Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 2026

Comparison between Whole and Local vibration effect on delayed- onset muscle soreness following eccentric exercises: a comparative clinical trial study

Protocol summary

Summary

Healthy untrained volunteers were randomly assigned to Whole body vibration,Local vibration and control groups.Volunteers performed 6 sets of 10 maximal isokinetic (606/s) eccentric contractions of the dominant-limb knee extensors on a dynamometer. In the Whole body vibration group, the training was applied using a vibratory platform (35 Hz, 5mm peak to peak) with 100 degree of knee flexion for 60 seconds before eccentric exercise. Local vibration group receive local vibration(50 Hz) on the quadriceps tendon for 5 minutes before eccentric exercise. No vibration is applied in the control group. Muscle soreness, thigh circumference, Maximal voluntary isometric knee ex tensor strength and pain are recorded at baseline and at 2 days post exercise.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT201604034549N9**
Registration date: **2016-04-13, 1395/01/25**
Registration timing: **prospective**

Last update:
Update count: **0**

Registration date

2016-04-13, 1395/01/25

Registrant information

Name

Elham Fatemy

Name of organization / entity

Semnan University Medical Sciences

Country

Iran (Islamic Republic of)

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Recruitment status

Recruitment complete

Funding source

Vice chancellor for research,Semnan University of Medical Sciences

Expected recruitment start date

2016-05-04, 1395/02/15

Expected recruitment end date

2016-06-04, 1395/03/15

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Comparison between Whole and Local vibration effect on delayed- onset muscle soreness following eccentric exercises: a comparative clinical trial study

Public title

Vibration effect on delayed -onset muscle soreness following exercises.

Purpose

Prevention

Inclusion/Exclusion criteria

Inclusion criteria: Healthy untrained volunteers in the age range 18-30 years. Exclusion criteria: Professional and recreational sports history, diabetes, epilepsy, metabolic or neuromuscular disease, osteoporosis, osteoarthritis, prosthetic, menstrual irregularities, or orthopedic injuries.

Age

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

Gender
Both

Phase
2
Groups that have been masked
No information
Sample size
Target sample size: **40**
Randomization (investigator's opinion)
Randomized
Randomization description
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 Semnan University of Medical Sciences
Street address
Kilometer 5, Damghan Road
City
Semnan
Postal code
Approval date
2016-03-17, 1394/12/27
Ethics committee reference number
IR.Semums.REC.1394.188

Health conditions studied

1

Description of health condition studied
Delay onset muscle soreness
ICD-10 code
M60- M63
ICD-10 code description
Disorders of muscles

Primary outcomes

1

Description
Pain
Timepoint
At baseline and 2 days post exercise.
Method of measurement
Visual Analogue Scale(VAS) Questionnaire

2

Description
Edema
Timepoint
At baseline and 2 days post exercise.
Method of measurement
Thigh circumference measured by tape

3

Description
Plasma CK activity
Timepoint
At baseline and 2 days post exercise.
Method of measurement
Blood sample assessment.

4

Description
Isometric Quadriceps strength
Timepoint
At baseline and 2 days post exercise.
Method of measurement
Isokinetic dynamometer

Secondary outcomes

empty

Intervention groups

1

Description
In order to produce Delay muscle soreness, Volunteers performed 6 sets of 10 maximal isokinetic (606/s) eccentric contractions of the dominant-limb knee extensors on a dynamometer.
Category
Other

2

Description
In the Whole body vibration group, the training was applied using a vibratory platform (35 Hz, 5mm peak to peak) with 100 degree of knee flexion for 60 seconds before eccentric exercise.
Category
Rehabilitation

3

Description
In Local vibration group the training was applied using local vibration(50 Hz) on the quadriceps tendon for 5 minutes before eccentric exercise.
Category

Rehabilitation

Recruitment centers

1

Recruitment center
Name of recruitment center
The Rehabilitation Center of Tabatabaee
Full name of responsible person
Elham Fatemy
Street address
Mashahir Square, in front of Helal Ahmar
City
Semnan

Sponsors / Funding sources

1

Sponsor
Name of organization / entity
Vice chancellor for research,Semnan University of Medical Sciences
Full name of responsible person
Ali Rashidipour
Street address
Kilometer 5, Damghan Road
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Semnan
Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
Yes
Title of funding source
Vice chancellor for research,Semnan 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
Semnan University of Medical Sciences
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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