Reactive balance training to improve balance control and reduce falls in older adults: a randomized controlled trial.

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To determine the effect and acceptability of a three-session reactive balance training intervention with CAREN, on balance control measured with the mini BESTest in community-dwelling older adults (>=65 years) who visit the trauma outpatient...

Ethical review	Approved WMO
Status	Recruiting
Health condition type	Other condition
Study type	Interventional

Summary

ID

NL-OMON55445

Source
ToetsingOnline

Brief title
Reactive balance training in older adults

Condition

- Other condition

Synonym
decreased balance control, impaired balance control

Health condition

Verminderde balans bij het ouder worden

Research involving
Human

Sponsors and support

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

Intervention

Keyword: Falls, Physical training, Reactive balance

Outcome measures

Primary outcome

The main study parameter is balance control measured with the mini BESTest.

Secondary outcome

Secondary study parameters are prospective falls incidence measured with falls

diaries until six months after the intervention, acceptability of the

intervention, and fear of falling measured with the FES-I.

Study description

Background summary

Falls are a common cause of injury and hospitalization among older adults. A large percentage (40-73%) of older adults are afraid of falling. One in three older adults aged 65 and older experience a fall each year. Having previously fallen significantly increases the risk of experiencing another fall in the future. Balance training can effectively reduce fall incidence in older adults. Until recently, most balance training interventions have focused on proactive balance, which is an important part of maintaining balance in voluntary or expected movements. However, many falls occur due to unexpected balance perturbations, forcing the individual to rely on reactive balance control. Therefore, there has been increasing interest in reactive balance training as an intervention to decrease falls in older adults. This is a form of training that specifically aims to improve reactive balance control after destabilizing perturbations in a safe and controlled environment. Evidence for the effectiveness of this type of training as a way to reduce falls in older adults has been emerging. However the optimal type, duration and frequency of training in a clinical setting remains unclear. This study will test a training

protocol based on an earlier review in a clinical setting.

Study objective

To determine the effect and acceptability of a three-session reactive balance training intervention with CAREN, on balance control measured with the mini BESTest in community-dwelling older adults (>=65 years) who visit the trauma outpatient clinic after a fall, in comparison to usual care.

Study design

Mixed methods, Experiment (RCT) combined with semi-structured interviews in a subpopulation from the intervention group

Intervention

Usual care physical therapy with (N=40) or without (N=40) three sessions of reactive balance training in a Computer Assisted Rehabilitation Environment.

Study burden and risks

Both groups will visit the MUMC+ three times for measurement sessions of thirty minutes each. The falls diaries will take approximately 5 minutes once a month to fill in during the six months after completing the intervention. The control group will receive a referral for usual care physical therapy for the injuries sustained during the fall incident. The intervention group will receive three additional sessions of reactive balance training. Part of the intervention group will be interviewed once (approximately 30 minutes). A possible burden is extra travel to visit the MUMC+, all travel costs to participate in the study will be compensated. Subjects in the intervention group may experience muscle soreness after training. Subjects will wear a safety harness, which is made of soft fabrics, attached to a lifeline above the treadmill at all times during training. This harness protects against falling off the system or hitting the knees on the treadmill in the case of an unsuccessful balance recovery, which makes walking on the CAREN safer than walking on a regular treadmill.

Contacts

Public
Medisch Universitair Ziekenhuis Maastricht

P. Debyelaan 25
Maastricht 6229 HX
NL

Scientific
Medisch Universitair Ziekenhuis Maastricht

P. Debyelaan 25
Maastricht 6229 HX
NL

Trial sites

Listed location countries

Netherlands

Eligibility criteria

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

Inclusion criteria

Age 65 or older.
Community-dwelling.
Able to walk independently without a walking aid for >15 minutes.
Recently experienced a fall.

Exclusion criteria

Diagnosed with osteoporosis.
Any disease or disorder that may influence the safety of training (e.g.
uncontrolled cardiopulmonary disease).
Recent fracture or severe contusion of the lower extremities, back or shoulders.
Falls caused by third parties or during sports activities.
Uncorrected vision problems, history of syncope, use of medication known to
increase fall risk or high doses of painkillers.

Study design

Design

Study type:	Interventional
Intervention model:	Parallel
Allocation:	Randomized controlled trial
Masking:	Single blinded (masking used)
Control:	Active
Primary purpose:	Treatment

Recruitment

NL

Recruitment status:	Recruiting
Start date (anticipated):	27-03-2019
Enrollment:	80
Type:	Actual

Ethics review

Approved WMO Date:	14-02-2019
Application type:	First submission
Review commission:	METC academisch ziekenhuis Maastricht/Universiteit Maastricht, METC azM/UM (Maastricht)
Approved WMO Date:	09-10-2019
Application type:	Amendment
Review commission:	METC academisch ziekenhuis Maastricht/Universiteit Maastricht, METC azM/UM (Maastricht)

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	NL67131.068.18
Other	NL7680

Study results

Date completed:	01-08-2023
Actual enrolment:	82