Moving with osteoarthritis: the effect of an altered gait pattern on knee load in persons with knee osteoarthritis

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To investigate whether applying small changes to the gait pattern of patients with osteoarthritis lead to a reduction of the knee adduction moment in both the short term and long term.

Ethical review	Approved WMO
Status	Recruitment stopped
Health condition type	Bone and joint injuries
Study type	Interventional

Summary

ID

NL-OMON40590

Source
ToetsingOnline

Brief title
Moving with osteoarthritis

Condition

- Bone and joint injuries

Synonym
osteoarthritis; degenerative joint disease

Research involving
Human

Sponsors and support

Primary sponsor: Fontys Paramedische Hogeschool
Source(s) of monetary or material Support: Ministerie van OC&W

Intervention

Keyword: gait retraining, knee adduction moment, knee load, knee osteoarthritis

Outcome measures

Primary outcome

knee adduction moment peak and impulse values

Secondary outcome

- Degree of osteoarthritis in the knee (score based on the questionnait "Knee

injury and Osteoarthritis Outcome Score" (KOOS));

- Mobility level (score based on the questionnaire *Physical Activity Scale for

the Elderly* (PASE));

- Muscle force of the major muscle groups for the extension and flexion of the

leg, hip and ankle;

- Muscle activation patterns measured using electromyography (EMG).

Study description

Background summary

Osteoarthritis is a chronic and irreversible degeneration of the joint cartilage. The knee load (knee adduction moment) seems to have an important role in the development and progression of medial tibiofemoral osteoarthritis. A reduction of the knee load could slow down the joint cartilage degeneration and reduce the physical complaints. A reduction of the knee load can be achieved using a knee brace or shoe insoles. However, the adherence of the patients to wearing these orthopedic aids is known to be limited. An alternative approach in reducing the knee adduction moment without the use of external walking aids is gait retraining. By applying subtle changes to the existing gait pattern, both the direction and the magnitude of the forces that act upon the knee can be changed.

Study objective

To investigate whether applying small changes to the gait pattern of patients with osteoarthritis lead to a reduction of the knee adduction moment in both the short term and long term.

Study design

Randomized Controlled Trial

Intervention

Participants are randomly assigned to either the experimental group or the control group. Participants in the experimental group will receive lifestyle advise regarding knee osteoarthritis. In addition, they will participate in a maximum of 18 physical therapy sessions aimed at applying a gait retraining strategy (medial thrust or trunk lean). The control group will only receive the lifestyle advise.

Study burden and risks

The participant will follow a gait retraining program (max 18 sessions of 30 minutes) under the supervision of a physical therapist.
The participant will be measured in a movement laboratory (3 sessions of max 2 hours);
The participant will attend one presentation about lifestyle advise regarding osteoarthritis;
At the start of the study one x-ray will be made of the knee;

The risks of possible physical injury are estimated to be minimal.

Contacts

Public
Fontys Paramedische Hogeschool

Ds. Th. Fliednerstraat 2
Eindhoven 5631 BN
NL
Scientific
Fontys Paramedische Hogeschool

Ds. Th. Fliednerstraat 2
Eindhoven 5631 BN
NL

Trial sites

Listed location countries

Netherlands

Eligibility criteria

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

Inclusion criteria

-Age 50 years and older;
- Diagnosed with early stage tibiofemoral osteoarthritis (radiografically diagnosed or determined according to the American College of Rheumatology (ACR) guidelines;
- Kellgren-Lawrence grade 2 or 3;
- Ability to understand and read the Dutch language (this with regard to persons' ability to fill out questionnaires).

Exclusion criteria

-unable to walk without walking aid
-other orthopaedic or neurological diseases which can lead to functional limitations
-hip arthritis
-severe perceptual or cognitive limitations
-cardio or pulmonary diseases.

Study design

Design

Study type:	Interventional
Intervention model:	Parallel
Allocation:	Randomized controlled trial

Masking:	Single blinded (masking used)
Control:	Active
Primary purpose:	Treatment

Recruitment

NL

Recruitment status:	Recruitment stopped
Start date (anticipated):	01-04-2014
Enrollment:	58
Type:	Actual

Ethics review

Approved WMO

Date:	03-04-2014
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
CCMO	NL47483.015.13