

# Clinical Trial Protocol

## Iranian Registry of Clinical Trials

05 Jul 2026

### Comparison of the effect of lumbopelvic manipulation, with lumbopelvic manipulation and dry needling of quadratus lumborum and Gluteus Medius muscles on pain and function of athletes knee with patellofemoral pain syndrome (PFPS)

#### Protocol summary

##### Study aim

Comparison of the effect of lumbopelvic manipulation, with lumbopelvic manipulation and dry needling of quadratus lumborum and Gluteus Medius muscles on pain and function of athletes knee with patellofemoral pain syndrome (PFPS)

##### Design

Clinical trial with two comparison groups, with parallel groups, one-way blind, randomized, sample size of 30 people, blocked randomization

##### Settings and conduct

The two groups of lumbopelvic manipulation and lumbopelvic manipulation and dry needle of the quadratus lumborum and gluteus medius muscles are performed in Shiraz Rehabilitation School. And evaluation in the first and last session of treatment by the evaluator who is blind to the patients

##### Participants/Inclusion and exclusion criteria

Entry requirements : .Athletes 18 to 45 years of age with unilateral patellar pain syndrome who exercise regularly (at least 3 sessions per week). .Complaints of anterior knee pain in at least 2 of the following daily activities: sitting for long periods of time, going up and down stairs, squatting, kneeling, jumping and running. .Report of pain when touching the internal and external patellar procedures , Kujala score less than 40 out of 80 .Having at least 3 out of 10 pain levels on a numerical pain scale over the past week No entry conditions: .Existence of other pathologies of the knee joint such as rupture of meniscus or knee ligaments, wear and tear of the knee joint, tendon problems, dislocation or partial dislocation of the patella .Hip pathologies .Radicular pain in the lumbar region and neurological symptoms .Previous knee surgery .Contraindications to the use of dry needles

##### Intervention groups

lumbopelvic manipulation lumbopelvic manipulation and dry needling of quadratus lumborum and Gluteus Medius muscles on pain and function of athletes knee with patellofemoral pain syndrome (PFPS)

##### Main outcome variables

Intensity of pain ; Functional ability

#### General information

##### Reason for update

##### Acronym

##### IRCT registration information

IRCT registration number: **IRCT20210315050709N1**

Registration date: **2021-09-14, 1400/06/23**

Registration timing: **prospective**

Last update: **2021-09-14, 1400/06/23**

Update count: **0**

##### Registration date

2021-09-14, 1400/06/23

##### Registrant information

##### Name

Amin Shakouri

##### Name of organization / entity

##### Country

Iran (Islamic Republic of)

##### Phone

+98 34 3282 1128

##### Email address

aminshakouri@sums.ac.ir

##### Recruitment status

**Recruitment complete**

##### Funding source

##### Expected recruitment start date

2021-09-23, 1400/07/01  
**Expected recruitment end date**  
2021-11-22, 1400/09/01  
**Actual recruitment start date**  
empty  
**Actual recruitment end date**  
empty  
**Trial completion date**  
empty

#### **Scientific title**

Comparison of the effect of lumbopelvic manipulation, with lumbopelvic manipulation and dry needling of quadratus lumborum and Gluteus Medius muscles on pain and function of athletes knee with patellofemoral pain syndrome (PFPS)

#### **Public title**

Comparison of the effect of lumbopelvic manipulation, with lumbopelvic manipulation and dry needling of quadratus lumborum and Gluteus Medius muscles on pain and function of athletes knee with patellofemoral pain syndrome (PFPS)

#### **Purpose**

Supportive

#### **Inclusion/Exclusion criteria**

##### **Inclusion criteria:**

Athlete 18 to 45 years old with patellofemoral pain syndrome who exercise regularly (at least three times per week) Complain of anterior knee pain at least in 2 of the following activity: sitting for long periods of time, going up and down stairs, squatting, kneeling, jumping and running Pain report when touching internal and external of patella surface and positive clark test in knee extended and sitting At least be positive result of one of the three following tests: Positive vastus medialis co-ordination test Positive 20 cm going down stair test Positive Patellar apprehension test Gradual start of symptoms without history of trauma or injury for at least past 3 months kujala score level 40 to 70 At least 3 out of 10 score level of NPRS in past tree weeks

##### **Exclusion criteria:**

Existence of other pathologies of knee joint such as rupture of meniscus or knee ligaments, knee joint wear, tendon problems, patellar dislocation or partial dislocation, Sinding-Larsen disease, Osgood-Schlatter disease and Plica syndrome, ankle and knee injuries. Pathologies of the hip such as rupture of the ligaments of the thigh, joint wear and tear, tendon problems, dislocation or partial dislocation and injury of the thigh. Structural and biomechanical problems such as: valgus and varus in the knee or femoral anterior Radicular pain in the lumbar region and neurological symptoms (diagnosis with the help of history and lower limb percussion test, dural stretch test) Previous knee surgery Neurological disorders affecting balance Contraindications to using dry needles such as: Existence of metabolic diseases including diabetes, rheumatic diseases To. Pregnancy. Respiratory and cardiovascular problems (Peripheral vascular disease), cancer and any malignancy. Immune system defects. Menstruation. Needle phobia. Bleeding disorders and taking anticoagulants. Liver and kidney diseases

#### **Age**

From **18 years** old to **45 years** old

#### **Gender**

Both

#### **Phase**

N/A

#### **Groups that have been masked**

- Outcome assessor

#### **Sample size**

Target sample size: **30**

#### **Randomization (investigator's opinion)**

Randomized

#### **Randomization description**

blocked randomization In this way, we placed 30 cases in blocks and 4-person cases Each block is randomly assigned to the control and intervention group

#### **Blinding (investigator's opinion)**

Single blinded

#### **Blinding description**

At the beginning of the treatment and at the end of the treatment, she is kept blind. At the beginning, the evaluation is done and at the end, the final evaluation and data recording is done. Initially, the case is studied in an intervention or control group and the therapist performs treatment for each case depending on whether it is control or intervention, but the evaluator is blind at the beginning of the pre-treatment and post-treatment evaluation and not know about the treatment is performed. And the case of treatment

#### **Placebo**

Not used

#### **Assignment**

Parallel

#### **Other design features**

### **Secondary Ids**

empty

### **Ethics committees**

#### **1**

#### **Ethics committee**

##### **Name of ethics committee**

Ethics committee of Shiraz University of Medical Sciences

##### **Street address**

School of Rehabilitation, Abiverdi 1 St. Chamran Blvd.

##### **City**

shiraz

##### **Province**

Fars

##### **Postal code**

۱۷۳۳-۷۱۳۴۵

#### **Approval date**

2021-02-24, 1399/12/06

#### **Ethics committee reference number**

IR.SUMS.REHAB.REC.1400.001

## Health conditions studied

1

### Description of health condition studied

patella femoral pain syndrom(pfps)

### ICD-10 code

M22.2

### ICD-10 code description

Patellofemoral disorders

## Primary outcomes

1

### Description

pain score

### Timepoint

At the beginning of the study (before the intervention) and sessions 4 and 1 month later

### Method of measurement

Numeric Pain Rating Scale

## Secondary outcomes

1

### Description

Functional ability

### Timepoint

At the beginning of the study (before the intervention) and sessions 4 and 1 month later

### Method of measurement

Kojala Questionnaire

2

### Description

Functional ability

### Timepoint

At the beginning of the study (before the intervention) and sessions 4 and 1 month later

### Method of measurement

Lateral plank duration

## Intervention groups

1

### Description

Control group: lumbopelvic manipulation(In this group, only lumbar-pelvic placment is performed, in which the person is placed in a special position and the technique is performed)

### Category

Rehabilitation

2

### Description

Intervention group: lumbopelvic manipulation and dry needling of quadratus lumbarom and Gluteus Medius

muscles.(In this group, in addition to pelvic lumbar placement in the said muscles, the dry needle technique is also applied)

### Category

Rehabilitation

## Recruitment centers

1

### Recruitment center

#### Name of recruitment center

Shiraz Faculty of Rehabilitation Sciences

#### Full name of responsible person

Amin shakouri

#### Street address

School of Rehabilitation, Abiverdi 1 St, Chamran Blvd.

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+98 71 3627 1552

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Hd136767@gmail.com

#### Web page address

<http://amintherapy.com/>

## Sponsors / Funding sources

1

### Sponsor

#### Name of organization / entity

Shiraz University of Medical Sciences

#### Full name of responsible person

Abbas Rezaieanzadeh

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School of Rehabilitation, Abiverdi 1 St, Chamran Blvd.

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hd136767@gmail.com

### Grant name

### Grant code / Reference number

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

Yes

### Title of funding source

Shiraz University of Medical Sciences

### Proportion provided by this source

100

### Public or private sector

Public  
**Domestic or foreign origin**  
Domestic  
**Category of foreign source of funding**  
*empty*  
**Country of origin**  
**Type of organization providing the funding**  
Academic

## Person responsible for general inquiries

### Contact

**Name of organization / entity**  
Shiraz University of Medical Sciences  
**Full name of responsible person**  
Amin Shakouri  
**Position**  
Master student shiraz university  
**Latest degree**  
Bachelor  
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Physiotherapy  
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## Person responsible for scientific inquiries

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## Person responsible for updating data

### Contact

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Master student shiraz university  
**Latest degree**  
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## Sharing plan

**Deidentified Individual Participant Data Set (IPD)**  
No - There is not a plan to make this available  
**Justification/reason for indecision/not sharing IPD**  
There is no more information  
**Study Protocol**  
No - There is not a plan to make this available  
**Statistical Analysis Plan**  
Not applicable  
**Informed Consent Form**  
No - There is not a plan to make this available  
**Clinical Study Report**  
No - There is not a plan to make this available  
**Analytic Code**  
Not applicable  
**Data Dictionary**  
Not applicable