

Clinical Trial Protocol

Iranian Registry of Clinical Trials

23 Jun 2026

Comparison of the effects of Muscle energy technique vs. Static stretch on flexibility of hamstring muscle, pain and function in sport players with patellofemoral pain syndrome

Protocol summary

Summary

This study was planned to evaluate the effect of two manual techniques on flexibility of hamstring muscles, pain and function in athletes. Athletes with patellofemoral pain syndrome between age of 18-30 and positive active patellar grind test, participate in this study. Exclusion criteria is contain lower extremity complication such as fracture and dislocation at least during 6 months. 66 participants are recruited (22 in each group). First intervention group receive static stretch and second intervention group receive muscle energy. Third group are considered as control group. Intervention is done 5 days per week for 2 weeks. Flexibility, pain and function were measured before and after the intervention.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT201608022391N23**

Registration date: **2016-08-17, 1395/05/27**

Registration timing: **registered_while_recruiting**

Last update:

Update count: **0**

Registration date

2016-08-17, 1395/05/27

Registrant information

Name

Zahra Rojhani Shirazi

Name of organization / entity

Shiraz University of Medical Sciences, School of Rehabilitation Sciences

Country

Iran (Islamic Republic of)

Phone

+98 71 1627 1552

Email address

rojhaniz@sums.ac.ir

Recruitment status

Recruitment complete

Funding source

Shiraz University of Medical Sciences

Expected recruitment start date

2016-08-05, 1395/05/15

Expected recruitment end date

2016-11-05, 1395/08/15

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Comparison of the effects of Muscle energy technique vs. Static stretch on flexibility of hamstring muscle, pain and function in sport players with patellofemoral pain syndrome

Public title

comparison of two therapeutic techniques in flexibility, pain and performance of athletes

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria: Professional athletes between 18-30 years old; unilateral anterior knee pain during two of these activities climbing stairs, squatting and long sitting; positive active patellar grind test; starting of pain feeling without history of trauma; pain during more than 6 month. Exclusion criteria: lower extremity complications such as fracture and dislocation at least during 6 months ago ; any history of surgical operations in muscles, bones

and joints of lower extremity ; knee joint flexion contracture.

Age

From **18 years** old to **30 years** old

Gender

Male

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **66**

Randomization (investigator's opinion)

Randomized

Randomization description

Blinding (investigator's opinion)

Single blinded

Blinding description

Placebo

Not used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Shiraz University Of Medical Sciences

Street address

Chamran Boulevard, Street Abyverdy, School of Rehabilitation Sciences

City

Shiraz

Postal code

Approval date

2015-07-18, 1394/04/27

Ethics committee reference number

IR.SUMS.REC.1395.73

Health conditions studied

1

Description of health condition studied

Patellofemoral Pain Syndrome

ICD-10 code

M22.4

ICD-10 code description

Chondromalacia Patellae

Primary outcomes

1

Description

Hamstring tightness

Timepoint

After and before intervention

Method of measurement

Active Extension Test

2

Description

Function

Timepoint

After and before intervention

Method of measurement

Kujala Test

3

Description

Pain

Timepoint

After and before intervention

Method of measurement

NRS

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group 1,MET: the case is in supine position.hip joint is held in 90 degrees of flexion by sling.therapist straighten knee joint as tolerable, next he presses against the therapist shoulder for 7 to 10 seconds, then relaxes for 5 second and at this time therapist stretches hamstring muscle to the next rang as tolerable. this stretch is held for 30 seconds. this process is repeated 5 times.

Category

Other

2

Description

Control group: pain, function and flexibility are measured without intervention

Category

N/A

3

Description

Intervention group 2, static stretch: the case is in supine position.the case puts his leg on the therapist shoulder. this process is repeated 5 times. the therapist stretches the hamstring muscle as tolerable for 30 seconds, then he returns the led to the rest position for 30 seconds. this

process is repeated 5 times.

Category

Other

Recruitment centers**1****Recruitment center****Name of recruitment center**

Sport Clubs

Full name of responsible person

Zahra Rojhani Shirazi

Street address

Shiraz, Chamran Boulevard, Street Abyverdy, School of Rehabilitation Sciences

City

Shiraz

Sponsors / Funding sources**1****Sponsor****Name of organization / entity**

Shiraz University of Medical Sciences

Full name of responsible person

Gholamreza Hatam

Street address

Chamran Boulevard, Street Abyverdy, School of Rehabilitation Sciences

City

Shiraz

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

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**

Shiraz University Of Medical Sciences

Full name of responsible person

Zahra Rojhani Shirazi

Position

PHD

Other areas of specialty/work**Street address**

Shiraz, Chamran Boulevard, Street Abyverdy, School of Rehabilitation Sciences

City

Shiraz

Postal code**Phone**

+98 71 3627 1552

Fax**Email**

rojhaniz@sums.ac.ir

Web page address**Person responsible for scientific inquiries****Contact****Name of organization / entity**

Shiraz University Of Medical Science

Full name of responsible person

Zahra Rojhani Shirazi

Position

PHD

Other areas of specialty/work**Street address**

Shiraz, Chamran Boulevard, Street Abyverdy, School of Rehabilitation Sciences

City

Shiraz

Postal code**Phone**

+98 71 3627 1552

Fax**Email**

rojhaniz@sums.ac.ir

Web page address**Person responsible for updating data****Contact****Name of organization / entity**

Shiraz University of Medical Sciences

Full name of responsible person

Zahra Rojhani Shirazi

Position

PhD

Other areas of specialty/work**Street address**

Shiraz Faculty of Rehabilitation

City

Shiraz

Postal code**Phone**

+98 71 1627 1552

Fax**Email****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