Muscle atonia during sleep; an electromyographic study

Published: 10-06-2011
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Is there a better way to detect REM sleep atonia than with the current visual analysis of submental muscle EMG? To which degree do muscles become atonic during REM sleep? Which muscle exhibit the largest decrease? How can this decrease best be...

Ethical review	Approved WMO
Status	Recruitment stopped
Health condition type	Sleep disturbances (incl subtypes)
Study type	Observational non invasive

Summary

ID

NL-OMON34538

Source
ToetsingOnline

Brief title
Muscle atonia during sleep

Condition

- Sleep disturbances (incl subtypes)

Synonym
muscle weakness during sleep, sleepatonia

Research involving
Human

Sponsors and support

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

Intervention

Keyword: Atonia, EMG, PSG, REM sleep

Outcome measures

Primary outcome

EMG-activity of various muscles in relation to sleep stage.

Secondary outcome

Not applicable

Study description

Background summary

Currently sleep protocols emphasize the use of electromyography (EMG) of submental muscles to establish rapid eye movement (REM) sleep, during which muscle tone is supposed to be very low. Unfortunately, in clinical practice the decrease of submental EMG activity is often not clear enough to contribute to scoring of REM sleep. The publications suggesting the submental muscle date from the 1960's and did not conform to current standards of scientific methodology. The purpose of this study is to reassess the decrease of muscle tone during REM sleep and to improve its detection.

Study objective

Is there a better way to detect REM sleep atonia than with the current visual analysis of submental muscle EMG? To which degree do muscles become atonic during REM sleep? Which muscle exhibit the largest decrease? How can this decrease best be measured? Can this muscle tone be helpful in the identification of REM sleep?

Study design

Single center, observational study.

Study burden and risks

The volunteers will be asked to stay overnight in the hospital to undergo polysomnography with additional electrodes. The procedure is painless and

basically takes time and an extra hair wash only.

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, 18-55 years old

Exclusion criteria

Age under 18 or above 55 years, relevant neurological or psychiatric disease, use of hypnotics or other drugs that affect muscle tone, the EEG or the sleep-wake cycle

Study design

Design

Study type: Observational non invasive

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

Recruitment

NL

Recruitment status:	Recruitment stopped
Start date (anticipated):	09-01-2012
Enrollment:	15
Type:	Actual

Ethics review

Approved WMO

Date:	10-06-2011
Application type:	First submission
Review commission:	METC Leids Universitair Medisch Centrum (Leiden)

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	NL34543.058.10

Study results

Date completed: 09-02-2012

Summary results
Trial ended prematurely