Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 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

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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

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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
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

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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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Person responsible for updating data

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Latest degree
Bachelor
Other areas of specialty/work
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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