

# The effects of a combined functional gait- and strength training on stability of walking and rate of bone turn over in healthy elderly.

No registrations found.

<b>Ethical review</b>	Positive opinion
<b>Status</b>	Recruiting
<b>Health condition type</b>	-
<b>Study type</b>	Interventional

## Summary

### ID

NL-OMON23185

### Source

NTR

### Health condition

Ageing  
Inactivity

## Sponsors and support

**Primary sponsor:** VU University

**Source(s) of monetary or material Support:** VU University

## Intervention

## Outcome measures

### Primary outcome

1. Stability of unperturbed walking (Local dynamic stability and variability of walking);
2. Stability of perturbed walking (size of deflection from normal walking pattern and speed of

return to normal walking pattern);

3. Indicators of bone turnover (markers of bone degeneration: CTx; markers of bone synthesis: osteocalcin and P1NP).

### **Secondary outcome**

1. (Changes in) quality of the heel bone (ultrasound);
2. (Changes in) systemic growth factors (e.g. IGF-1 and Myostatin);
3. (Changes in) efficiency of walking (O<sub>2</sub>/kg/m);
4. Relation between (changes in) muscle performance parameters and (changes in) stability of walking;
5. Relation between (changes in) bone turnover parameters and (changes in) muscle performance parameters.

## **Study description**

### **Background summary**

Physical inactivity becomes more prominent as people age. Physical inactivity and ageing results in decreasing bone and muscle mass and decreased muscle functioning, which results in increasing difficulty in performing daily activities. Another problem with increasing age is the increased incidence of falls. Falls often lead to decreased functioning, reduced participation, early placement in nursing homes and premature death.

The aim of this study is to investigate if a 16 weeks training program with combined functional gait and strength training results in improved stability of walking and improved bone turnover.

### **Study objective**

1. The training program will result in improved stability of walking;
2. The training program will result in improved rate of bone turnover (indicative of improvement in bone mass).

### **Study design**

1. Baseline;

2. Baseline + 16 weeks (post training);
3. Baseline + 24 weeks (follow up).

## **Intervention**

The intervention consists of 16 weeks of twice weekly combined gait- and strength training in groups of maximally 10 subjects. Each training sessions has a duration of 1 hour. The training will be executed in a gym under supervision of an instructor.

The training will consist of exercises that challenges balance during standing and walking (e.g. standing or walking on a compliant surface) and of exercises that improves muscle function of the lower extremities using body weight and, if possible, small external weights. The difficulty of the exercises will be adapted to individual capabilities.

The control group will not receive a training or other intervention during the trial. The control group will receive a delayed intervention after the final measurement.

## **Contacts**

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## **Eligibility criteria**

### **Inclusion criteria**

1. 65-75 years;

2. Male or female;
3. Community dwelling;
4. No active sports participation for at least 12 months.

Subjects are recruited via advertisements in local newspapers.

## Exclusion criteria

Vascular-, neurological- or musculoskeletal diseases that would interfere with the ability to walk, the use of walking aids or contra-indications for strength testing.

## Study design

### Design

Study type:	Interventional
Intervention model:	Parallel
Allocation:	Randomized controlled trial
Masking:	Open (masking not used)
Control:	N/A , unknown

### Recruitment

NL	
Recruitment status:	Recruiting
Start date (anticipated):	01-04-2010
Enrollment:	40
Type:	Anticipated

## Ethics review

Positive opinion	
Date:	02-07-2010

Application type:

First submission

## 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
NTR-new	NL2319
NTR-old	NTR2425
Other	METC VUmc : 2010/67
ISRCTN	ISRCTN wordt niet meer aangevraagd.

## Study results

### Summary results

N/A