

Clinical Trial Protocol

Iranian Registry of Clinical Trials

27 Jul 2026

The acute effect of whole body vibration on muscle strength and postural stability in anterior cruciate ligament injury: copers versus noncopers

Protocol summary

Summary

The purpose of this study, is determining the acute effect of whole body vibration on strength and balance in copers versus noncopers of anterior cruciate ligament injury. In this clinical trial study; 23 male athletic subjects with ACL rupture (12 copers, 12 noncoper) and 10 male healthy athletic are completely matched with the patients, will be selected. All 3 groups of subjects will complete interventions of WBV and sham WBV. The WBV treatment consists of 5 sets of 1 min of vibration (30 Hz, 3 mm) while standing in a squat position (30° knee flex). The sham WBV treatment will be standing in a squat position (30° knee flex) on WBN system platform with no any vibration. Postural control will be measured through the Biodex Stability System in two levels (4 & 8). The strength will be evaluated by isokinetic dynamometer and parameters will be set at angular velocity of 60°/s and concentric form. The results will be analysed with multiple ANOVA at significance level $p < 0.05$ and power $> 80\%$.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT201405281637N4**

Registration date: **2016-02-07, 1394/11/18**

Registration timing: **retrospective**

Last update:

Update count: **0**

Registration date

2016-02-07, 1394/11/18

Registrant information

Name

Sedighe Kahrizi

Name of organization / entity

Tarbiat Modares University

Country

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+98 21 8288 4511

Email address

kahrizis@modares.ac.ir

Recruitment status

Recruitment complete

Funding source

Tarbiat Modares University

Expected recruitment start date

2013-04-21, 1392/02/01

Expected recruitment end date

2014-09-01, 1393/06/10

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

The acute effect of whole body vibration on muscle strength and postural stability in anterior cruciate ligament injury: copers versus noncopers

Public title

Effect of whole body vibration on muscle strength and Postural Stability

Purpose

Health service research

Inclusion/Exclusion criteria

Inclusion criteria: athletic subjects with age between 20 and 30 years; unilateral ACL rupture on dominant leg confirmed with magnetic resonance imaging (MRI); clinical evaluation within 2-6 months of injury and having regular activities of Level I or II (as IKDC scale); full passive ROM; no swelling; able to walk without a limp; full active knee extension and the ability to hop on one leg without pain. Exclusion criteria: to have history of any

neurological disease or vestibule dysfunction;
uncorrected vision problems; previous anterior cruciate
ligament injury; concomitant ligamentous injury; bilateral
involvement, symptomatic menisci or cartilage injury
presence of hip or ankle pathology; fracture; leg or back
pain and diabetes

Age

From **20 years** old to **30 years** old

Gender

Male

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **38**

Randomization (investigator's opinion)

Randomized

Randomization description**Blinding (investigator's opinion)**

Single blinded

Blinding description**Placebo**

Used

Assignment

Parallel

Other design features**Secondary Ids**

empty

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

Tarbiat Modares University

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Postal code

1913634951

Approval date

2013-07-13, 1392/04/22

Ethics committee reference number

52/2015

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

ACL injury

ICD-10 code

S83.5

ICD-10 code description

Anterior cruciate ligament

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

Knee Muscles Strength

Timepoint

before and after intervention

Method of measurement

Isokinetic

Secondary outcomes**1****Description**

Postural Stability

Timepoint

before and after intervention

Method of measurement

Biodex Balance System

Intervention groups**1****Description**

Squat Position(knee in 30 flexion)

Category

Placebo

2**Description**

whole body vibration

Category

Treatment - Other

Recruitment centers**1****Recruitment center****Name of recruitment center**

Tarbiat Modares University

Full name of responsible person

Sedighe Kahrizi

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Sponsors / Funding sources**1****Sponsor****Name of organization / entity**

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Full name of responsible person

Dr. Yaghoub Fathollahi

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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

Tarbiat Modares University

Proportion provided by this source

100

Public or private sector

empty

Domestic or foreign origin

empty

Category of foreign source of funding

empty

Country of origin

Type of organization providing the funding

empty

Person responsible for general inquiries

Contact

Name of organization / entity

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Other areas of specialty/work

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Sharing plan

Deidentified Individual Participant Data Set (IPD)

empty

Study Protocol

empty

Statistical Analysis Plan

empty

Informed Consent Form

empty

Clinical Study Report

empty

Analytic Code

empty

Data Dictionary

empty