

Clinical Trial Protocol

Iranian Registry of Clinical Trials

11 Sep 2026

The Effect of Whole Body Vibration on Arthrogenic Inhibition of Quadriceps Muscle after Knee Surgery

Protocol summary

Study aim

The Purpose of this Clinical Trial Study is to Investigate the Immediate Effect of Whole Body Vibration on the Arthrogenic Inhibition of the Quadriceps Muscle in People with a CAR Level of less than 0.8 after Knee Surgeries. In this Study, 20 People Who Meet the Entry and Exit Criteria of the Study after 3 CAR Measurements through Electrical Stimulation will Enter the Intervention Stage. In this Stage, All the Participants will be Placed on the Vibration Plate with 110 Hz Specifications for 60 Seconds with their Knees Bent (30 degrees) and the Whole Body Vibration will be Applied to Them. . This Intervention is Repeated Three Times with an Interval of 2 Minutes. Immediately after the End of the Intervention, the Patient is Re-evaluated in the Above Mentioned way.

Design

Non-Randomized Clinical Trial

Settings and conduct

Faculty of Rehabilitation, Shahid Beheshti University of Medical Sciences

Participants/Inclusion and exclusion criteria

Inclusion Criteria: People Aged Between 20-50, Who have been at least 3 Months after Knee Joint Surgery, Who are Able to Stand and Walk without an Aid, Whose CAR Level is Less than 0.8, and their Pain Level is Less than 30 mm on the VAS Scale. Exclusion Criteria: Skeletal-Muscular or Neuro-Vascular Abnormality that Affects the Range of Motion of the Lower Limb Limit, Having a Balance Disorder, Having a History of Neurological Heart Disease, Taking any Special Medication during the Study will Cause People to be Excluded from the Study, An Increase in the Patient's Pain during the Intervention by 30 mm or more on the VAS Scale, if For any Reason, the Person does not want to Cooperate in the Study.

Intervention groups

Intervention Group: Applying Whole Body Vibration for 30 Seconds with a Specification of 110 Hz Three Times with an Interval of 2 Minutes

Main outcome variables

Central Activation Ratio: Voluntary Maximum Torque of the Quadriceps Muscle

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20240413061477N1**

Registration date: **2024-06-22, 1403/04/02**

Registration timing: **registered_while_recruiting**

Last update: **2024-06-22, 1403/04/02**

Update count: **0**

Registration date

2024-06-22, 1403/04/02

Registrant information

Name

Hanie Yavari

Name of organization / entity

Country

Iran (Islamic Republic of)

Phone

+98 21 4408 5091

Email address

hanieyavari18991@sbmu.ac.ir

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2024-05-21, 1403/03/01

Expected recruitment end date

2024-07-31, 1403/05/10

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

The Effect of Whole Body Vibration on Arthrogenic Inhibition of Quadriceps Muscle after Knee Surgery

Public title

The Effect of Whole Body Vibration on Arthrogenic Inhibition of Quadriceps Muscle after Knee Surgery

Purpose

Treatment

Inclusion/Exclusion criteria**Inclusion criteria:**

At least 4 Months have Passed since Knee Joint Surgery
The Age of People Should be Between 20-50 Having the Ability to Stand and Walk without an Aid The Amount of CAR Should be Less than 0.8 Pain Less than 30 mm on the VAS Scale

Exclusion criteria:

Any Use of Special Drugs During the Study will Result in People be Excluded from the Study If for any Reason the Person does not want to Cooperate in the study An increase in the patient's pain during the Intervention by 30 mm or More on the VAS Scale Having a History of Neurological Heart Disease Having a balance disorder Having Skeletal-Muscular or Neuro-Vascular Abnormality that Limits the Range of Motion of the Lower Limb

Age

From **20 years** old to **50 years** old

Gender

Both

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **20**

Randomization (investigator's opinion)

N/A

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

Not blinded

Blinding description**Placebo**

Not used

Assignment

Single

Other design features**Secondary Ids**

empty

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

Ethics Committee of Shahid Beheshti University of Medical Sciences

Street address

Shahid Beheshti Rehabilitation Faculty, Damavand Street, Imam Hossein Square

City

Tehran

Province

Tehran

Postal code

1616913111

Approval date

2024-03-09, 1402/12/19

Ethics committee reference number

IR.SBMU.RETECH.REC.1402.859

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

Arthrogenic Inhibition of Quadriceps Muscle

ICD-10 code

M62.9

ICD-10 code description

Disorder of muscle, unspecified

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

Central Activation Ratio

Timepoint

Before and After the Intervention

Method of measurement

Quantitative Measurement of Restraint by Digital Dynamometer

2**Description**

Voluntary Maximum Torque of the Quadriceps Muscle

Timepoint

Before and After the Intervention

Method of measurement

Quantitative Measurement of Muscle Strength by Digital Dynamometer

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

Pain

Timepoint

Before and After the Intervention

Method of measurement

Using a Visual Pain Scale

Intervention groups

1

Description

Intervention Group: Whole Body Vibration Group /
Vibration Frequency: 110Hz / Vibration Amplitude: 4mm
(Peak to Peak) / Vibration Type: vertical vibration /
exercise position: standing, with 30 degree knee Flexion,
Without Socks and Shoes / Diversion Each Exercise: 60
Seconds / Rest Diversion between each Exercise: 120
Seconds / Number of Repetitions in each Set: 3 Times /
Number of Sets: 1

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center

Faculty of Rehabilitation of Shahid Beheshti University
of Medical Sciences

Full name of responsible person

Hanie Yavari

Street address

Faculty of Rehabilitation Sciences, in front of Bo Ali
Hospital, Damavand Street

City

Tehran

Province

Tehran

Postal code

1616913111

Phone

+98 21 7756 1721

Fax

+98 21 7759 1807

Email

info@sbmu.ac.ir

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Shahid Beheshti University of Medical Sciences

Full name of responsible person

Dr. Siddiqa Sadat Naimi

Street address

Shahid Beheshti University of Medical Sciences,
Faculty of Rehabilitation Sciences, in front of Bo Ali
Hospital, Damavand Street (New Tehran), Imam
Hossein (AS) Square

City

Tehran

Province

Tehran

Postal code

1616913111

Phone

+98 21 7756 1721

Fax

+98 21 7759 1807

Email

info@sbmu.ac.ir

Grant name

Grant code / Reference number

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

Yes

Title of funding source

Shahid Beheshti University of Medical Sciences

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

Contact

Name of organization / entity

Shahid Beheshti University of Medical Sciences

Full name of responsible person

Khosro Khademi Kalantari

Position

full Professor

Latest degree

Ph.D.

Other areas of specialty/work

Physiotherapy

Street address

Faculty of Rehabilitation of Shahid Beheshti University
of Medical Sciences

City

Tehran

Province

Tehran

Postal code

1616913111

Phone

+98 21 7756 1721

Fax

+98 21 7759 1807

Email

khosro_khademi@yahoo.co.uk

Person responsible for scientific inquiries

Contact

Name of organization / entity

Shahid Beheshti University of Medical Sciences

Full name of responsible person

Khosro Khademi Kalantari

Position

full Professor

Latest degree

Ph.D.

Other areas of specialty/work

Physiotherapy

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1616913111

Phone

+98 21 7756 1721

Fax

+98 21 7759 1807

Email

info@sbmu.ac.ir

Person responsible for updating data**Contact****Name of organization / entity**

Shahid Beheshti University of Medical Sciences

Full name of responsible person

Hanieh Yavari

Position

Physiotherapy Master's Student

Latest degree

Bachelor

Other areas of specialty/work

Physiotherapy

Street address

Unit 24, No 78, East Prophet Street, Abazar Blvd

City

Tehran

Province

Tehran

Postal code

1471717636

Phone

+98 21 4408 5091

Email

Hanieyavari1991@gmail.com

Sharing plan**Deidentified Individual Participant Data Set (IPD)**

Undecided - It is not yet known if there will be a plan to
make this available

Study Protocol

Undecided - It is not yet known if there will be a plan to
make this available

Statistical Analysis Plan

Undecided - It is not yet known if there will be a plan to
make this available

Informed Consent Form

Undecided - It is not yet known if there will be a plan to
make this available

Clinical Study Report

Undecided - It is not yet known if there will be a plan to
make this available

Analytic Code

Undecided - It is not yet known if there will be a plan to
make this available

Data Dictionary

Undecided - It is not yet known if there will be a plan to
make this available