

# Clinical Trial Protocol

## Iranian Registry of Clinical Trials

11 Sep 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 bicus 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)

##### Phone

+98 51 4465 5740

##### Email address

ma.pouyafar1358@gmail.com

##### 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

#### Street address

Faculty of Sport Sciences, Pardis Hakim Sabzevari University, Tohid town, Sabzevar

#### City

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#### Province

Razavi Khorasan

#### Postal code

9617976487

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+98 51 4401 2754

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#### Email

r.askari@hsu.ac.ir

#### Web page address

## Sponsors / Funding sources

### 1

#### Sponsor

##### Name of organization / entity

Hakim Sabzevari University

##### Full name of responsible person

Ahmad farzane kord

##### Street address

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

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##### Phone

+98 51 4401 2520

##### Email

afarzaneh@hsu.ac.ira

#### 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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**Person responsible for scientific inquiries**

**Contact**

**Name of organization / entity**

Hakim Sabzevari University

**Full name of responsible person**

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**Position**

Assistant Professor, Department of Sport Physiology

**Latest degree**

Ph.D.

**Other areas of specialty/work**

Physiology

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**Person responsible for updating data**

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**Position**

Assistant Professor, Department of Sport Physiology

**Latest degree**

Ph.D.

**Other areas of specialty/work**

science Committee

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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