Effects of skills training on motor performance and cortical excitability in first-year dentistry students

Published: 24-07-2019 Last updated: 10-04-2024

* 1A: Do dental students show more improvement on a fine motor task during their first study years than medical students?* 1B: Do dental students show changes in corticospinal excitation and inhibition during their first study years? Do these...

Ethical review	Approved WMO
Status	Recruitment stopped
Health condition type	Other condition
Study type	Observational non invasive

Summary

ID

NL-OMON49027

Source ToetsingOnline

Brief title First Year Dental Skills (THK-Skills)

Condition

• Other condition

Synonym healthy subjects

Health condition

basaal niet-medisch onderzoek

Research involving

Human

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Sponsors and support

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

Intervention

Keyword: cortical excitation, motor learning, motor skills

Outcome measures

Primary outcome

Fine motor tasks

- Number of pins positioned correctly in the four parts of the mPPT (i.e. task

performance with the left hand, right hand, simultaneously with left and right

hand, and an assembly task in which the left and right hand alternate)

- Score on the resopal-drilling plate (max score 19 points; see appendix K6).

TMS

- Amplitude of the MEP and MEP recruitment curve; short intracortical

inhibition (SICI)

Secondary outcome

- Scores on the skills practical as part of the first years of the dentistry

study.

Study description

Background summary

How motor skills are acquired and represented in the motor cortex is still unknown. Most experiments evaluate practice effects and the associated changes in the corticospinal excitability only during limited time (days to a week). Since dentistry students spend considerable time practicing their motor skills (starting in their first year) we want to follow long-term progression in motor skills performance and associated changes in cortical excitation and inhibition in students during their years of dentistry.

Study objective

* 1A: Do dental students show more improvement on a fine motor task during their first study years than medical students?

* 1B: Do dental students show changes in corticospinal excitation and inhibition during their first study years? Do these changes differ from medical students?

* 1C: Does the performance on the generalized fine motor task performance associate with the performance on the Resopal drilling task?

Study design

This study is an exploratory study that consists of a longitudinal case-control experiment that consists of three parts (motor task, a dental drilling task and transcranial magnetic stimulation)

Study burden and risks

Students have to invest time (5 times) to complete the tasks (max 2hours per session). The techniques have no know risks.

Contacts

Public Universitair Medisch Centrum Groningen

Hanzeplein 1 Groningen 9700AV NL **Scientific** Universitair Medisch Centrum Groningen

Hanzeplein 1 Groningen 9700AV NL

Trial sites

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Listed location countries

Netherlands

Eligibility criteria

Age

Adults (18-64 years) Elderly (65 years and older)

Inclusion criteria

first year dentistry or medical student

Exclusion criteria

Neurological or muscle disorders

Study design

Design

Observational non invasive
Other
Non-randomized controlled trial
Open (masking not used)

Recruitment

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Primary purpose: Other

NL	
Recruitment status:	Recruitment stopped
Start date (anticipated):	09-09-2019
Enrollment:	70
Туре:	Actual

Ethics review

Approved WMO	
Date:	24-07-2019
Application type:	First submission
Review commission:	METC Universitair Medisch Centrum Groningen (Groningen)
Approved WMO	
Date:	24-08-2020
Application type:	Amendment
Review commission:	METC Universitair Medisch Centrum Groningen (Groningen)
Approved WMO	
Date:	09-06-2021
Application type:	Amendment
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 CCMO ID NL70325.042.19