Beam walking to assess dynamic balance in health and disease

Published: 15-04-2019 Last updated: 09-04-2024

Primary objective: To determine if beam walking performance vis-à-vis the traditionally used balance outcomes predicts more accurately fall risks and falls.Secondary objectives: To determine: 1. Reliability and 2. Lifespan and patient reference...

Ethical review	Not approved
Status	Will not start
Health condition type	Other condition
Study type	Observational non invasive

Summary

ID

NL-OMON48438

Source ToetsingOnline

Brief title Effects of age on dynamic balance

Condition

• Other condition

Synonym aging, senescence

Health condition

healthy aging

Research involving Human

Sponsors and support

Primary sponsor: Centrum voor Bewegingswetenschappen Source(s) of monetary or material Support: Ministerie van OC&W

Intervention

Keyword: Aging, Balance, Falls, Gait

Outcome measures

Primary outcome

- Physical Activity
- Fall History
- Falls efficacy scale-international (FES-I)
- Balance confidence
- Differentiation between fallers and non-fallers
- Mobility (SPPB)
- Static steady-state balance
- Proactive (anticipatory) balance
- Dynamic Balance (beam)
- Upper extremity strength
- Lower extremity strength
- Global cognition
- Attention and executive function
- Processing speed and intelligence fluidity
- Verbal and visual memory span and working memory

Secondary outcome

N.A.

Study description

Background summary

Gait, balance, and muscle impairments are associated with falls in ~30% and ~50% of adults age over 65 and 80, respectively. Nearly 50% of outdoor falls occur while walking. Measuring dynamic balance is thus important to characterize the current state of postural control and identify those who are likely to experience severe levels of mobility disability, including falls in the future. To date, dynamic balance has been inferred from *functional tests* that rely mostly on gait speed and fail to quantify an actual balance loss while walking. Beam walking could measure dynamic balance more accurately.

Study objective

Primary objective: To determine if beam walking performance vis-à-vis the traditionally used balance outcomes predicts more accurately fall risks and falls.

Secondary objectives: To determine: 1. Reliability and 2. Lifespan and patient reference values for dynamic balance as determined by beam walking with and without cognitive dual-tasking, and 3. The statistical relationship between beam walking performance and selected *functional tests* currently used to measure dynamic balance.

Study design

This observational, cross-sectional study contains of a session wherein participants are asked to fill in a few questionnaires, perform tasks of daily living (static balance test, standing up from a chair, 3 meter walk), walk on a beam, and perform cognitive tests. 3 to 7 days after this first session a second session will be done where only beam walking will be performed. All participants age 50+ will report fall history at test 1 and at 6 and 12 months follow-ups.

Study burden and risks

The participants will visit the Central of Human Movement Sciences once. They will be asked to fill in questionnaires, perform tasks of daily living + walk on a beam, and perform cognitive tasks. The risks are minimal and not bigger than in daily life. The participants are allowed to take a break between the measurements if necessary.

Contacts

Public Selecteer

Antonius Deusinglaan 1 groninggen 9700AD NL Scientific Selecteer

Antonius Deusinglaan 1 groninggen 9700AD NL

Trial sites

Listed location countries

Netherlands

Eligibility criteria

Age

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

Inclusion criteria

In this research, male and female volunteers aged over 20 will have good health, balance and mobility.

Exclusion criteria

Positive answers to any of the following questions results in exclusion from the study:

- unable to walk 10m independently
- knee or hip joint replacements * 6 months before enrollment
- uncontrolled cardiovascular disease or angina
- neuromuscular disease
- diagnosed Parkinson*s Disease (PD), multiple sclerosis (MS) or stroke

4 - Beam walking to assess dynamic balance in health and disease 10-05-2025

- cancer therapy * 3 months before enrollment
- severe asthma or chronic bronchitis
- diagnosed diabetes with neuropathy
- poor and uncorrected vision
- score * 27 on the Mini-Mental State Examination (MMSE).
- score * 10 for mobility in Short Physical Performance Battery (SPPB)

Study design

Design

Study type: Observational non invasive		
Masking:	Open (masking not used)	
Control:	Uncontrolled	
Primary purpose:	Prevention	

Recruitment

NL	
Recruitment status:	Will not start
Enrollment:	108
Туре:	Anticipated

Ethics review

Not approved	
Date:	15-04-2019
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

No registrations found.

In other registers

Register ClinicalTrials.gov CCMO

ID NCT03532984 NL68666.042.19