Perturbation-based gait training

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Perturbation-based gait training improves dynamic stability and reactive responses in daily life in older adults. Therefore, the risk of falling can be reduce by training.

Ethische beoordeling	Positief advies
Status	Werving nog niet gestart
Type aandoening	-
Onderzoekstype	Interventie onderzoek

Samenvatting

ID

NL-OMON21354

Bron
Nationaal Trial Register

Verkorte titel
REACT study

Aandoening

balance, aging, gait stability, reactive response

Ondersteuning

Primaire sponsor: Vrije Universiteit Amsterdam
Overige ondersteuning: This project has received funding from the European Union’s Horizon 2020 research and innovation programme under the Marie Skùodowska-Curie grant agreement No 721577

Onderzoeksproduct en/of interventie

Uitkomstmaten

Primaire uitkomstmaten

The primary outcome is dynamic gait stability in daily life, based on inertial sensor data.

Toelichting onderzoek

Achtergrond van het onderzoek

The training program involves use of unpredictable, randomized perturbation in anterior-posterior direction while walking under cognitive dual-task conditions. Perturbation intensity and base walking speed will increase over a 4-week training program. The program was developed with regards to well-established principles of motor learning, such as specificity, challenging, adaption-progression and variability. Specific goals are the fall risk reduction by improving daily life gait stability and by improving reactive response to perturbation in means of faster recovery of balance to be able to resist a balance loss with resulting fall and to continue walking.
A randomized controlled trial will be performed to evaluate the efficacy of this gait training program. A total of 70 community-dwelling older adults with either a history of falls and/or difficulties with mobility and balance will be assigned to either the experimental group with gait perturbations or a control group. Before and after the intervention daily life gait stability will be tested with one week of accelerometry as well as performance on clinically often used balance and gait tests.

Doel van het onderzoek

Perturbation-based gait training improves dynamic stability and reactive responses in daily life in older adults. Therefore, the risk of falling can be reduce by training.

Onderzoeksopzet

The measurements are done at baseline and post-intervention. Data will be recorded continuously over the training period.

Onderzoeksproduct en/of interventie

The perturbation-based gait training programme is a 4-week reactive gait training on a treadmill, with simulated slips and trips, in combination with cognitive dual tasks. The control intervention is a conventional 4-week training treadmill under cognitive dual task conditions.

Contactpersonen

Publiek

Wetenschappelijk

Deelname eisen

Belangrijkste voorwaarden om deel te mogen nemen (Inclusiecriteria)

older adults aged 65 years and older at risk of falling

Belangrijkste redenen om niet deel te kunnen nemen (Exclusiecriteria)

-MoCa < 24 points

-Body weight over 135 kg

-Body height over 2.0 m

-Open skin lesion or bandage in the area of the harness contact

-Neurological comorbidities, e.g. Parkinson’s disease, multiple sclerosis, diabetic neuropathy, stroke, polyneuropathy

-Lower extremity fractures or torn ligaments in the past 6 months

-Not able to walk without walking aid at self-preferred speed

-Hip or knee joint replacement in the past 6 months

-Uncontrolled comorbid conditions, e.g. heart or lung/breathing diseases where physical activity at medium intensity is forbidden

Onderzoeksopzet

Opzet

Type:	Interventie onderzoek
Onderzoeksmodel:	Parallel
Toewijzing:	Gerandomiseerd
Blindering:	Enkelblind
Controle:	Actieve controle groep

Deelname

Nederland

Status:	Werving nog niet gestart
(Verwachte) startdatum:	01-02-2019
Aantal proefpersonen:	70
Type:	Verwachte startdatum

Ethische beoordeling

Positief advies

Datum:	04-01-2019
Soort:	Eerste indiening

Registraties

Opgevolgd door onderstaande (mogelijk meer actuele) registratie

ID: 45859
Bron: ToetsingOnline
Titel:

Andere (mogelijk minder actuele) registraties in dit register

Geen registraties gevonden.

In overige registers

Register	ID
NTR-new	NL7461
NTR-old	NTR7703

Register	ID
CCMO	NL66322.028.18
OMON	NL-OMON45859

Resultaten

Samenvatting resultaten

1. Effects of a 4-week perturbation-based treadmill training in terms of improvements in dynamic gait stability in daily life compared to conventional treadmill training.

2. Effects of a 4-week perturbation-based treadmill training on the amount of physical activity in daily life compared with conventional treadmill training.

3. Effects of a 4-week perturbation-based treadmill training on performance on clinical balance tests compared with conventional treadmill training.

4. Validity of the quantified recovery performance (QRP) as a measure of gait stability.