

Clinical Trial Protocol

Iranian Registry of Clinical Trials

04 Jul 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)

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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

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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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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

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Full name of responsible person

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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**

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Full name of responsible person

Khalil khayambashi

Position

Professor

Latest degree

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Other areas of specialty/work

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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