Intramuscular fine-wire EMG investigation of stimulus-driven EMG-activity associated with covert orienting

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To gain experience with a fine-wire intramuscular measurement technique for recording of short-latency muscle responses in neck muscles.

Ethical review	Approved WMO
Status	Recruitment stopped
Health condition type	Movement disorders (incl parkinsonism)
Study type	Observational invasive

Summary

ID

NL-OMON38659

Source
ToetsingOnline

Brief title
Neck muscle EMG in covert orienting

Condition

- Movement disorders (incl parkinsonism)

Synonym
Not applicable

Research involving
Human

Sponsors and support

Primary sponsor: Universitair Medisch Centrum Sint Radboud
Source(s) of monetary or material Support: Ministerie van OC&W

Intervention

Keyword: attention, EMG (electromyography), orienting response

Outcome measures

Primary outcome

Amplitude and timing of short-latency muscle response in a time window of

50-150 ms after stimulus presentation.

Secondary outcome

Reaction times of manual responses to stimuli presented ipsi- and contralateral

of responding hand.

Study description

Background summary

The investigation is motivated by the hypothesis that freezing of gait in Parkinson*s disease (PD) may be explained by bilaterally simultaneous orienting responses accompanied by short-latency reflex-like activity in axial muscles. The bilaterally simultaneous nature of these responses interferes with the normally alternating activation pattern of these muscles during walking, thus inducing a freezing episode. In order to evaluate this hypothesis in PD, we first have to gain experience with a fine-wire intramuscular measurement technique for recording the short-latency muscle responses in neck muscles, which express the orienting response.

Study objective

To gain experience with a fine-wire intramuscular measurement technique for recording of short-latency muscle responses in neck muscles.

Study design

Observational study

Study burden and risks

The investigation requires a time investment of 2 hours. Preparation includes an ultrasound investigation of the neck to identify and localise the relevant muscles. Subsequently, a needle is inserted in four muscles in order to place the electrodes. This will cause pain of a level comparable to an intramuscular injection or venapuncture. Finally, muscle activity will be recorded during a computerised attention task. The invasive EMG measurements are frequently carried out in basic and medical research and are not associated with any risks.

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 20-60 years. Right handed.

Exclusion criteria

- visual impairments
- previous neck trauma or known anatomical neck deformities
- skin disease or infection affecting the suboccipital region
- clotting disorder
- pregnancy
- use of antiplatelet or antithrombotic drugs

Study design

Design

Study type: Observational invasive

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

Recruitment

NL

Recruitment status:	Recruitment stopped
Start date (anticipated):	01-03-2013
Enrollment:	8
Type:	Actual

Ethics review

Approved WMO

Date:	01-05-2013
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	NL43616.091.13