The role of the intrinsic foot muscles in gait and balance in older adults

Published: 20-01-2020
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Primary objective: to examine the association between the size of intrinsic foot muscles and gait biomechanics and balance in older adults.

Ethical review	Approved WMO
Status	Will not start
Health condition type	Other condition
Study type	Observational non invasive

Summary

ID

NL-OMON49190

Source
ToetsingOnline

Brief title
STIFF II

Condition

- Other condition

Synonym
n.v.t.

Health condition

het onderzoek heeft betrekking op de gezonde werking van het bewegingsapparaat

Research involving
Human

Sponsors and support

Primary sponsor: Fontys Hogescholen
Source(s) of monetary or material Support: NWO

Intervention

Keyword: gait, intrinsic foot muscles, older adults, postural balance

Outcome measures

Primary outcome

The association between intrinsic foot muscles' size and a) gait biomechanics,

b) static balance and c) dynamic balance

Secondary outcome

n/a

Study description

Background summary

Falling is highly prevalent among older adults and has serious societal impact. Falls occur mainly during walking as a result of altered gait and/or the inability to maintain postural balance. The size of the foot*s soft tissues (e.g. muscles), assessed with ultrasonography, has been shown to be associated with gait biomechanics and balance in young healthy adults. However, this association has not yet been investigated in the older population.If this association exists, it may be beneficial to strengthen these muscles with exercise therapy, which would be the next step towards the optimization of fall prevention programs.

Study objective

Primary objective: to examine the association between the size of intrinsic foot muscles and gait biomechanics and balance in older adults.

Study design

To address the primary objective and the secondary objective, a cross-sectional study will be performed, consisting of two measurement occasions: one home visit 1-2 weeks prior to motion analysis laboratory measurements. Additionally, the same participants are followed up for a 12 month period in which fall incidents are reported by the participants.

Study burden and risks

Participation does not bring any individual benefits. However, participation contributes to the existing knowledge concerning the role of the intrinsic foot muscles in gait and balance, further eliciting the potential of strengthening these muscles for the prevention of falling. The burden for the participant consists mainly of 1) the time that is spent on the measurement occasions (1 hour and 2,5-3 hours), 2) the necessity of travelling to the motion analysis laboratory, 3) 12 months follow up period for recording monthly fall incidents, 4) the inconvenience of wearing the activity monitor attached to the skin of the thigh for 7 days, and 5) the possibility of questionnaires containing confronting questions or aspects.

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

- 65 years of age or over
- able to ambulate 10 meter without using a walking aid
- able to arrange their own transport to the movement analysis laboratory

Exclusion criteria

Self-reported presence of any of the following conditions/diseases:
- peripheral neuropathy
- rheumatic disease affecting gait
- neurological conditions affecting the neuro-musculoskeletal system
- severe visual impairments that are not corrected by glasses or lenses
- any other known condition or disease that is reported by the person as hindering movement, gait, and/or balance

Self-reported lower limb related musculoskeletal injuries and symptoms:
- painful joints or feet without a preceding provocative activity

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:	52
Type:	Anticipated

Ethics review

Approved WMO

Date:	20-01-2020

Application type:	First submission
Review commission:	METC Maxima Medisch Centrum (Veldhoven)

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
Other	NL TBA
CCMO	NL72099.015.19