

Clinical Trial Protocol

Iranian Registry of Clinical Trials

10 Jun 2026

The effect of uphill walking on pain, range of motion, stride length, walking speed and disability in patients with knee osteoarthritis

Protocol summary

Summary

osteoarthritis is the degeneration of joint cartilage and subchondral bone that cause pain, morning stiffness and disability in patients. Knee osteoarthritis is the most prevalent rheumatism disease worldwide. Patients who suffer from knee osteoarthritis, walk with bent knee. Due to knee flexion, center of pressure of knee move backward, and therefore flexion moment is increase and quadriceps muscle must work with more forces and thereafter compressive force on patellofemoral joint is increased. The treatment that can move center of pressure anteriorly, such as walking on inclined surface, cause decrease of flexion moment arm in knee joint. People who participate in this research, at first, complete 3 questionnaires that involve demographic data, knee injury and osteoarthritis outcome score (KOOS) and visual analogue scale (VAS). Then knee flexion and extension range of motion, self selected walking speed and stride length are measured. Afterward, participants are divided in two groups according to random assignment by individual method. Control group receive 10 session routine physiotherapy. Intervention group receive 10 session routine physiotherapy with 2 set walking at 1/1 meter per seconds on treadmill while treadmill surface is inclined to 8 degree. Each set remain 15 minutes. The parameters that described are measured again after the end of 10 session physiotherapy and 20 days afterward.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT20171115034920N1**

Registration date: **2017-11-15, 1396/08/24**

Registration timing: **prospective**

Last update:

Update count: **0**

Registration date

2017-11-15, 1396/08/24

Registrant information

Name

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Name of organization / entity

university of social welfare and rehabilitation science

Country

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Recruitment status

Recruitment complete

Funding source

personal

Expected recruitment start date

2017-11-22, 1396/09/01

Expected recruitment end date

2018-08-23, 1397/06/01

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

The effect of uphill walking on pain, range of motion, stride length, walking speed and disability in patients with knee osteoarthritis

Public title

the effect of uphill walking on knee osteoarthritis

Purpose

Treatment

Inclusion/Exclusion criteria

inclusion criteria : 2 and 3 grade of osteoarthritis based on Kell grenade Lawrence scale don't receive physiotherapy treatment for knee osteoarthritis ,one year before entry to research don't take intra articular injection from 3 month before entry to research don't have history of trauma,fracture,dislocation and surgery of knee joint lack of BMI above 30 kilogeram per square meter worst reported pain during last week , at least is 30 mm on the VAS lack of systemic arthritis don't use of walking assisting device exclusion criteria: injury or severe hypotension as a result of intervention intolerable increase of pain disinclination to participate in research 2 continuous session absence

Age

From **40 years** old to **65 years** old

Gender

Both

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **30**

Randomization (investigator's opinion)

Randomized

Randomization description

Blinding (investigator's opinion)

Not blinded

Blinding description

Placebo

Not used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

university of social welfare and rehabilitation science

Street address

koodakyar alleu, daneshjoo street, evin

City

tehran

Postal code

Approval date

2017-10-18, 1396/07/26

Ethics committee reference number

IR.USWR.REC.1396.183

Health conditions studied

1

Description of health condition studied

knee osteoarthritis

ICD-10 code

M19.9

ICD-10 code description

Arthrosis, unspecified

Primary outcomes

1

Description

pain

Timepoint

preintervention-the end of 10 session- 20 days after the end of intervention

Method of measurement

visual analogue scale

2

Description

range of motion

Timepoint

preintervention-the end of 10 session- 20 days after the end of intervention

Method of measurement

goniometer

3

Description

walking speed

Timepoint

preintervention-the end of 10 session- 20 days after the end of intervention

Method of measurement

10 meter walking test

4

Description

stride length

Timepoint

preintervention-the end of 10 session- 20 days after the end of intervention

Method of measurement

distance division on stride number

Secondary outcomes

1

Description

disability

Timepoint

preintervention-the end of 10 session- 20 days after the end of intervention

Method of measurement

Knee injury and Osteoarthritis Outcome Score questionnaire

Intervention groups

1

Description

intervention: routine physiotherapy + walking on inclined treadmill

Category

Rehabilitation

2

Description

control: routine physiotherapy

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center

shams physiotherapy

Full name of responsible person

mohsen shams

Street address

Sina building , No339 , east 196 street , shahed square , tehranpars

City

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

university of social welfare and rehabilitation science

Full name of responsible person

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Street address

no51 nabreh street azadeqan karaj city

City

karaj

Grant name

Grant code / Reference number

Is the source of funding the same sponsor organization/entity?

Yes

Title of funding source

university of social welfare and rehabilitation science

Proportion provided by this source

100

Public or private sector

empty

Domestic or foreign origin

empty

Category of foreign source of funding

empty

Country of origin

Type of organization providing the funding

empty

Person responsible for general inquiries

Contact

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Web page address

Sharing plan

Deidentified Individual Participant Data Set (IPD)

empty

Study Protocol

empty

Statistical Analysis Plan

empty

Informed Consent Form

empty

Clinical Study Report

empty

Analytic Code

empty

Data Dictionary

empty