validity and test-retest reliability of the Steep Ramp Test in elderly persons

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

Summary

ID

NL-OMON42897

Source
ToetsingOnline

Brief title
Steep Ramp Test in Elderly

Condition

- Other condition

Synonym
no specific disease

Health condition

geen specifieke aandoening. deelnemer wordt niet geselecteerd op aandoening.

Research involving
Human

Sponsors and support

Primary sponsor: Fysiotherapie Rijnwaarden
Source(s) of monetary or material Support: geen financiering

Intervention

Keyword: Elderly, endurance testing, physical fitness, Steep ramp test

Outcome measures

Primary outcome

The primary outcomes are VO2piek and WRpiek. To examine the validity the consistency between WRpeak and VO2peak will be tested. The validity is found good when $r > 0.75$ $p < 0.05$. To examine the reliability the relationship between the WRpiek of SRT1 and WRpiek SRT 2 will be tested. Reliability is found good when ICC > 0.80.

Secondary outcome

The secondary study parameter is the BORG-scale before and after the tests. To investigate if there is a relationship between the subjectively scored fatique after the test and the result of the cycle test, the relationship between the BORG-scale and WRpeak of the SRT and VO2peak of the CPET is tested.

Study description

Background summary

Clinimetrics is important to evaluate and to understand the health status and progress of diseases in elderly. Interventions to improve exercise habits require good baseline. Endurance should be measured at baseline. It is important to understand the physical fitness to establish a good workout intensity to evaluate training. This makes the physical therapy more transparent and improves quality.
To determine physical fitness VO2max (maximal oxygen uptake) is one of the most

common used parameters. The gold standard is the Cardiopulmonary Exercise Test (CPET). The CPET is a cycle test which measures oxygen uptake by gas analysis and heart rate. The test takes a lot of time. The CPET is expensive due to special analysis equipment and the need of trained personnel to carry out the test. Due to the costs and the need of trained personnel, the CPET is not often present in primary care and physiotherapy clinics. The physiotherapist needs a short test that does not require specially trained personnel or expensive equipment.
Currently the Astrand test is a widely used exercise test, but it is not a useful test for clinical practice.
The Steep Ramp Test (SRT) is a short test for physical fitness. The SRT can calculate an estimate of VO2max. The test takes about 6 minutes, including warm-up. This test has a simple protocol in which every 10 seconds the wattage is increased by 25Watt. No gas analysis or pulse measurement is required. This test is easy to perform , takes little time and does not require special equipment.
Multiple studies have proven that the SRT is valid and reliable for various populations. This test is originally designed to determine the exercise intensity of an interval training at patients with chronic heart failure. It has been shown in earlier research subjects went to their limits, but their heart rate and blood pressure during the SRT remained relatively low compared to the CPET. SRT seems a good clinical suitable and useful test to measure endurance in elderly in primary care. However the reliability and validity of the SRT in elderly is unknown.

Study objective

The aim of this study is to determine the criterion validity and test-retest reliability of the Steep Ramp test to measure endurance in elderly aged 55 years and older. To examine the criterion validity of the SRT in elderly, the test will be compared to the CPET. The CPET is regarded as gold standard. Reliability is examined by the test -retest reliability

Study design

This study is a validity and reliability study. Participants will perform twice the SRT and perform one CPET on three different test days. First, the validity examination is performed in which the order of the tests will be randomized. Then, there will be a second SRT.
The Workrate peak (WRpeak) of the first SRT will be compared with the WRpeak of the second SRT for reliability. To examine the validity of the WRpeak the SRT will be compared with the VO2peak of the CPET. Two questionnaires *Nederlandse Norm Gezond Bewegen* (NNGB) and *Groninger Frailty Index* (GFI) will be completed and anthropometric measurements will be done.

Study burden and risks

Participants perform twice the SRT and once the CPET. The participants completed questionnaires NNGB and GFI. The exercise tests and questionnaires are standard tests and questionnaires from clinical practice.
The SRT demands maximum peripheral load. It has no complications in previous studies in patients with poor physical fitness. The CPET is a maximum test. In general there are few complications in this test. Through proper screening, complications can be reduced even more.
In this study people with cardio respiratory disorders, cardiovascular disorders or musculoskeletal disorders who are not allowed to exert maximum, will be excluded. If pressure or pain on the chest, dizziness or other form of illness have been experienced by a researcher or participant, the test will be stopped immediately. The test will also be stopped when the saturation decreases with more than 5% or will be lower than 85%.
By performing this study, it may be possible to replace the CPET by the SRT. The endurance measurement with the SRT is less demanding for the participants and involves less costs involved for the performers.

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

• Participant is 55 years or older.
• Participants can cycle .

Exclusion criteria

Cardiorespiratory disorders , cardiovascular disorders or musculoskeletal disorders which participants are not allowed to exert maximum.;This will be screened using the PAR - Q . When a participant answered a question with 'yes' consultations will be held with the doctor. The doctor determines whether the participant may participate in the research.

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):	31-08-2016
Enrollment:	50
Type:	Actual

Ethics review

Approved WMO

Date:	30-08-2016

Application type:	First submission
Review commission:	METC Isala Klinieken (Zwolle)

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	NL57986.075.16