

# Clinical Trial Protocol

## Iranian Registry of Clinical Trials

02 Jun 2026

### The Comparison of Different Intensities of Modified Holmich Protocol on Performance, Pain and Return-to-Sport in Athletes with Long-Standing Adductor Longus Related Groin Pain

#### Protocol summary

##### Study aim

To evaluate the effect of Exercise Treatment (Modified Holmich Protocol) in different intensities (low, moderate, and high) on groin pain

##### Design

Clinical trial with parallel groups consist of 3 intervention groups on 36 subjects

##### Settings and conduct

36 athletes according to the inclusion and exclusion criteria will be included in the study and in order their entrance date, they will be divided in intervention groups from 1 to 3, respectively . After the initial evaluations, they will perform therapeutic exercises for ten weeks with three different intensities. Then, after the tenth session, the initial evaluations will be performed again.

##### Participants/Inclusion and exclusion criteria

Inclusion criteria: Male athletes (18-35 years) , groin pain for at least 2 months Exclusion criteria: inguinal hernia, Pelvic or lower extremity fracture, chronic urinary system disorder

##### Intervention groups

Intervention group 1: Low-intensity modified Holmich therapeutic exercise protocol with 10% of maximum voluntary isometric contraction of adductor muscle, three times a week for ten weeks, intervention group 2: moderate-intensity modified Holmich therapeutic exercise protocol with 30% to 50% of maximum voluntary isometric contraction of adductor muscle, , three times a week for ten weeks and intervention group 3: high-intensity modified Holmich therapeutic exercise protocol with 70% of maximum voluntary isometric contraction of adductor muscle, , three times a week for ten weeks will perform.

##### Main outcome variables

pain, hip adductor and abductor muscle strengths, hip range of motion, 8 figure test

#### General information

##### Reason for update

##### Acronym

##### IRCT registration information

IRCT registration number: **IRCT20130121012210N9**

Registration date: **2021-06-18, 1400/03/28**

Registration timing: **prospective**

Last update: **2021-06-18, 1400/03/28**

Update count: **0**

##### Registration date

2021-06-18, 1400/03/28

##### Registrant information

##### Name

Azadeh Shadmehr

##### Name of organization / entity

Tehran University of Medical Sciences

##### Country

Iran (Islamic Republic of)

##### Phone

+98 21 7752 8468

##### Email address

shadmehr@tums.ac.ir

##### Recruitment status

**Recruitment complete**

##### Funding source

##### Expected recruitment start date

2021-07-11, 1400/04/20

##### Expected recruitment end date

2021-10-12, 1400/07/20

##### Actual recruitment start date

empty

##### Actual recruitment end date

empty

##### Trial completion date

empty

### Scientific title

The Comparison of Different Intensities of Modified Holmich Protocol on Performance, Pain and Return-to-Sport in Athletes with Long-Standing Adductor Longus Related Groin Pain

### Public title

The Comparison of Different exercise therapy on improvement of Long-Standing Groin Pain in Athletes

### Purpose

Treatment

### Inclusion/Exclusion criteria

#### Inclusion criteria:

Male athletic with Right dominant leg age 18-35 years desire to return to the former level of sports activity groin pain for at least 2 months pain at palpation of the adductor tendons or the insertion on the pubic bone or both moderate groin pain during active adduction against resistance (squeeze test) moderate pain during adduction against resistance had to be more than two and less than six at least two of the following criteria had to be present: a clear history of groin pain and stiffness in the morning, cough-induced or sneeze-induced groin pain, nocturnal groin pain , radiological evidence demonstrating osteitis pubis

#### Exclusion criteria:

inguinal hernia fracture of the pelvis or the lower limbs entrapment of the genitofemoral nerve taking any nonsteroidal anti-inflammatory drugs participation in principled strength training of the hip adductors for more than once a week in the 6 months prior to the study chronic urinary tract disorder

### Age

From **18 years** old to **35 years** old

### Gender

Male

### Phase

N/A

### Groups that have been masked

*No information*

### Sample size

Target sample size: **36**

### Randomization (investigator's opinion)

Randomized

### Randomization description

Participants are divided into three intervention groups according simple randomization. Randomization will be performed using sealed, randomly filled envelopes describing the treatment groups. We prepare three envelopes, in each of which one of the three methods is written. Each participant will choose one of them without knowing the contents of the envelope and will be placed in the relevant group.

### 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

Ethics Committee of School of Medicine ,Tehran University of Medical Sciences

##### Street address

School of Medicine, Poorsina street, Keshavarz Ave.

##### City

Tehran

##### Province

Tehran

##### Postal code

1417613151

#### Approval date

2020-10-31, 1399/08/10

#### Ethics committee reference number

IR.TUMS.MEDICINE.REC.1399.697

## Health conditions studied

### 1

#### Description of health condition studied

Groin Pain

#### ICD-10 code

G89.11

#### ICD-10 code description

Acute pain due to trauma

## Primary outcomes

### 1

#### Description

pain

#### Timepoint

before treatment, at the end of treatment (after the 10th week)

#### Method of measurement

according to the Visual analog scale, patient pain will be assessed during resisted hip adduction.

### 2

#### Description

Hip adductors strength by dynamo-meter

#### Timepoint

before treatment, at the end of treatment (after the 10th week)

#### Method of measurement

Average of three Maximal Voluntary Contraction (MVC) recorded on the Biodex Dynamometer during hip isometric adduction

### 3

#### **Description**

Hip abductors strength by dynamo meter

#### **Timepoint**

before treatment, at the end of treatment (after the 10th week)

#### **Method of measurement**

Average of three Maximal Voluntary Contraction (MVC) recorded on the Biodex Dynamometer during hip isometric abduction

### 4

#### **Description**

Hip range of motion by goniometer

#### **Timepoint**

before treatment, at the end of treatment (after the 10th week)

#### **Method of measurement**

It is the range of motion of the hip joint abduction recorded by goniometer

### 5

#### **Description**

Time to return to sport

#### **Timepoint**

When the athlete fully returns to team training and competitions after treatment.

#### **Method of measurement**

The time needed for the player to return to Sport in weeks and days

### 6

#### **Description**

figure of eight hop test

#### **Timepoint**

before treatment, at the end of treatment (after the 10th week)

#### **Method of measurement**

The athlete completes the 8-English course by jumping on one foot and the time of this work is recorded.

## **Secondary outcomes**

empty

## **Intervention groups**

### 1

#### **Description**

First intervention group: Low intensity Exercise. In this group Maximum Voluntary Contraction of hip adduction is defined using the Dynamometer and adjust low-intensity exercise by 10% of Maximum Voluntary Contraction. This exercises will continue for 10 weeks. The duration of each session is one hour and will be performed three times a week.

#### **Category**

Rehabilitation

### 2

#### **Description**

Second intervention group: Moderate intensity Exercise. In this group Maximum Voluntary Contraction of hip adduction is defined using the Dynamometer and adjust moderate-intensity exercise by 30-50% of Maximum Voluntary Contraction. This exercises will continue for 10 weeks. The duration of each session is one hour and will be performed three times a week.

#### **Category**

Rehabilitation

### 3

#### **Description**

Third intervention group: High intensity Exercise. In this group Maximum Voluntary Contraction of hip adduction is defined using the Dynamometer and adjust high-intensity contractions exercise by 70% of Maximum Voluntary Contraction. This exercises will continue for 10 weeks. The duration of each session is one hour and will be performed three times a week.

#### **Category**

Rehabilitation

## **Recruitment centers**

### 1

#### **Recruitment center**

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

School of Rehabilitation

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

Azadeh Shadmehr

##### **Street address**

Piche Shemiran, Enghelab Street

##### **City**

Tehran

##### **Province**

Tehran

##### **Postal code**

1148965111

##### **Phone**

+98 21 7752 8468

##### **Fax**

##### **Email**

shadmehr@tums.ac.ir

##### **Web page address**

## **Sponsors / Funding sources**

### 1

#### **Sponsor**

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

Tehran University of Medical Sciences

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

Mohammad Ali Sahraiean

##### **Street address**

Main Campous, Qods Street, Englab street

##### **City**

Tehran  
**Province**  
Tehran  
**Postal code**  
1417613151  
**Phone**  
+98 21 8163 3698  
**Email**  
vcr@tums.ac.ir  
**Web page address**  
**Grant name**  
**Grant code / Reference number**  
**Is the source of funding the same sponsor organization/entity?**  
Yes  
**Title of funding source**  
Tehran 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**  
Tehran University of Medical Sciences  
**Full name of responsible person**  
Rami Mazbouh  
**Position**  
Resident  
**Latest degree**  
Master  
**Other areas of specialty/work**  
Physiotherapy  
**Street address**  
No.11, Al Mahdi Street, Zahle Baalback Main Road  
Near the  
**City**  
Zahle  
**Province**  
Bekaa  
**Postal code**  
416543329  
**Phone**  
+961 3 958 673  
**Fax**  
**Email**  
ramielmazbouh@gmail.com

## Person responsible for scientific inquiries

**Contact**  
**Name of organization / entity**

Tehran University of Medical Sciences  
**Full name of responsible person**  
Azadeh Shadmehr  
**Position**  
Professor  
**Latest degree**  
Ph.D.  
**Other areas of specialty/work**  
Physiotherapy  
**Street address**  
Piche shemiran, Enghelab street.  
**City**  
Tehran  
**Province**  
Tehran  
**Postal code**  
1148965111  
**Phone**  
+98 21 7752 8468  
**Fax**  
+98 21 7752 8468  
**Email**  
shadmehr@tums.ac.ir  
**Web page address**

## Person responsible for updating data

**Contact**  
**Name of organization / entity**  
Tehran University of Medical Sciences  
**Full name of responsible person**  
Rami Mazbouh  
**Position**  
Resident  
**Latest degree**  
Master  
**Other areas of specialty/work**  
Physiotherapy  
**Street address**  
No.11, Al Mahdi Street, Zahle Baalback Main Road  
**City**  
Zahle  
**Province**  
Bekaa  
**Postal code**  
416543329  
**Phone**  
+961 3 958 673  
**Fax**  
**Email**  
ramielmazbouh@gmail.com

## Sharing plan

**Deidentified Individual Participant Data Set (IPD)**  
Undecided - It is not yet known if there will be a plan to make this available  
**Study Protocol**  
Undecided - It is not yet known if there will be a plan to make this available  
**Statistical Analysis Plan**  
Not applicable

**Informed Consent Form**

Undecided - It is not yet known if there will be a plan to make this available

**Clinical Study Report**

Undecided - It is not yet known if there will be a plan to make this available

**Analytic Code**

Not applicable

**Data Dictionary**

Undecided - It is not yet known if there will be a plan to make this available