# Clinical Trial Protocol
# Iranian Registry of Clinical Trials

09 Nov 2026

## The efficacy of strengthening and stretching exercises on knee pain and function of patients with arthrosis

## Protocol summary

**Summary**

The objective of this randomized clinical trial is to evaluate the efficacy of exercise as a easy and non expensive protocol on knee pain and function and evaluation of compliance in Iranian patients. The patients aged more than 40 years who are suffering from knee pain more than 3 months, grade II or III of knee arthrosis, VAS more than 30 mm, BMI =18-30, and no contraindications of exercise therapy will be studied. The intervention group will receive 3 months strengthening and stretching exercises as well as routine medicine for knee pain and 10 sessions physical modality. The control group only will receive medicine and physical. Knee pain will be measured by using VAS and physical function will be measured by using KOOS and other physical function tests before and 1, 3, and 6 months after the intervention.

## General information

**Acronym**

**IRCT registration information**

IRCT registration number: **IRCT138904274409N1**
Registration date: **2010-08-23, 1389/06/01**
Registration timing: **retrospective**

Last update:
Update count: **0**

**Registration date**

2010-08-23, 1389/06/01

**Registrant information**

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Parisa Nejati
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**Recruitment status**

**Recruitment complete**

**Funding source**

Iran university of medical sciences

**Expected recruitment start date**

2010-08-23, 1389/06/01

**Expected recruitment end date**

2011-03-20, 1389/12/29

**Actual recruitment start date**

empty

**Actual recruitment end date**

empty

**Trial completion date**

empty

**Scientific title**

The efficacy of strengthening and stretching exercises on knee pain and function of patients with arthrosis

**Public title**

The effect of exercise on knee osteoarthritis

**Purpose**

Treatment

**Inclusion/Exclusion criteria**

Inclusion criteria: age more than 40 years, knee pain for more than 3 months, grade II, III of arthrosis of kellegren-lawrence in radiography, VAS more than 30mm, BMI=18-30, patients who like to participate in exercise therapy Exclusion criteria: presence of any contraindication (uncontrolled HTN, uncontrolled CHF, uncontrolled arrhythmia, uncontrolled metabolic diseases, severe valvular diseases)

**Age**

From **40 years** old to **149 years** old

**Gender**

Both

**Phase**
N/A
**Groups that have been masked**
*No information*
**Sample size**
Target sample size: **50**
**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**
Iran University of Medical Science
**Street address**
Between Sheikh fazlolah and Chamran Highway, Hemmat Highway
**City**
Tehran
**Postal code**
**Approval date**
2010-07-25, 1389/05/03
**Ethics committee reference number**
891/8

## Health conditions studied

### 1

**Description of health condition studied**
Knee osteoarthritis
**ICD-10 code**
M15, M16,
**ICD-10 code description**
Diseases of the musculoskeletal system and connective tissue

## Primary outcomes

### 1

**Description**
Pain
**Timepoint**
before intervention and 1 months and 3 months and 6 months after intervention
**Method of measurement**
Visual analog scale

### 2

**Description**
function
**Timepoint**
before intervention and 1 months and 3 months and 6 months after intervention
**Method of measurement**
KOOS questionnaire

## Secondary outcomes

### 1

**Description**
physical function test
**Timepoint**
before intervention and 1 months and 3 months and 6 months after intervention
**Method of measurement**
5 times sit and stand of chair, 4 steps up and down stairs, 6 minutes walk test

## Intervention groups

### 1

**Description**
strengthening and stretching exercises for quadriceps and hamstring and gastrocnemius muscles for 3 months . strengthening exercises one other day but stretching exercises everyday+ 10 sessions physical modality ( U/S,Heat , TENS) + Acetaminophen or NSAID in painful conditions for intervention group.
**Category**
Other

### 2

**Description**
10 sessions physical modality ( U/S,heat , TENS) + Acetaminophen or NSAID in painful conditions for control group.
**Category**
Rehabilitation

## Recruitment centers

### 1

**Recruitment center**
**Name of recruitment center**
Rasoul Akram hospital
**Full name of responsible person**
**Street address**
**City**
Tehran

## Sponsors / Funding sources

**1**

**Sponsor**
**Name of organization / entity**
Iran University of Medical Science
**Full name of responsible person**
Dr. Abbas Motavalian
**Street address**
Between Sheikh fazlolah and Chamran Highway, Hemmat Highway
**City**
Tehran
**Grant name**
**Grant code / Reference number**
**Is the source of funding the same sponsor organization/entity?**
Yes
**Title of funding source**
Iran University of Medical 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**
Rasoul Akram hospital, Iran University of Medical Science,
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## Person responsible for scientific inquiries

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## Person responsible for updating data

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## 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*