

# Clinical Trial Protocol

## Iranian Registry of Clinical Trials

13 Jun 2026

### The effect of hip prime extensor strengthening on non-contact ACL injury risk factors; the intensity of Quadriceps femoris muscle contraction, lower extremity kinematics and ground reaction force

#### Protocol summary

##### Study aim

To investigate the effect of Gluteus maximus muscle strengthening on some of the ACL injury risk factors

##### Design

Randomized control trial, parallel group design, not blinded, randomized

##### Settings and conduct

Sports lab of University of Isfahan, measurement of muscle strength by dynamometer, the intensity of muscle contraction by surface EMG, and biomechanical factors in landing test from a step on foot scan

##### Participants/Inclusion and exclusion criteria

18-30 year old non-athlete women with no lower extremity injury history in last 3 years and a full lower extremity range of motion

##### Intervention groups

Gluteus maximus muscle strengthening with Thera-band for 8 weeks 3 sessions for experimental group and no intervention for control group

##### Main outcome variables

The effect of Gmax muscle strengthening on reducing the intensity of Quadriceps muscle contraction to reduce the risk of ACL injury

#### General information

##### Reason for update

##### Acronym

##### IRCT registration information

IRCT registration number: **IRCT20191020045165N1**

Registration date: **2019-12-08, 1398/09/17**

Registration timing: **retrospective**

Last update: **2019-12-08, 1398/09/17**

Update count: **0**

##### Registration date

2019-12-08, 1398/09/17

#### Registrant information

##### Name

Azadeh Doroodgar

##### Name of organization / entity

University of Isfahan

##### Country

Iran (Islamic Republic of)

##### Phone

+98 31 3629 3444

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#### Recruitment status

##### Recruitment complete

#### Funding source

#### Expected recruitment start date

2019-11-11, 1398/08/20

#### Expected recruitment end date

2019-11-16, 1398/08/25

#### Actual recruitment start date

empty

#### Actual recruitment end date

empty

#### Trial completion date

empty

#### Scientific title

The effect of hip prime extensor strengthening on non-contact ACL injury risk factors; the intensity of Quadriceps femoris muscle contraction, lower extremity kinematics and ground reaction force

#### Public title

The effect of hip prime extensor strengthening on non-contact ACL injury risk factors

#### Purpose

Prevention

#### Inclusion/Exclusion criteria

**Inclusion criteria:**

Women 18-30 years old

**Exclusion criteria:**

History of Lower extremity injury Lower extremity Pain and limited ROM Professional athlete (3-5 weekly training sessions)

**Age**

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

**Gender**

Female

**Phase**

N/A

**Groups that have been masked**

*No information*

**Sample size**

Target sample size: **30**

**Randomization (investigator's opinion)**

Randomized

**Randomization description**

Simple Randomized: A random number was assigned to each of the 30 volunteers. Then, one individual was randomly excluded from the container and assigned in the experimental and another one into control 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 University of Isfahan

**Street address**

No 106 Arjang dead-end Mehregan lane Nazar-e-sharghi st. Isfahan Iran

**City**

Isfahan

**Province**

Isfahan

**Postal code**

۸۱۷۳۷۶۳۹۱۵

**Approval date**

2016-06-08, 1395/03/19

**Ethics committee reference number**

IR.UI.REC.1398.048

**Health conditions studied**

1

**Description of health condition studied**

ACL injury

**ICD-10 code**

S83.5

**ICD-10 code description**

Sprain of cruciate ligament of knee

**Primary outcomes**

1

**Description**

The intensity of Quadriceps muscle contraction

**Timepoint**

Initially and after 8 weeks of exercise

**Method of measurement**

Surface EMG

**Secondary outcomes**

empty

**Intervention groups**

1

**Description**

Intervention group: Gluteus maximus muscle strengthening by thera-band 3 times per week for 8 weeks.

**Category**

Prevention

2

**Description**

Control group: no intervention

**Category**

Prevention

**Recruitment centers**

1

**Recruitment center**

**Name of recruitment center**

University of Isfahan

**Full name of responsible person**

Khalil khayambashi

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Sports sciences faculty, University of Isfahan, Hezarjerib st. Isfahan, Iran

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## Sponsors / Funding sources

### 1

#### Sponsor

**Name of organization / entity**

University of Isfahan

**Full name of responsible person**

Rasool Roknizadeh

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Rokni@sci.ui.ac.ir

**Grant name****Grant code / Reference number****Is the source of funding the same sponsor organization/entity?**

Yes

**Title of funding source**

University of Isfahan

**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**

University of Isfahan

**Full name of responsible person**

Khalil khayambashi

**Position**

Professor

**Latest degree**

Ph.D.

**Other areas of specialty/work**

Physiotherapy

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## Person responsible for scientific inquiries

#### Contact

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**Other areas of specialty/work**

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## Person responsible for updating data

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**Position**

Student

**Latest degree**

Master

**Other areas of specialty/work**

Sport injuries and corrective exercises

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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**

Mean of anthropometric data and strength and the intensity of muscle contraction

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

After publication

### **To whom data/document is available**

Academics

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

Research

### **From where data/document is obtainable**

A.doroodgar@yahoo.com

### **What processes are involved for a request to access data/document**

E-mail order, consideration up to 15 days,respond

### **Comments**