

Clinical Trial Protocol

Iranian Registry of Clinical Trials

17 Sep 2026

The effect of Vibration on the muscle flexibility in female subjects with hamstring shortening: a randomized trial

Protocol summary

Summary

Objective: Hamstring shortening may cause postural defect and gait abnormality. Recently, it has been showed that application of whole body vibration may increase muscle flexibility in normal subject. This study has been designed to find the effect of local hamstring vibration on the hamstring shortening. Methods: 30 non-athletic females (aged 18-22 yrs) who suffer from more than 15 degree hamstring shortness were participated in the study (inclusion criteria). exclusion criteria is neuromuscular or musculoskeletal conditions, deformities and history of lower limb fractures. Then the subjects were assigned in one of the two experimental groups; vibration group (3 times a week for 8 weeks) and control group (no intervention). The subjects in both groups were not allowed to perform any sport activity during 8 weeks of study. Before and after the intervention, the rate of hamstring muscle shortness was evaluated by passive knee extension (PKE) test. In the experimental group, Intervention included Vibration training sessions over the middle line of the posterior aspect of thigh as follows: first and second week: three sets of 20 secs (with 1 min rest); third and fourth week: three sessions of 30 secs with 1 min rest; fifth and sixth week: three sets of 45 secs (with 45 secs rest). Seventh and eighth week: 4 sets of 1 min (with 1 min rest).

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT201011031254N6**
Registration date: **2010-11-26, 1389/09/05**
Registration timing: **registered_while_recruiting**

Last update:

Update count: **0**

Registration date

2010-11-26, 1389/09/05

Registrant information

Name

Amir Hoshang Bakhtiary Davijani

Name of organization / entity

Semnan University of Medical Sciences

Country

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Recruitment status

Recruitment complete

Funding source

Semnan University of Medical Sciences

Expected recruitment start date

2010-05-22, 1389/03/01

Expected recruitment end date

2010-12-30, 1389/10/09

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

The effect of Vibration on the muscle flexibility in female subjects with hamstring shortening: a randomized trial

Public title

Vibration may improve flexibility in subjects with hamstring shortening

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria: more than 15 degree Hamesting shortening Exclusion criteria: neuromuscular or

musculoskeletal conditions, deformities and history of lower limb fractures

Age
From **18 years** old to **22 years** old

Gender
Female

Phase
4

Groups that have been masked
No information

Sample size
Target sample size: **30**

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
Semnan university of medical sciences

Street address
Deputy of education and research, Basij Boulevard

City
Semnan

Postal code

Approval date
2010-05-10, 1389/02/20

Ethics committee reference number
A/2412

Health conditions studied

1

Description of health condition studied
Muscle shortening

ICD-10 code
M62.4

ICD-10 code description
Contracture of muscle

Primary outcomes

1

Description

Passive knee extension angle

Timepoint
Before and after 8 weeks intervention

Method of measurement
The passive knee extension angle will be measured by hand-hold goniometer

Secondary outcomes

empty

Intervention groups

1

Description
In experimental group: local vibration is applied over the middle line of the posterior aspect of thigh as follows: first and second week: three sets of 20 secs (with 1 min rest); third and fourth week: three sessions of 30 secs with 1 min rest; fifth and sixth week: three sets of 45 secs (with 45 secs rest). Seventh and eighth week: 4 sets of 1 min (with 1 min rest)

Category
Rehabilitation

2

Description
In control group: No intervention was applied

Category
N/A

Recruitment centers

1

Recruitment center

Name of recruitment center
Musculoskeletal Rehabilitation Research Center

Full name of responsible person
Amir Hoshang Bakhtiary

Street address
Ghods Boulevard

City
Semnan

Sponsors / Funding sources

1

Sponsor

Name of organization / entity
Semnan University of Medical Sciences

Full name of responsible person
Dr Vahid Semnani

Street address
Deputy of Education and Research, Basij Boulevard

City
Semnan

Grant name

Grant code / Reference number

Is the source of funding the same sponsor organization/entity?

Yes

Title of funding source

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

Position

PhD in Physiotherapy/Head of Rehabilitation Research center

Other areas of specialty/work

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Person responsible for general inquiries

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Position

Other areas of specialty/work

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Web page address

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

Person responsible for scientific inquiries

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Name of organization / entity

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Full name of responsible person

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