Clinical Trial Protocol
Iranian Registry of Clinical Trials

10 Jun 2026

Comparison of the effect a course of combination of Vibration and Aerobic Training with two different intensities on Electromyography Indicators in Elderly Men

Protocol summary

Study aim

The purpose of the present study was to answer the question of what effect of whole body vibration combined with rope training on improving electromyographic parameters in older men?

Design

The sample consisted of 30 elderly men randomly divided into three groups of one high intensity exercise, two low intensity exercise and control group. Sample size was determined according to previous studies in this field.

Settings and conduct

Vibration training for eight weeks, three sessions per week, four 1-minute sessions in the first four weeks, and five 1-minute sessions in the second four weeks at 40 Hz, 3 mm amplitude, and 30-45 seconds rest between sets with specified positions on the device. Full Body Vibration Exercise Excel Pro Made by FitVibe Germany Germany Rope Exercise Program: Slow rope and chill for five minutes of walking and stretching exercises. Exercises were started from the first session in combination with vibration training from two one-minute sets and last sessions consisted of 6 one-minute sets and 30 seconds of rest between sets with 30-35 jumps per minute.

Participants/Inclusion and exclusion criteria

Elderly men in the age range of 70-60 years

Intervention groups

Interventions included whole body vibration training with two intensities, low intensity, and rope training with 13 and 14 levels of Borg stress perception scale. Control group received no exercise program.

Main outcome variables

Effects of (high intensity) and (low intensity) exercise program on control on electromyographic indices including biceps - triceps muscle activity, maxillary bicusp muscle activity, maximal triceps muscle activity, mean frequency of biceps muscles , Frequency of quadriceps muscles average frequency, Quadriceps muscle activity, Quadriceps maximal activity, Quadriceps maximal activity, Quadriceps muscle average frequency, Quadriceps muscle average frequency Are recorded and evaluated

General information

Reason for update

Acronym

Mashhad study Electromyography

IRCT registration information

IRCT registration number: **IRCT20200109046063N1**
Registration date: **2020-02-01, 1398/11/12**
Registration timing: **retrospective**

Last update: **2020-02-01, 1398/11/12**
Update count: **0**

Registration date

2020-02-01, 1398/11/12

Registrant information

Name

mahdi pouyafar

Name of organization / entity

Hakim Sabzevari University

Country

Iran (Islamic Republic of)

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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2019-07-05, 1398/04/14

Expected recruitment end date
2019-09-20, 1398/06/29
Actual recruitment start date
2019-07-05, 1398/04/14
Actual recruitment end date
2019-09-20, 1398/06/29
Trial completion date
2019-09-20, 1398/06/29

Scientific title
Comparison of the effect a course of combination of Vibration and Aerobic Training with two different intensities on Electromyography Indicators in Elderly Men

Public title
The effect of vibration and aerobic exercises on indices Electromyography of muscles
Purpose
Prevention
Inclusion/Exclusion criteria
Inclusion criteria:
Healthy Elderly
Exclusion criteria:
Heart disorders Arthritis Diseases Insulin-dependent diabetes mellitus Disk problems in Lumbar vertebrae Musculoskeletal Disability Inflammation and severe infections Motor disability
Age
From **60 years** old to **70 years** old
Gender
Male

Phase
N/A
Groups that have been masked

- Participant
- Care provider
- Outcome assessor
- Data analyser

Sample size
Target sample size: **53**
Actual sample size reached: **30**
Randomization (investigator's opinion)
Randomized
Randomization description
Simple randomization method (dice throwing) was used to determine the research units in three groups of ten. The numbers 1 and 2 were considered for the control group, 3 and 4 for the low intensity experimental group and 5 and 6 for the high intensity experimental group.By rolling the dice, each person's group was identified and continued until the sample size was completed.Then the research units were divided into three groups of 10 each.
Blinding (investigator's opinion)
Single blinded
Blinding description
Subjects, Clinical Caregivers, Assessors and Analysts of Possible Effects of Exercise Intensity on Muscle Strength And which exercise intensity works best was unaware.
Placebo
Not used
Assignment
Parallel
Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee
Name of ethics committee
National Committee on Ethics in Biomedical Research
Street address
Andishe Town-end of Andishe 5
City
Sabzevar
Province
Razavi Khorasan
Postal code
9613711111
Approval date
2019-05-03, 1398/02/13
Ethics committee reference number
IR.HSU.REC.1398.002

Health conditions studied

1

Description of health condition studied
Indicators Elderly men's muscle electromyography
ICD-10 code
ICD-10 code description

Primary outcomes

1

Description
Co-activation of agonist and antagonist ratio in the lower and upper extremities
Timepoint
8 weeks
Method of measurement
Datalog-MWX8 Bluetooth Electromyogram Signal Recorder

2

Description
Muscle range In the lower and upper limbs
Timepoint
8 weeks
Method of measurement
Datalog-MWX8 Bluetooth Electromyogram Signal Recorder

3

Description

Frequency of mean muscle strength in lower and upper extremities

Timepoint

8 weeks

Method of measurement

Datalog-MWX8 Bluetooth Electromyogram Signal Recorder

Secondary outcomes

empty

Intervention groups

1

Description

Category

empty

2

Description

Intervention group: Exercise group with vibration training with frequency of HZ40 and 3mm amplitude consisting of four 1-minute sets in the first four weeks and 5-minute sets in the second four weeks with 30-45 seconds rest between sets and two-minute rope sets. Last sessions: 6 sets of 1 minute and 30 seconds rest between sets and 30-35 jumps per minute

Category

Rehabilitation

3

Description

Intervention group: Second group with HZ25 frequency and 3mm amplitude amplifier consisting of four 1-minute sets in the first four weeks and five 1-minute sets in the second four weeks with 30-45 seconds rest between sets and two-minute rope sets and 6-minute sessions. One minute set and 30 seconds rest between sets and 30-35 jumps per minute

Category

Rehabilitation

4

Description

Control group: The third group control without Practice

Category

N/A

Recruitment centers

1

Recruitment center

Name of recruitment center

Department of Sport Physiology, Faculty of Sport Sciences, Hakim Sabzevari University

Full name of responsible person

Roya Askari

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Hakim Sabzevari University

Full name of responsible person

Ahmad farzane kord

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Sabzevar, Tohid Shahr, Wise University of Sabzevari, Faculty of Basic Sciences, Department of Physics

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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

Hakim Sabzevari University

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

Hakim Sabzevari University

Full name of responsible person
Ahmad farzane kord

Position
Assistant Professor, Department of physics

Latest degree
Ph.D.

Other areas of specialty/work
nuclear physics

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Assistant Professor, Department of Sport Physiology

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Sharing plan

Deidentified Individual Participant Data Set (IPD)
No - There is not a plan to make this available

Justification/reason for indecision/not sharing IPD
The information is confidential

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
No - There is not a plan to make this available

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