The effect of age on foot structure, foot complaints, plantar pressure and center of pressure in adult women.

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Older women have flatter and broader feet than younger women and demonstrate more foot complaints. Older women have higher peak pressures under the forefoot, lower peak pressures under the heel and a more anterior shifted COP.

Ethische beoordeling	Positief advies
Status	Werving nog niet gestart
Type aandoening	-
Onderzoekstype	Observationeel onderzoek, zonder invasieve metingen

Samenvatting

ID

NL-OMON28979

Bron
Nationaal Trial Register

Verkorte titel
foot structure according to age in women

Aandoening

foot structure, foot complaints, plantar pressure distribution, peak pressure, center of pressure

Ondersteuning

Primaire sponsor: University Medical Center Groningen
Overige ondersteuning: Samenwerkingsverband Noord Nederland

Onderzoeksproduct en/of interventie

Uitkomstmaten

Primaire uitkomstmaten

The primary outcome measure for foot structure is ball circumference

Toelichting onderzoek

Achtergrond van het onderzoek

Background:

The prevalence of falls increases with age. Perturbed balance, due to ill-fitting shoes, is one of the leading causes of falls in healthy ageing people. Specifically, healthy elderly women have an increased risk of falling compared to healthy elderly men. Ill-fitting shoes may be the cause or consequence of foot deformities and many foot complaints. It has been shown that ill fitting shoes increase the chances of falling.

Experience from clinical practice suggests that foot-structure and the prevalence of foot complaints change in the process of ageing, leading to ill fitting shoes, hence contributing to the increased risk of falls in an ageing population. In addition, literature showed that age has also an effect on plantar pressure distribution.

Increased pressures may have an impact on foot structure or the prevalence of foot complaints. Wearing well-fitting shoes is therefore of great importance to reduce foot complaints and increase balance control. However, shoe-fit of off-the-shelf shoes is based on the ‘average’ foot structure of adult people and thus neglects the possible change in foot structure over time in elderly. Therefore, it is of interest to determine the effects of age on foot variables, such as foot structure, foot complaints, plantar pressure distribution and the centre of pressure during standing, as a measure of instability. Results may be used to create new lasts in order to develop well-fitting shoes for the adult population and specifically the elderly. This likely contributes to the decrease of foot complaints and the risk of falling throughout ageing.

Objective: The primary objective is to determine the effect of ageing on ball circumference in adult women. The secondary objectives are to determine the effect of ageing on 1. other foot structure measurements, 2. foot complaints, 3. static and dynamic plantar pressure distribution, 4. static centre of pressure in adult women, 5. determine the fit of women’s shoes by measuring geometry measures of current available lasts for female feet used in the shoe industry 6. to determine the effect of wearing adequate shoes on static and dynamic plantar pressure distribution and COP variables and 7. relate foot structure, foot complaints with plantar pressure distribution and center of pressure measurements.

Study design: This is a cross-sectional, observational study.

Study population: The study population are healthy women ageing 20 – 85 years old.

Nature and extent of the burden and risks associated with participation, benefit and group relatedness: The measurements will be conducted once (approx. one-and-a-half hour) at the Motion Laboratory of the department of Rehabilitationmedicine of the UMCG. Participants are asked to fill out a questionnaire about foot complaints. In addition, a sensibility test of the foot sole (Semmes Weinstein) will be performed, using nylon monofilaments, which are not painful or harmful. Geometry measures of the foot are made using tape measure, a sliding caliper and a 3D scanner, used in regular practice, while standing on an even floor or on a shoe sole with insole and footbed. Plantar pressure distribution is measured using removable insoles during standing and walking (Pedar system). COP is measured using a single force platform. Participants will all be provided with shoes of the same brand and model (standardized shoes).

Doel van het onderzoek

Older women have flatter and broader feet than younger women and demonstrate more foot complaints.
Older women have higher peak pressures under the forefoot, lower peak pressures under the heel and a more anterior shifted COP.

Onderzoeksopzet

Primary and secondary outcome measures are measured during a one 1,5 hour procedure on weekday mornings. During the first half (45 minutes), foot structure measures will be performed using tape measure and a 3D-scanning system. During the second half (45 minutes) plantar pressure and center of pressure measurements will be performed. Participants will be measured only once.

Onderzoeksproduct en/of interventie

specifically ball circumference as a primary outcome measure. Foot structure of 168 female, healthy participants in seven age-groups will be determined (N = 24 in each group; 20-25, 30-35, 40-45, 50-55, 60-65, 70-75 and 80-85 years). Foot structure (ball circumference) will be determined using a tape measure and sliding calliper, and in addition a 3D scanning system (Rodin M4D, France). There are no interventions. Measurements will take up to 1,5 hours. There are no control-groups. Each age-group includes 24 healthy, female participants. The effect of age will be determined using a regression analysis.

Contactpersonen

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Deelname eisen

Belangrijkste voorwaarden om deel te mogen nemen (Inclusiecriteria)

- Being Caucasian female

- Aged between 20 and 85 years old

Belangrijkste redenen om niet deel te kunnen nemen (Exclusiecriteria)

- Sicknesses that have a major influence on gait, such as stroke and Parkinson’s disease,

- Amputation at the level of hip, knee, ankle or foot,

- Ccurrent use of orthopedic footwear and

- The self-reported inability to walk without a walking aid for more than 10 meters.

Onderzoeksopzet

Opzet

Type:	Observationeel onderzoek, zonder invasieve metingen
Onderzoeksmodel:	Parallel
Toewijzing:	Niet-gerandomiseerd
Blindering:	Open / niet geblindeerd
Controle:	N.v.t. / onbekend

Deelname

Nederland

Status:	Werving nog niet gestart
(Verwachte) startdatum:	30-10-2013
Aantal proefpersonen:	168
Type:	Verwachte startdatum

Ethische beoordeling

Positief advies

Datum:	02-09-2013
Soort:	Eerste indiening

Registraties

Opgevolgd door onderstaande (mogelijk meer actuele) registratie

ID: 38551
Bron: ToetsingOnline
Titel:

Andere (mogelijk minder actuele) registraties in dit register

Geen registraties gevonden.

In overige registers

Register	ID
NTR-new	NL4023
NTR-old	NTR4196
CCMO	NL43412.042.13
ISRCTN	ISRCTN wordt niet meer aangevraagd.
OMON	NL-OMON38551

Resultaten

Samenvatting resultaten
N/A