

The role of adrenal stress hormones in emotional memory: formation, consolidation, and reconsolidation

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-Identify the neural correlates of enhanced formation of emotional memory, and parse the role of adrenal stress hormones in this process.-Identify the neural correlates of enhanced consolidation of emotional memory and parse the role of adrenal...

Ethical review	Approved WMO
Status	Pending
Health condition type	Anxiety disorders and symptoms
Study type	Interventional

Summary

ID

NL-OMON30998

Source

ToetsingOnline

Brief title

Stress and brain function

Condition

- Anxiety disorders and symptoms

Synonym

stress related mental disorders

Research involving

Human

Sponsors and support

Primary sponsor: Universitair Medisch Centrum Sint Radboud

Source(s) of monetary or material Support: NWO vernieuwingsimpuls VICI toegekend aan Prof.Dr. G. Fernandez

Intervention

Keyword: cortisol, emotional memory, functional MRI, stress

Outcome measures

Primary outcome

Functional MRI, memory performance, salivary levels of cortisol and alpha amylase, self-report questionnaires, and polysomnography (in one trial).

Secondary outcome

n/a

Study description

Background summary

During stressful experiences, the synthesis of the hormones adrenalin and cortisol in the adrenal cortex increases. These hormones influence memory for such experiences. This research protocol describes four trials in which the brain mechanisms underlying the formation, consolidation, and re-consolidation of such experiences, and the role of stress-hormones in this process, are investigated. Translating and verifying animal models of these processes to human research is an essential step in the development of neurobiological models of the etiology of stress related diseases such as posttraumatic stress syndrome and depression, and may yield new treatment options in the future.

Study objective

- Identify the neural correlates of enhanced formation of emotional memory, and parse the role of adrenal stress hormones in this process.
- Identify the neural correlates of enhanced consolidation of emotional memory and parse the role of adrenal stress hormones in this process.
- Specify the timing dependency of effects of adrenal stress hormones on memory formation.
- Identify the neural correlates of reconsolidation of emotional memory role and parse the role of adrenal stress hormones in this process.

Study design

Participants will be tested within one out of four separate trials in a placebo

controlled crossover design involving administration of a beta-blocker (propranolol), a glucocorticoid synthesis blocker (metyrapone), or hydrocortisone. Brain activity will be mapped using functional Magnetic Resonance Imaging.

Intervention

Depending on the trial in which participants are classified, they will receive the following oral administrations: 40 mg propranolol and 2 * 750 mg metyrapone, or 2*750 mg metyrapone and 2 * 40 mg propranolol, or 2 * 20 mg hydrocortisone, or 1 * 40 mg propranolol.

Study burden and risks

Participation in this research is without health risks. The burden on participants consists of time investment (max. 36 hours over multiple sessions) and several possibly uncomfortable aspects of the investigation, such as personal questionnaires, blood sampling, ECG, MRI-scans, restrictions in food intake and alcohol and recreational drug use, and exposure to aversive visual material.

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 male volunteers between 18 and 45 years of age.
- Predominant right-handedness.
- Body mass index between 18.5 and 30

Exclusion criteria

- Metal objects in or around the body.
- Claustrophobia.
- History of psychiatric treatment or current psychiatric treatment.
- History of neurological treatment or current neurological treatment.
- History of endocrine treatment or current endocrine treatment.
- History of heart related disease
- Regular use of corticosteroids.

Study design

Design

Study type:	Interventional
Intervention model:	Crossover
Allocation:	Randomized controlled trial
Masking:	Double blinded (masking used)
Control:	Placebo
Primary purpose:	Other

Recruitment

NL

Recruitment status: Pending

Start date (anticipated):	01-05-2007
Enrollment:	160
Type:	Anticipated

Ethics review

Approved WMO	
Application type:	First submission
Review commission:	CMO regio Arnhem-Nijmegen (Nijmegen)

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	NL16379.091.07