The influence of attention on the processing of painful stimuli and vice versa.

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Gaining insight in the modulating effects of attention on the processing of short electrocutaneous painful and non-painful stimuli by comparing the patterns in brain activity en subjective measurements during different conditions of attention....

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

Summary

ID

NL-OMON36785

Source
ToetsingOnline

Brief title
Cognitive modulation of pain processing

Condition

- Other condition

Synonym
no disorders

Health condition

Geen aandoeningen

Research involving
Human

Sponsors and support

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

Intervention

Keyword: attention, distraction, pain, SEP

Outcome measures

Primary outcome

Response time, VAS-scores, SEP amplitudes, and locations

Sources and synchronization patterns of SEPs.

Secondary outcome

Scores on Thayers mood-scale

Scores on Annett Handedness Inventory

Study description

Background summary

Being able to sense pain is essential for human survival; it warns is if something is wrong with our body or when it is expected to go wrong. Action can be taken in these cases. For example, a child reaches out for a hot pan on the stove. The perception of pain causes the child to retract his/her hand from the hot pan. Damage could have been the result when the child was unable to react or when it would react to slow. Although useful, pain also occurs after an operation or when there is no threat to the body. Pain management tools are still insufficient in most of these cases. Earlier research has shown that the subjective pain experience of participants for acute pain stimuli is changed when attention is directed at the stimuli or when it is distracted from it. The effects of attention manipulations on the cortical processing of pain stimuli are still rather unclear and no consensuses are being made in the literature. Does attention manipulation have an effect on the early somatosensory processing of stimuli or at later stage in stimulus processing? For example at the source were the stimuli gets its emotional or motivational value? Questions like these will be answered with the proposed experiments.

Study objective

Gaining insight in the modulating effects of attention on the processing of short electrocutaneous painful and non-painful stimuli by comparing the patterns in brain activity en subjective measurements during different conditions of attention.
Assessing pain experience and SEPs in different distraction conditions in which attention is directed towards the pain experience, attention is directed towards a distraction task or in which attention is directed to a different location.
Assessing the modulating effect of pain processing on attention, in which electrocutaneous stimuli diverts attention away from the execution of the task at hand.
Assessing possible sources of pain processing as well as assessing the interactions between these sources and what the effect of attention is on these interactions.

Study design

Six experiments will be conducted which can give answers to the above mentioned objectives. These experiments will assess the effects of attention on pain processing using distraction or trough spatial attention manipulations, or both. The influence of pain on attention will be assessed using two N-back tasks and an attentional blink task.
This is an observational scientific study. A within-subjects design is used. Attentional manipulations modulated trials are semi-randomly divided between or within experimental blocks; all conditions are equally divided over blocks.

Intervention

Non-painful and painful electrocutaneous stimuli will be presented to the participants during the experiments.

Study burden and risks

Subjects will be asked not to use alcohol or psycho-active drugs in 24 hours previous to the measurements, and not to smoke or drink coffee one hour prior to participation. The individual experiments will take about two and a halve hours to complete.

No invasive or medical intervention will be used. The individual pain tolerance threshold for all participants is measured in a pretest. With these individual pain thresholds it is possible to account for possible differences in individual pain experience and therefore it is possible to keep the pain stimuli under personal pain thresholds.

The EEG equipment and the pain stimulators are extensively checked and it can be concluded that no risk are associated with participation in these experiments.

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

Experiment 1: 18 persons, 18 years or older, capable of giving informed consent.
Experiment 2: 16 right-handed persons and 16 left-handed persons, 18 years or older, capable of giving informed consent
Experiment 3: 24 persons, 18 years or older, capable of giving informed consent.
Experiment 4: 24 persons, 18 years or older, capable of giving informed consent.
Experiment 5: 24 persons, 18 years or older, capable of giving informed consent.

Experiment 6: 24 persons, 18 years or older, capable of giving informed consent.

Exclusion criteria

Persons who used alcohol or psycho-active drugs in the 24 hours prior to the experiment. Persons who took coffee or smoked in the hour prior to the experiment. Persons with prior history of physical or psychiatric illnesses, and physical (pain) complaints.

Study design

Design

Study type:	Interventional
Intervention model:	Other
Masking:	Open (masking not used)
Control:	Uncontrolled
Primary purpose:	Other

Recruitment

NL

Recruitment status:	Recruitment stopped
Start date (anticipated):	28-09-2011
Enrollment:	146
Type:	Actual

Ethics review

Approved WMO

Date:	19-07-2011
Application type:	First submission
Review commission:	METC Twente (Enschede)

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	NL31474.044.11