Clinical Trial Protocol
Iranian Registry of Clinical Trials

17 Sep 2026

The effect of 12 weeks of resistance training with different muscle tensions on mir-92, mir-204, mir-214, mir-233 and sclerostin in elderly women

Protocol summary

Study aim

Determining the effect of 12 weeks of resistance training with different muscle tensions on mir-92, mir-204, mir-214, mir-233 and sclerostin in elderly women.

Design

The statistical sample of this research will be 45 healthy elderly women with an age range of 60 to 65 years living in Khorram Abad city. According to the initial estimate, 45 people will be randomly divided into three resistance groups 1 (15 people), resistance group 2 (15 people) and control (15 people). Then the experimental group will perform resistance exercises for 12 weeks and 3 sessions per week according to the protocol.

Settings and conduct

After obtaining the necessary permits from various authorities including the University of Medical Sciences and the ethics committee and coordinating with orthopedic specialists, then the research samples will be referred to the parks and the retirement organization, and the statistical sample of this research is 45 healthy elderly women with a range of 60 to 65 years old residents of Khorram Abad will form.

Participants/Inclusion and exclusion criteria

Participants must be residents of Khorram Abad city, be menopausal, not have any sports activities in the last six months

Intervention groups

The resistance training protocol in the first group is in the form of three periods of 12 repetitions with 75% of a maximum repetition and with two-minute rests between periods, with a duration of one second of muscle tension (one second of flexion and one second of extension) and in the second group in the form of three The three-repetition period was performed with 50% of a maximum repetition and with two-minute rests between periods, with a duration of six seconds of muscle tension (six seconds of flexion and six seconds of extension). The control group does not do any sports during this time.

Main outcome variables

microRNA (214), microRNA (232), microRNA (92), sclerostin

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20230828059290N2**
Registration date: **2023-09-12, 1402/06/21**
Registration timing: **prospective**

Last update: **2023-09-12, 1402/06/21**
Update count: **0**

Registration date

2023-09-12, 1402/06/21

Registrant information

Name

Fazlollah Fathollahi

Name of organization / entity

Country

Iran (Islamic Republic of)

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+98 66 3342 5492

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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2023-09-23, 1402/07/01

Expected recruitment end date

2023-12-22, 1402/10/01

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

The effect of 12 weeks of resistance training with different muscle tensions on mir-92, mir-204, mir-214, mir-233 and sclerostin in elderly women

Public title

The effect of sports activity on bones

Purpose

Prevention

Inclusion/Exclusion criteria

Inclusion criteria:

No surgery Not having any heart disease Not smoking and drinking alcohol Not having a physical problem such as orthopedic and brain-nervous problems that prevent exercise. Blood pressure > 110/180 as a criterion for exiting the study process Menopause Age range in the specified age range of 45 to 65

Exclusion criteria:

Lack of continuous exercise before starting the training program Inability to exercise

Age

From **45 years** old to **65 years** old

Gender

Female

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **15**

Randomization (investigator's opinion)

Randomized

Randomization description

It is block randomization. In order to perform block randomization, a specific code is assigned to each of the people under study (66 people). Then, blocks with a volume of 6 people, which have 3 exclusive codes, are defined. Two A codes, two B codes, and two C codes are identified. Each of these three codes represent each of the groups under study. From the combination and sequence of these codes in blocks of 6, different blocks are created. Then, using Stata software version 17 and using the command code egen block, blocks of 6 are selected by simple random method with placement. 11 blocks are selected using simple random placement method.

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

Research Ethics Committees of Lorestan University of Medical Sciences

Street address

km 4, Borujerd Road, Vice-Chancellor of Research and Technology, Lorestan University of Medical Sciences

City

Khorram Abad

Province

Lorestan

Postal code

418326599877

Approval date

2023-08-09, 1402/05/18

Ethics committee reference number

IR.LUMS.REC.1402.170

Health conditions studied

1

Description of health condition studied

The subject of study is not a disease

ICD-10 code

ICD-10 code description

ICD-10

Primary outcomes

1

Description

Increased serum sclerostin levels

Timepoint

48 hours before and after the last training session

Method of measurement

blood test

2

Description

decreased serum mir-92 levels

Timepoint

48 hours before and after the last training session

Method of measurement

blood test

3

Description

Increased serum mir-214 levels

Timepoint

48 hours before and after the last training session

Method of measurement
blood test

4

Description
decreased serum mir-233 levels
Timepoint
48 hours before and after the last training session
Method of measurement
blood test

Secondary outcomes

1

Description
noblood pressure
Timepoint
48 hours before and after the implementation of the research protocol
Method of measurement
nothrough a blood pressure monitor

Intervention groups

1

Description
Intervention group: Intervention group: In this research, according to the training protocol, there are two intervention groups. In the first group, the resistance training protocol is in the form of three periods of 12 repetitions with 75% of a maximum repetition and with two-minute rests between periods, with a duration of one second of muscle tension. (one second of flexion and one second of extension) and in the second group in the form of three periods of three repetitions with 50% of a maximum repetition and with two-minute rests between periods, with a duration of six seconds of muscle tension (six seconds of flexion and six seconds of extension). Was performed.
Category
Diagnosis

2

Description
Control group: Control group: In this research, there is a control group and they will not do any regular physical activity or exercise during the implementation of the protocol.
Category
N/A

Recruitment centers

1

Recruitment center
Name of recruitment center
Shahid Rahimi Hospital
Full name of responsible person
F azlollah Fathollahi
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Azadi Square, Shahid Rahimi Hospital
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Sponsors / Funding sources

1

Sponsor
Name of organization / entity
Khoram-Abad University of Medical Sciences
Full name of responsible person
Bahram Rasoulian
Street address
Kilometer 4 of Borujerd Road, Vice-Chancellor of Research and Technology of Lorestan University of Medical Sciences
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326598741
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research@lums.ac.ir
Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
Yes
Title of funding source
Khoram-Abad 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
Khoram-Abad University of Medical Sciences
Full name of responsible person
Fazlollah Fathollahi Shoorabeh
Position
Assistant Professor
Latest degree
Ph.D.
Other areas of specialty/work
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Person responsible for updating data

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Sharing plan

Deidentified Individual Participant Data Set (IPD)
Yes - There is a plan to make this available
Study Protocol
Yes - There is a plan to make this available
Statistical Analysis Plan
Yes - There is 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
Yes - There is a plan to make this available
Analytic Code
Yes - There is a plan to make this available
Data Dictionary
Undecided - It is not yet known if there will be a plan to make this available
Title and more details about the data/document
The information is confidential and the results will be published as an article
When the data will become available and for how long
It does not have a specific yield
To whom data/document is available
Only the research team is allowed to access the data
Under which criteria data/document could be used
It is for the purpose of analyzing information.
From where data/document is obtainable
The documents are only available to the research team
What processes are involved for a request to access data/document
The documents are only available to the research team
Comments