

# Clinical Trial Protocol

## Iranian Registry of Clinical Trials

10 Jun 2026

### Immediate effects of patellar taping on electromyographic indices of Vastus medialis oblique and Vastus lateralis muscles in Patellofemoral pain syndrome

#### Protocol summary

##### Study aim

Evaluation of the immediate effectiveness of patellar taping on electromyographic indices of Vastus medialis oblique(VMO) and Vastus lateralis(VL) muscles in Patellofemoral pain syndrome(PFPS)

##### Design

In this randomized, blinded study, 35 patients aged 20-50 years with PFPS are selected. KT on patella will be used for all people. The muscular activity of individuals in closed and open chain kinematic will be examined with an EMG device that the order of these activities is done randomly for individuals. A secondary evaluation is performed on the same day after patellar taping to evaluate the immediate effects of patellar taping on knee muscle activity.

##### Settings and conduct

Emg data analyzer will not know if the recorded information is pre- or post-taping.

##### Participants/Inclusion and exclusion criteria

In. criteria : Anterior knee pain for at least a month; Feeling of pain when touching the medial and lateral borders of the patella; Exacerbation of symptoms during prolonged sitting, climbing stairs, squatting, running and jumping activities; positive Clark test; Pain during resistance knee extension ex. criteria : History of direct trauma to the patella; History of patella dislocation; Any rheumatic conditions (OA, RA); Diabetes; Any trauma and injury of meniscus; Ligament instability; Referral pain from the lower back, hip, pelvis, and SI region; Significant inflammation and effusion of the knee joint; knee surgery; Steroid injection; knee physiotherapy; Severe knee pain; Lower limb malalignment (anteversion of femur, genu valgum and genu valgum, flat foot)

##### Intervention groups

In order to evaluate the immediate effectiveness of kinesiotaping(KT) on muscle activity, a Y-shaped tape will be used on the patella.

#### Main outcome variables

Onset time of EMG activity and the amount of amplitude of EMG activity of VMO and VL muscles and the amplitude ratio of them during closed and open chain kinematic

#### General information

##### Reason for update

##### Acronym

##### IRCT registration information

IRCT registration number: **IRCT20091214002851N6**

Registration date: **2021-11-24, 1400/09/03**

Registration timing: **prospective**

Last update: **2021-11-24, 1400/09/03**

Update count: **0**

##### Registration date

2021-11-24, 1400/09/03

##### Registrant information

##### Name

Mohammad Taghipour

##### Name of organization / entity

Babol University of Medical Sciences

##### Country

Iran (Islamic Republic of)

##### Phone

+98 11 3219 4641

##### Email address

taghipour@mubabol.ac.ir

##### Recruitment status

**Recruitment complete**

##### Funding source

##### Expected recruitment start date

2021-12-18, 1400/09/27

##### Expected recruitment end date

2022-09-23, 1401/07/01

**Actual recruitment start date**

empty

**Actual recruitment end date**

empty

**Trial completion date**

empty

**Scientific title**

Immediate effects of patellar taping on electromyographic indices of Vastus medialis oblique and Vastus lateralis muscles in Patellofemoral pain syndrome

**Public title**

Immediate effects of patellar taping in Patellofemoral pain syndrome

**Purpose**

Treatment

**Inclusion/Exclusion criteria****Inclusion criteria:**

Anterior knee pain for at least a month Feeling of pain when touching the medial and lateral borders of the patella Exacerbation of symptoms during prolonged sitting, climbing stairs, squatting, running and jumping activities positive Clark test Pain during resistance knee extension

**Exclusion criteria:**

History of direct trauma to the patella History of patella dislocation Any rheumatic conditions (osteoarthritis, rheumatoid arthritis) Diabetes Any trauma and injury of meniscus Ligament instability Referral pain from the lower back, hip, pelvis, and sacroiliac region Significant inflammation and effusion of the knee joint knee surgery Steroid injection knee physiotherapy Severe knee pain Lower limb malalignment (anteversion of femur, genu valgum and genu valgum, flat foot)

**Age**

From **20 years** old to **50 years** old

**Gender**

Both

**Phase**

N/A

**Groups that have been masked**

- Data analyser

**Sample size**

Target sample size: **35**

**Randomization (investigator's opinion)**

Randomized

**Randomization description**

In this study, muscle activity in closed and open chain kinematics will be examined during 6 tests. The sequence of these tests is done randomly for individuals based on a table of random numbers.

**Blinding (investigator's opinion)**

Single blinded

**Blinding description**

The person who will analyze the electromyographic data will not know if the recorded information is relevant before or after taping.

**Placebo**

Not used

**Assignment**

Single

**Other design features**

Investigation of the effect of patellar taping on all three electromyographic indicators (onset-amplitude-amp ratio) simultaneously: Comparison of the effect of taping on open and closed chain kinematic of the lower limb: Comparison of the effect of taping in different positions of the lower limb, including internal and external rotation of the hip

**Secondary Ids**

empty

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

Ethics committee of Babol University of Medical Sciences

**Street address**

Mazandaran, Babol, Ganj Afrooz St., Babol University of Medical Sciences

**City**

Babol

**Province**

Mazandaran

**Postal code**

47176-47745

**Approval date**

2021-10-09, 1400/07/17

**Ethics committee reference number**

IR.MUBABOL.HRI.REC.1400.064

**Health conditions studied****1****Description of health condition studied**

Patellofemoral pain syndrome

**ICD-10 code**

M22.2

**ICD-10 code description**

Patellofemoral disorders

**Primary outcomes****1****Description**

Delayed onset time of Vastus medialis oblique activity

**Timepoint**

Before patellar taping and immediately after patellar taping

**Method of measurement**

Electromyograph

**Secondary outcomes**

## 1

### **Description**

Intensity of pain

### **Timepoint**

Before patellar taping and immediately after patellar taping

### **Method of measurement**

Analog visual scale

## 2

### **Description**

Amplitude of Vastus medialis oblique

### **Timepoint**

Before patellar taping and immediately after patellar taping

### **Method of measurement**

Electromyograph

## 3

### **Description**

Amplitude of Vastus lateralis

### **Timepoint**

Before patellar taping and immediately after patellar taping

### **Method of measurement**

Electromyograph

## 4

### **Description**

The ratio of VMO/VL amplitude

### **Timepoint**

Before patellar taping and immediately after patellar taping

### **Method of measurement**

Dividing the maximum amplitude of the Vastus medialis oblique muscle into the maximum amplitude of the Vastus lateralis muscle

## 5

### **Description**

Delayed onset time of Vastus lateralis activity

### **Timepoint**

Before patellar taping and immediately after patellar taping

### **Method of measurement**

Electromyograph

## **Intervention groups**

## 1

### **Description**

Intervention group: The Y-shaped kinesiotape strip will be placed on the patella. The patient will be seated or supine while the affected knee is bent. The base of the Y-shaped strip will be placed without stretching on the surface of the Quadriceps femoris half muscle. The tape continues with a slight stretch(25%) in the direction of

the patella. After correcting the location of the patella, the inner tail of the tape is placed along the medial border of the patella and the outer tail is placed along the lateral border of the patella and ends without stretching on the patellar tendon.

### **Category**

Rehabilitation

## **Recruitment centers**

## 1

### **Recruitment center**

#### **Name of recruitment center**

Orthopedic and Physiotherapy clinic of Shahid Beheshti hospital

#### **Full name of responsible person**

Mohammad Taghipour

#### **Street address**

Keshvari Square, Sargord Ghasemi St., Shahid Beheshti Hospital, Physiotherapy Center

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beheshti@mubabol.ac.ir

#### **Web page address**

<https://beheshti.mubabol.ac.ir/>

## **Sponsors / Funding sources**

## 1

### **Sponsor**

#### **Name of organization / entity**

Babol University of Medical Sciences

#### **Full name of responsible person**

Dr. Reza Ghadimi

#### **Street address**

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#### **Email**

research@mubabol.ac.ir

#### **Grant name**

#### **Grant code / Reference number**

#### **Is the source of funding the same sponsor**

**organization/entity?**

Yes

**Title of funding source**

Babol 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**

Babol University of Medical Sciences

**Full name of responsible person**

Asal Hasanpour Moqaddam

**Position**

student

**Latest degree**

Bachelor

**Other areas of specialty/work**

Physiotherapy

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**Full name of responsible person**

Dr. Mohammad Taghipour

**Position**

Associate Professor

**Latest degree**

Ph.D.

**Other areas of specialty/work**

Physiotherapy

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

Babol University of Medical Sciences

**Full name of responsible person**

Asal Hasanpour Moqaddam

**Position**

student

**Latest degree**

Bachelor

**Other areas of specialty/work**

Physiotherapy

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**Sharing plan****Deidentified Individual Participant Data Set (IPD)**

Yes - There is a plan to make this available

**Study Protocol**

Yes - There is a plan to make this available

**Statistical Analysis Plan**

Yes - There is a plan to make this available

**Informed Consent Form**

Yes - There is a plan to make this available

**Clinical Study Report**

Yes - There is a plan to make this available

**Analytic Code**

Yes - There is a plan to make this available

**Data Dictionary**

Yes - There is a plan to make this available

**Title and more details about the data/document**

All data can potentially be shared after unidentified individuals

**When the data will become available and for how long**

Access period starts 2 months after the results are published

**To whom data/document is available**

Researchers working in academic, scientific and medical institutions

**Under which criteria data/document could be used**

To cite other researchers from the results of our research

**From where data/document is obtainable**

Dr. Mohammad Taghipour, Babol University of medical sciences, college of Rehabilitation, 00989126899352 ,taghipour@mubabol.ac.ir Asal Hasanpour Moqaddam, Babol University of medical sciences, college of

Rehabilitation, 00989120526725,  
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**What processes are involved for a request to access data/document**

2-4 weeks after request by email

**Comments**