Neural correlates of pain-related anxiety: an fMRI study

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

Summary

ID

NL-OMON34684

Source
ToetsingOnline

Brief title
Neural correlates of pain-related anxiety

Condition

- Other condition

Synonym
Chronic Pain, fear of pain

Health condition

General Anxiety Disorder en chronische pijn

Research involving
Human

Sponsors and support

Primary sponsor: Universitair Medisch Centrum Groningen
Source(s) of monetary or material Support: Ministerie van OC&W,NWO,Top Instituut Pharma

Intervention

Keyword: Anxiety, fMRI, Pain

Outcome measures

Primary outcome

The main study endpoints are psychometric scales and cerebral activation

patterns.

Secondary outcome

not applicable

Study description

Background summary

Functional neuroimaging studies have provided more insight in the understanding of neural mechanisms of pain. However, only a few studies have investigated the neural mechanisms by which anxiety exacerbates pain perception and the neural substrates for anticipation on pain.

Study objective

The present study aims to get more insight in the neural mechanisms of pain modulation by anxiety. Psychometric scales acquired from two questionnaires assessing pain-related anxiety, will be used to select two groups based on pain-related anxiety level (low or high). In selected subjects we will use fMRI to measure brain activity in anticipation of and during a pain stimulus. This could provide more insight in neural mechanisms of chronic pain development.

Study design

This study is designed to investigate neural correlates of pain perception and pain-related anxiety as determined by fMRI. Individual temperatures for

the heat stimuli will be selected in a short training session. During this session we will determine the temperature correlating with a VASscore of 4 for a 'mild' pain stimulus and the temperature correlating with a VASscore of 7 for a 'moderate' pain stimulus. The study then starts with a design containing two session, an implicit learning and a test session. In the implicit learning session, two visual cues and two heat stimuli are used. One of the cues is always followed by a 'mild' painful stimulus (VAS 4), another signal is followed by either a 'mild' painful (VAS 4) or a 'moderate' painful stimulus (VAS 7). After each heat stimulus, pain intensity is rated by the subjects, using a visual analogue scale. In the second session the same two visual cues are used, but both cues will be followed by the same mild painful stimulus. Difference in anticipation of pain after the cues will be studied. During these sessions of approximately 20 minutes each, subjects receive 20 cue-stimulus trials. After the functional scans a short (5min) structural MRI scan will be made to map the anatomy of the brain. Participants will be in the scanner for aproximately 60 minutes.

Intervention

heat stimuli

Study burden and risks

Risks are minimal. The burden consists of tolerating and rating pain applications to the inner forearm within the MRI acquisition. The subjects will receive financial compensation; they contribute to better understanding of brain circuitry involved in the anticipation of pain, resulting from pain-related anxiety.

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 Volunteers
over 18 year of age
righthanded

Exclusion criteria

Chronic Pain
Use of pain medication
psychiatric disorders
neurological disorders
MRI incompatible implants

Study design

Design

Study type: Interventional

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

Recruitment

NL

Recruitment status:	Recruitment stopped
Start date (anticipated):	01-07-2010
Enrollment:	300
Type:	Actual

Ethics review

Approved WMO

Date:	02-06-2010
Application type:	First submission
Review commission:	METC Universitair Medisch Centrum Groningen (Groningen)

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	NL31543.042.10