

Clinical Trial Protocol

Iranian Registry of Clinical Trials

06 Jul 2026

Effect of 12 Weeks Selected Rubber Band Resistance Training on Serum Fibroblast Growth Factor 23 and Insulin Resistance in Older Women

Protocol summary

Study aim

The purpose of this study was to investigate the effect of twelve weeks of resistance training with bonding on serum levels of FGF23 and insulin resistance in elderly women.

Design

30 of them were selected based on inclusion criteria and randomly divided into two experimental groups (15) and control (15 people).

Settings and conduct

The statistical population of this research is more than 55 elderly women in elderly people who are highly educated. 30 of them were selected based on inclusion criteria and were randomly divided into two groups. The training program is run for 12 weeks with resistance training with bundling 3 times per week and for 36 sessions under the supervision of the instructor. Each training session is 55 minutes, including 10 minutes of warm-up, followed by 40 minutes of resistance training, and finally 5 minutes of cooldown. . 24 hours before and 48 hours after training, anthropometric and physiological indices will be evaluated at the beginning and end of the study.

Participants/Inclusion and exclusion criteria

The criteria for entering the study included the age range of 65-80 years, the absence of chronic diseases, respiratory and pulmonary disease, renal, psychiatric, cardiac arrhythmias and diabetic foot ulcers and nephropathy, and lack of motor limitation. The criteria for not getting a physical injury in such a way that they can not participate in the exercises are illness and the need for drug use

Intervention groups

Experimental group: Resilient training exercises for 12 weeks, 3 sessions per week and 55 minutes each session. Exercise intensity will increase with the use of elastic band colors. Control group: This group did not receive any interventional medication.

Main outcome variables

FGF23 serum levels Insulin resistance

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20190218042751N1**

Registration date: **2019-04-01, 1398/01/12**

Registration timing: **retrospective**

Last update: **2019-04-01, 1398/01/12**

Update count: **0**

Registration date

2019-04-01, 1398/01/12

Registrant information

Name

Mahshid Fathi

Name of organization / entity

The University of Shahrekord

Country

Iran (Islamic Republic of)

Phone

+98 31 3345 5534

Email address

mahshid_isfahan@yahoo.com

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2019-02-18, 1397/11/29

Expected recruitment end date

2019-03-20, 1397/12/29

Actual recruitment start date

2019-02-16, 1397/11/27

Actual recruitment end date

2019-03-09, 1397/12/18

Trial completion date

2019-03-09, 1397/12/18

Scientific title

Effect of 12 Weeks Selected Rubber Band Resistance Training on Serum Fibroblast Growth Factor 23 and Insulin Resistance in Older Women

Public title

Effect of Selected Rubber Band Resistance Training in Older Women

Purpose

Prevention

Inclusion/Exclusion criteria**Inclusion criteria:**

Age range of 65-80 years old, lack of chronic diseases, respiratory and pulmonary disease, renal, psychiatric, cardiac arrhythmias and diabetic foot ulcers and nephropathy, and lack of motor limitation

Exclusion criteria:

Physical injury in such a way that they can not participate in the training, the disease and the need for medication

Age

From **65 years** old to **80 years** old

Gender

Female

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **55**

Actual sample size reached: **55**

Randomization (investigator's opinion)

Randomized

Randomization description

Random sampling is simple and is used for drawing lottery. In this way, each of the elderly has equal chances to be elected. The names of the people are written on the cards, and then the cards are mixed. The cards on the cards are the names of the elderly who are selected based on the criteria for entering the study.

Randomly 30 cards are selected from 55 cards.

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

Sport Sciences Research Institute of Iran

Street address

Shahid Zare Ave, Ghaem Blvd, Shahid Radanipour Highway

City

Isfahan

Province

Isfahan

Postal code

8138865696

Approval date

2019-02-16, 1397/11/27

Ethics committee reference number

IR.SSRI.REC.1397.365

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

Serum Fibroblast Growth Factor 23 and Insulin Resistance

ICD-10 code**ICD-10 code description****Primary outcomes****1****Description**

Serum levels of FGF23

Timepoint

Before and after 12 weeks elastic band strength training

Method of measurement

Using ELISA Kit

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

Insulin resistance

Timepoint

Before and after 12 weeks elastic band strength training

Method of measurement

The glucose and insulin levels are measured using the kit and the insulin resistance is measured by the HOMA formula.

Intervention groups**1****Description**

Intervention group: Experimental group: Running resistance exercises for 12 weeks, 3 sessions per week and 55 minutes each session. Exercise intensity will increase with the use of elastic band colors.

Category

Lifestyle

2

Description

Control group: This group did not receive any sports intervention.

Category

Lifestyle

Recruitment centers

1

Recruitment center

Name of recruitment center

Chaleshtar's elderly center

Full name of responsible person

Mahshid Fathi

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

The University of Shahrekord

Full name of responsible person

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Grant name

Grant code / Reference number

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

No

Title of funding source

researcher

Proportion provided by this source

100

Public or private sector

Private

Domestic or foreign origin

Domestic

Category of foreign source of funding

empty

Country of origin

Type of organization providing the funding

Other

Person responsible for general inquiries

Contact

Name of organization / entity

The University of Shahrekord

Full name of responsible person

Mahshid Fathi

Position

coach

Latest degree

Master

Other areas of specialty/work

sport

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

The University of Shahrekord

Full name of responsible person

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Position

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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