

Submaximal exercise testing to assess the anaerobic threshold in neuromuscular diseases

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Ethische beoordeling	Positief advies
Status	Werving gestart
Type aandoening	-
Onderzoekstype	Observationeel onderzoek, zonder invasieve metingen

Samenvatting

ID

NL-OMON27717

Bron

NTR

Verkorte titel

SMARTER

Aandoening

Slowly progressive neuromuscular diseases

Ondersteuning

Primaire sponsor: Amsterdam UMC

Overige ondersteuning: Amsterdam Movement Sciences

Onderzoeksproduct en/of interventie

Uitkomstmaten

Primaire uitkomstmaten

Validity of statistical model to determine the anaerobic threshold out of easy to measure indirect variables (heart rate variability, rating of perceived exertion, Talk Test, age, gender, resting heart rate)

Toelichting onderzoek

Achtergrond van het onderzoek

The anaerobic threshold (AT), a submaximal direct marker of aerobic fitness, is used for exercise intensity prescription in the healthy population and other chronic diseases, and may also be useful in NMD. The AT is used as an intensity target which distinguishes between low- and high intensity exercise zones, enabling individuals to exercise in tailored heart rate zones. However, the feasibility and reliability of the AT assessment through submaximal exercise testing in slowly progressive NMDs is not yet known. Further, a major disadvantage of conventional assessment of the AT is that it is a complex and lengthy procedure requiring expensive respiratory gas analysis equipment, and is not readily available in all healthcare settings. Therefore, the next innovative step is to develop a predictive model to easily determine the AT in NMD, i.e. without the use of expensive gas analysis equipment.

The study objective is (1) to determine whether the AT can be identified in individuals with slowly progressive NMD through submaximal exercise testing with respiratory gas analysis, (2) to determine the reliability of the AT assessment in individuals with slowly progressive NMD through submaximal exercise testing with respiratory gas analysis, and (3) to develop a predictive model using easy to measure variables to indirectly assess the AT through submaximal exercise testing without respiratory gas analysis in individuals with slowly progressive NMD.

Doel van het onderzoek

We hypothesize that the assessment of the anaerobic threshold through submaximal exercise testing is feasible and reliable in NMD. Furthermore, we hypothesize that we will be able to develop a valid predictive model to determine the anaerobic threshold using indirect, easy to measure variables.

Onderzoeksopzet

Participants will complete three testing days, separated by a minimum of three days. On the first and second testing day, two submaximal exercise tests will be performed, one with and one without respiratory gas analysis. On the third testing day, a maximal exercise test with respiratory gas analysis will be performed.

Onderzoeksproduct en/of interventie

None

Contactpersonen

Publiek

Amsterdam UMC, locatie AMC
Tim Veneman

0205668250

Wetenschappelijk

Amsterdam UMC, locatie AMC
Tim Veneman

0205668250

Deelname eisen

Belangrijkste voorwaarden om deel te mogen nemen (Inclusiecriteria)

In order to be eligible to participate in this study, a subject must meet all of the following criteria:

- presence of slowly progressive NMD.
- ability to perform a maximal exercise test on an arm or bicycle ergometer.
- minimum age of 18 years.

Belangrijkste redenen om niet deel te kunnen nemen (Exclusiecriteria)

A potential subject who meets any of the following criteria will be excluded from participation in this study:

- absolute contraindication for exercise (based on the guidelines by the American College of Sports Medicine)
- unable to follow verbal or written instructions.
- insufficient mastery of the Dutch or English language.

Onderzoeksopzet

Opzet

Type:	Observationeel onderzoek, zonder invasieve metingen
Onderzoeksmodel:	Anders
Toewijzing:	N.v.t. / één studie arm
Blinding:	Open / niet geblindeerd
Controle:	N.v.t. / onbekend

Deelname

Nederland	
Status:	Werving gestart
(Verwachte) startdatum:	24-03-2021
Aantal proefpersonen:	50
Type:	Verwachte startdatum

Voornemen beschikbaar stellen Individuele Patiënten Data (IPD)

Wordt de data na het onderzoek gedeeld: Nog niet bepaald

Toelichting

Not applicable

Ethische beoordeling

Positief advies	
Datum:	24-03-2021
Soort:	Eerste indiening

Registraties

Opgevolgd door onderstaande (mogelijk meer actuele) registratie

Geen registraties gevonden.

Andere (mogelijk minder actuele) registraties in dit register

Geen registraties gevonden.

In overige registers

Register	ID
NTR-new	NL9362
Ander register	METC AMC : METC 2020_236

Resultaten

Samenvatting resultaten

Not applicable