Wheelchair propulsion: you need to learn it

No registrations found.

Ethical review	Positive opinion
Status	Recruiting
Health condition type	-
Study type	Observational non invasive

Summary

ID

NL-OMON20592

Source
Nationaal Trial Register

Health condition

Spinal cord injury, dwarslaesie

Sponsors and support

Primary sponsor: Center for Rehabilitation
University Medical Center Groningen
Source(s) of monetary or material Support: University Medical Center Groningen
Stichting Beatrixoord Noord-Nederland

Intervention

Outcome measures

Primary outcome

The primary study parameter is the mechanical efficiency (ratio of power output and energy expenditure)

Secondary outcome

The secondary study parameters include: propulsion technique variables, peak exercise

capacity (VO2 max, heart rate, RPE), shoulder load during submaximal exercise testing, daily wheelchair activity measured with accelerometers , score on the wheelchair skill tests, outcomes of the questionnaires, maximal isometric force

Study description

Background summary

Study is performed in the Netherlands. Prospective longitudinal cohort pilot study to monitor and describe the learning process of 15 wheelchair-dependent participants with recent spinal cord injury. Additionally, 15 experienced wheelchair users with chronic spinal cord injury will be tested cross-sectionally in order to compare the outcomes of the wheelchair motor learning process on a short and long term comparing unexperienced and experienced wheelchair users.

Study objective

Rationale: Wheelchair dependency is a result of disease or trauma that irreversibly impairs the ability to walk. Handrim wheelchair propulsion provides freedom of mobility but also contributes to shoulder overuse injuries and pain which can potentially lead to an inactive lifestyle. It is hypothesized that a proper propulsion technique helps to prevent some of the strain resulting from wheelchair use. Evidence-based guidelines for practice protocols that would enhance the motor learning process and minimize the injury risk are missing since the learning process of wheelchair propulsion in the early stages of rehabilitation is unknown.

Objective: To monitor and describe the natural motor learning of handrim wheelchair propulsion during usual care in a Dutch spinal cord injury rehabilitation centre. Motor learning is operationalized as change in mechanical efficiency, propulsion technique and level of wheelchair-related skills over time.

Study design

In this observational study 15 longitudinal participants will be tested on their wheelchair skills at the beginning of active in-patient rehabilitation, 6 weeks later, at discharge from clinical in-patient rehabilitation and shortly after discharge. The testing will include (sub)maximal exercise tests in a wheelchair on a treadmill, a number of specific wheelchair skills test and a set of questionnaires. Additionally, during the first 6 weeks of active rehabilitation, the mechanical efficiency and propulsion technique will be determined weekly during a submaximal wheelchair exercise test on a treadmill. At regular intervals wheelchair-related daily activity will be systematically monitored to evaluate the amount of actual wheelchair practice during rehabilitation. 15 Experienced wheelchair users will be tested cross-sectionally at two occasions, once on the full test battery and once with only a submaximal wheelchair exercise test, during which the joint compression force in the shoulder will be evaluated and compared to the unexperienced participants.

Intervention

Prospective longitudinal cohort pilot study to monitor and describe the learning process of 15 wheelchair-dependent participants with recent spinal cord injury. Additionally, 15 experienced wheelchair users with chronic spinal cord injury will be tested cross-sectionally in order to compare the outcomes of the wheelchair motor learning process on a short and long term comparing unexperienced and experienced wheelchair users.

Contacts

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Eligibility criteria

Inclusion criteria

• Spinal cord injury;

• Expected manual wheelchair dependency;

• 18 – 65 years;

• Recent spinal cord injury (for the longitudinal group)

• Time since spinal cord injury > 2 year (for the experienced group).

Exclusion criteria

• Cardiovascular contra-indications for testing according to the American College of Sports Medicine (ACSM) guidelines (ACSM, 1998), or a resting diastolic blood pressure above 90 mm Hg or a resting systolic blood pressure above 180 mm Hg;

• Insufficient knowledge of Dutch language to understand the test instructions;

• Progressive disease e.g. cancer or multiple sclerose;

• Psychiatric problem;

• Pregnancy

Study design

Design

Study type:	Observational non invasive
Intervention model:	Other
Masking:	Open (masking not used)
Control:	N/A , unknown

Recruitment

NL

Recruitment status:	Recruiting
Start date (anticipated):	01-07-2016
Enrollment:	30
Type:	Anticipated

Ethics review

Positive opinion

Date:	15-08-2017
Application type:	First submission

Study registrations

Followed up by the following (possibly more current) registration

ID: 43255
Bron: ToetsingOnline
Titel:

Other (possibly less up-to-date) registrations in this register

No registrations found.

In other registers

Register	ID
NTR-new	NL6438
NTR-old	NTR6617
CCMO	NL57063.042.16
OMON	NL-OMON43255

Study results