

# Clinical Trial Protocol

## Iranian Registry of Clinical Trials

09 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 moves backward, and therefore flexion moment increases 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 into two groups according to random assignment by individual method. Control group receives 10 sessions of routine physiotherapy. Intervention group receives 10 sessions of routine physiotherapy with 2 sets of walking at 1/1 meter per second on treadmill while treadmill surface is inclined to 8 degrees. Each set remains 15 minutes. The parameters that were described are measured again after the end of 10 sessions of 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

parisa sedaghatnejad

###### Name of organization / entity

university of social welfare and rehabilitation science

###### Country

Iran (Islamic Republic of)

###### Phone

+98 26 3223 6984

###### Email address

pa.sedaghatnejad@uswr.ac.ir

##### 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

tehran

## Sponsors / Funding sources

### 1

#### Sponsor

##### Name of organization / entity

university of social welfare and rehabilitation science

##### Full name of responsible person

parisa sedaghatnejad

##### 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

##### Name of organization / entity

University of social welfare and rehabilitation sciences

##### Full name of responsible person

parisa sedaghatnejad

##### Position

master

##### Other areas of specialty/work

##### Street address

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##### City

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## Person responsible for updating data

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masters student

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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*