

Clinical Trial Protocol

Iranian Registry of Clinical Trials

17 Sep 2026

comparative evaluation of electromyographic activation pattern of core and lower extremity muscles to external perturbation between patients with patellofemoral pain syndrome and healthy subjects

Protocol summary

Summary

to compare how the muscles response to unexpected external perturbation in patient with patellofemoral pain syndrome (PFPS) and healthy subjects, 23 females with PFP and 23 healthy controls participate in this study. An unexpected perturbation is applied to the subject's ilium (unaffected sides of the patients and the matched sides of healthy subjects) by a one kilogram medicine ball with an energy of 20% of subject's BMI. The EMG activation of erector spine, transversus abdominis and internal obliquus, gluteus medius, tensor fascia lata, proneus longus, vastus lateralis and vastus medialis obliquus in response to unexpected mediolateral pelvic perturbation is measured. the muscles activity is recorded from 5 seconds before to 10 seconds after perturbation. data is collected 3 times with 1 minute interval and the average will be considered for analysis.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT201204212391N6**

Registration date: **2012-08-22, 1391/06/01**

Registration timing: **retrospective**

Last update:

Update count: **0**

Registration date

2012-08-22, 1391/06/01

Registrant information

Name

Zahra Rojhani Shirazi

Name of organization / entity

Shiraz University of Medical Sciences, School of Rehabilitation Sciences

Country

Iran (Islamic Republic of)

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+98 71 1627 1552

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Recruitment status

Recruitment complete

Funding source

Shiraz University of Medical Sciences

Expected recruitment start date

2011-09-23, 1390/07/01

Expected recruitment end date

2012-02-20, 1390/12/01

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

comparative evaluation of electromyographic activation pattern of core and lower extremity muscles to external perturbation between patients with patellofemoral pain syndrome and healthy subjects

Public title

evaluation of response to external perturbation in patients with patellofemoral pain syndrome and healthy subjects

Purpose

Other

Inclusion/Exclusion criteria

inclusion criteria: Women 18 to 40 years with anterior knee pain in one side; anterior or retropatellar knee pain reported on at least two of the following activities: running, prolonged sitting, stairs ascent, squatting,

running, kneeling and hopping/jumping; tenderness with posteromedial or posterolateral patellar facets palpation; an average pain level of 3 to 6 cm on a 10 cm visual analogue Scale in resistive knee extension; insidious onset of symptoms unrelated to a traumatic incident and existence of symptoms for at least 3 months; positive patellar grind test; FIQ above 11 Exclusion criteria: History of patellar dislocation; Lesions of articular cartilage; osteoarthritis; spine and hip pain and referred pain from these areas; knee deviations; inflammatory joint diseases during the last 1 year; abnormal medial longitudinal arch; pregnancy; central nervous system diseases; bilateral patellofemoral pain syndrome; metabolic diseases like diabetes and RA; professional athletes (who participate in a sport at least 2 hours a day and 3 times a week regularly

Age

From **18 years** old to **40 years** old

Gender

Female

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **54**

Randomization (investigator's opinion)

N/A

Randomization description**Blinding (investigator's opinion)**

Not blinded

Blinding description**Placebo**

Not used

Assignment

Single

Other design features

The applied intervention was identical for both healthy and patient groups

Secondary Ids

empty

Ethics committees**1****Ethics committee****Name of ethics committee**

Shiraz University of Medical Sciences

Street address

Shiraz Faculty of Rehabilitation, Chamran blvd.

City

shiraz

Postal code**Approval date**

2011-09-23, 1390/07/01

Ethics committee reference number

5925

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**

electromyographic activation

Timepoint

from 5s before to 10s after the intervention

Method of measurement

electromyography system

Secondary outcomes

empty

Intervention groups**1****Description**

intervention for both healthy and patient groups: participants will be under an unexpected perturbation which is applied by a 1kg ball to their ilium, with an energy equal to 20 percent of each person's Body Mass Index .

Category

Other

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

physiotherapy's clinics

Full name of responsible person

Zahra Rojhani Shirazi

Street address

Shiraz Faculty of Rehabilitation, Chamran blvd.

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
 Shiraz Faculty of Rehabilitation, Chamran blvd.
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
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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