Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 2026

The evaluation of the effectiveness of a protocol involving whole-body vibration in individuals with delayed-onset muscle soreness after eccentric exercise

Protocol summary

Summary

This study is a single blind, single center, randomized clinical trial. Unaccustomed physical activity, specially eccentric exercise like downhill running, plyometric and strengthening exercises cause pain and irritation after exercise which are generally known as Delayed Onset Muscle Soreness (DOMS). Volunteers which are university students will be randomly allocated in control and intervention groups (each group=26). At the beginning of the first session, height, weight and age will be asked. Students in both groups will walk on the treadmill for 5 minutes with the speed of 3 km/h to warm up. To introduce DOMS, participants will walk on the treadmill for 30 minutes at the speed of 4 km/h and slope will be increased to 10 gradually. Participants in intervention group will receive whole body vibration treatment and control group will walk on the treadmill for 5 more minutes with no grade at the speed of 3 km/h. The outcome measurements are pain, dominant thigh circumference, passive knee ROM and maximum isometric knee extension power which will be measured at the beginning and end of each session and 1,3,7 days later.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT2016092429958N1**
Registration date: **2016-11-24, 1395/09/04**
Registration timing: **retrospective**

Last update:
Update count: **0**

Registration date

2016-11-24, 1395/09/04

Registrant information

Name

Armaghan Dabbagh

Name of organization / entity

Shiraz University of Medical Sciences

Country

Iran (Islamic Republic of)

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+98 36350868

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Recruitment status

Recruitment complete

Funding source

Shiraz University of Medical Sciences

Expected recruitment start date

2016-10-25, 1395/08/04

Expected recruitment end date

2016-11-20, 1395/08/30

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

The evaluation of the effectiveness of a protocol involving whole-body vibration in individuals with delayed-onset muscle soreness after eccentric exercise

Public title

The effect of vibration on pain relief after exercise

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria: male and female students of Shiraz University of Medical Sciences; aged 18-28; with no

history of aerobic and weight training in the past 3 months at least Exclusion criteria: NSAIDS and similar treatments; the history of injuries to the knee; back and neck; the history of surgery in the past one year; having the contraindications for using the whole body vibration; such as: DM; seizure; metabolic and neurological diseases; osteoporosis; RA; prosthesis; irregular bleeding and orthopedic injuries.

Age
From **18 years** old to **28 years** old

Gender
Both

Phase
N/A

Groups that have been masked
No information

Sample size
Target sample size: **52**

Randomization (investigator's opinion)
Randomized

Randomization description

Blinding (investigator's opinion)
Single blinded

Blinding description

Placebo
Not used

Assignment
Single

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee
Shiraz University of Medical Sciences-

Street address
7th floor,Cenrtal department of Shiraz University of Medical Sciences, Zand BLVD, Shiraz, Iran

City
Shiraz

Postal code
71345-1978

Approval date
2016-07-17, 1395/04/27

Ethics committee reference number
IR.SUMS.REC.1395.83

Health conditions studied

1

Description of health condition studied
Delayed Onset Muscle Soreness

ICD-10 code
M62.9

ICD-10 code description
Disorder of muscle, unspecified

Primary outcomes

1

Description
Pain

Timepoint
Immediately, 1,3,7 days later

Method of measurement
VAS, Algometery

Secondary outcomes

1

Description
Dominant thigh circumfrence

Timepoint
Immdiately, 1,3 and 7 days later

Method of measurement
Tape measure

2

Description
Passive knee range of motion

Timepoint
Immdiately, 1,3 and 7 days later

Method of measurement
Goniometery

3

Description
Maximum isometric knee extension

Timepoint
Immdiately, 1,3 and 7 days later

Method of measurement
Dynamometery

Intervention groups

1

Description
Intervention group: 1- 5 minutes warm up walking on treadmill at the speed of 3 km/h 2- 30 minutes walking on treadmill to introduce DOMS at the speed of 4 km/h and grade gradually raised to 10 3- 5 minutes cool down walking on treadmill at the speed of 3 km/h 4- treatment with WBV on the next day, participants stand on the plate while knees are bent 60 degrees (for maximum EMG activation of knee extensors) for one minute with the frequency of 30 Hz and Amplitude of 5 mm

Category
Treatment - Devices

2

Description
Control group: 1- 5 minutes warm up walking on treadmill at the speed of 3 km/h 2- 30 minutes walking on treadmill to introduce DOMS at the speed of 4 km/h and grade gradually raised to 10 3- 5 minutes cool down walking on treadmill at the speed of 3 km/h

Category
N/A

Recruitment centers

1

Recruitment center

Name of recruitment center
Shiraz University of Medical Sciences, Rehabilitation School

Full name of responsible person
Armaghan Dabbagh

Street address
School of Rehabilitation Sciences, first Abiverdi St, Chamran BLVD

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity
Shiraz University of Medical Sciences

Full name of responsible person
Dr Seyyed Basir Hashemi

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7th floor,Cenrtal department of Shiraz University of Medical Sciences, Zand BLVD

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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
Shiraz University of Medical Sciences

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
Shiraz University of Medical Sciences

Full name of responsible person
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Position
MsC student

Other areas of specialty/work

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Person responsible for scientific inquiries

Contact

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Assiociate professor

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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