Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 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
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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

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

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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

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1

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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

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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