotropic drug use
- major neurological disease
- Metal implants

Study design

Design

Study type: Observational invasive

Masking: Open (masking not used)

Control: Uncontrolled

Primary purpose: Basic science

Recruitment

NL
Recruitment status: Recruitment stopped
Start date (anticipated): 17-03-2015
Enrollment: 28
Type: Actual

Ethics review

Approved WMO
Date:

21-01-2015

Application type:	First submission
Review commission:	METC academisch ziekenhuis Maastricht/Universiteit Maastricht, METC azM/UM (Maastricht)

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	NL50254.068.14