Clinical Trial Protocol
Iranian Registry of Clinical Trials

17 Sep 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
Isfehan
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
Street address
Shahid Zare Ave, Ghaem Street, Shahid Radanipour highway
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mahshid_isfahan@yahoo.com

Sponsors / Funding sources

1

Sponsor
Name of organization / entity
The University of Shahrekord
Full name of responsible person
Mahshid Fathi
Street address
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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

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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