Multi-joint coordination in standing balance

No registrations found.

Ethical review	Positive opinion
Status	Pending
Health condition type	-
Study type	Interventional

Summary

ID

NL-OMON29151

Source
Nationaal Trial Register

Health condition

standing balance
elderly
ankle and hip strategy
adaptation

balanshandhaving
ouderen
enkel en heup strategie
adaptatie

Sponsors and support

Primary sponsor: University of Twente
Source(s) of monetary or material Support: STW

Intervention

Outcome measures

Primary outcome

Frequency Response Functions (FRF) describe the dynamic relation between the disturbances and the human responses (ankle and hip angle and corresponding joint torques) in means of amplitude and timing.

Secondary outcome

In addition a human balance control model is fit onto the experimentally derived FRF, to estimate parameters with a physiological meaning, for instance ankle and hip joint passive stiffness, reflexive properties and neural time delays.

Study description

Background summary

N/A

Study objective

Adapatation to stabilizing externally applied force fields reduces postural responses at the ankle and hip

Study design

The primary and secondaire measures are calculated after the measurements have been performed. The available data for the calculation (leg and trunk movement and ankle and hip torques) are measured during the two hour trial, continously

Intervention

To study multi-joint coordination, balance disturbances are externally applied by pushing and pulling at the hips and shoulders. The disturbances contain multiple frequencies ranging from 0.05-5Hz, making the disturbance unpredictable. The disturbances are submaximal, challenging the balance control system, but not intended to make subjects step or fall. In addition, to study adaptation of the ankle and hip strategy, external whole-body force fields are applied, by altering the dynamics of the device and thereby manipulating ankle and hip strategy.

Contacts

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Eligibility criteria

Inclusion criteria

Healthy young subjects aged between 20-30 years

Healthy elderly subjects aged 70 years or older

Ability to stand independently for approximately 5 consecutive minutes

Exclusion criteria

Unable to give informed consent

Current orthopeadic problems

Neurological disorders

A history of cardiac conditions that interfere with physical load

Chronic joint pain, or rheumatoid arthritis

Use of medication with an effect on balance control

pregnancy

Study design

Design

Study type:	Interventional
Intervention model:	Other
Masking:	Open (masking not used)
Control:	N/A , unknown

Recruitment

NL

Recruitment status:	Pending
Start date (anticipated):	01-01-2014
Enrollment:	0
Type:	Anticipated

Ethics review

Positive opinion

Date:	18-12-2013
Application type:	First submission

Study registrations

Followed up by the following (possibly more current) registration

ID: 40406
Bron: ToetsingOnline
Titel:

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

No registrations found.

In other registers

Register	ID
NTR-new	NL4164
NTR-old	NTR4323
CCMO	NL46985.044.13
ISRCTN	ISRCT wordt niet meer aangevraagd.
OMON	NL-OMON40406

Study results

Summary results
N/A