

The effects of a short-term exergame balance training on postural control and balance recovery reactions of older adults

Published: 12-05-2015

Last updated: 15-05-2024

To establish if a short period of exergame balance training will affect postural control and/or balance recovery reactions in older adults.

Ethical review	Approved WMO
Status	Will not start
Health condition type	Other condition
Study type	Interventional

Summary

ID

NL-OMON42564

Source

ToetsingOnline

Brief title

Postural control after an exergame training

Condition

- Other condition

Synonym

postural control; balance

Health condition

houdingscontrole en balansherstelreacties van ouderen

Research involving

Human

Sponsors and support

Primary sponsor: Universitair Medisch Centrum Groningen

Source(s) of monetary or material Support: SPRINT SNN tender

Intervention

Keyword: Balance, Exergame training, Fall prevention, Postural control

Outcome measures

Primary outcome

Postural control in terms of Center of Mass (CoM) and Center of Pressure (CoP) displacements and accelerations before and after a short-term exergame training.

Secondary outcome

Not applicable

Study description

Background summary

Falls are one of the greatest concerns among older adults, because the incidents are high and they lead to severe consequences. The extent of the problem will continue to expand as the number of older people is expected to increase dramatically over the next few decades. An important risk factor for falls in older adults is an impaired postural control, which is defined as the act of maintaining, achieving or restoring a state of balance during any posture or activity. A growing number of studies show the potential of video games incorporating training (exergames) to improve postural control. However, scarce evidence is available that these interventions actually contribute to a decrease in fall risk. In previous studies indicators for improved postural control were identified, by examining age-related differences in postural control and balance recovery reactions in response to a *near* fall. By studying the effects of a short-term exergame balance training (ice-skating game) on these indicators, insight into within subject improvements on postural control and/or balance recovery reactions after playing an exergame will be gained. The results will provide further insights in the prospects and possible effects of a long-term exergame training to prevent fall risk, required before

a large clinical (randomized) trial can be conducted to validate the exergame training.

Study objective

To establish if a short period of exergame balance training will affect postural control and/or balance recovery reactions in older adults.

Study design

Before-after design to study within-subject effects in postural control and balance recovery reactions in response to a short-term exergame training.

Intervention

The intervention group receives a short-term exergame training (virtual ice skating). The control group will play a conventional *fun* game (Angry Birds) on the iPad. Both groups will perform three pre- and post-tests, which consist of a balance perturbation test, a target-directed weight-shifting test and a one leg balancing test.

Study burden and risks

The burden of playing the exergame and performing the pre- and post-tests is moderate and not higher than regular activities in daily life. Playing the exergame by older adults is approved in a previous study (METC nr. 2014/204) and found to be safe during a six-week exergame intervention in the home environment of older adults. All three pre- and post-tests are performed and approved in previous studies (METC nr. 2013/271). Participants will rest between tests and can take extra rest whenever requested. Time between trials of the pre- and post-tests will be enough to let the participants recover and prepare for upcoming trials. Participants are wearing a harness during all trials of the balance perturbation test and an assistant remains at the side of the subjects at all times to prevent falling. During the experiments a certified CAREN operator and two persons to lead the test will be present at all times. Therefore the risk associated with participation can be considered negligible and the burden can be considered minimal.

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

Older adults aged between 65 and 90 that are able to walk 15 minutes without aids, understand verbal instructions and the *written* informed consent and information letter and have the visual ability to perceive the information presented on the screen.

Exclusion criteria

Older adults who are not able to walk without aids, with orthopaedic or neurological disorders which prevent them from standing and reaching, have visual or hearing deficiencies that prevent them from perceiving or hearing presented information or/and have cognitive impairments that prevent them from understanding our instructions. Regular skaters (i.e. weekly training) are excluded as well.

Study design

Design

Study type:	Interventional
Intervention model:	Other
Allocation:	Non-randomized controlled trial
Masking:	Open (masking not used)
Control:	Active
Primary purpose:	Prevention

Recruitment

NL	
Recruitment status:	Will not start
Enrollment:	30
Type:	Anticipated

Ethics review

Approved WMO	
Date:	12-05-2015
Application type:	First submission
Review commission:	METC Universitair Medisch Centrum Groningen (Groningen)

Study registrations

Followed up by the following (possibly more current) registration

No registrations found.

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

ID: 22352
Source: NTR
Title:

In other registers

Register	ID
CCMO	NL53309.042.15
Other	nmb
OMON	NL-OMON22352