

Clinical Trial Protocol

Iranian Registry of Clinical Trials

10 Jun 2026

Effects of resistance and aerobic exercises training on CAF, CCR and P3NP related with sarcopenia and dynapenia in elderly

Protocol summary

Study aim

Determining the effect of 8 weeks of aerobic and resistance training on serum levels of N-terminal peptide type 3 (P3NP), agrin C fragment (CAF), creatinine to cystatin C ratio, some functional indices (upper and lower body strength, aerobic endurance, balance), some body composition indices (weight, body mass index, fat mass and muscle mass) in elderly women

Design

A quasi-experimental design with a control group, with factorial groups, single-blind, randomized on 36 elderly people, Randomi allocation software will be used for randomization.

Settings and conduct

It will be conducted in the field of exercise physiology in the city of Tabriz, and the participants will be unaware of how the other groups performed.

Participants/Inclusion and exclusion criteria

1. No medication 2. No specific skeletal disease 3. No underlying disease 4. Ability to perform sports 5. Women aged 65 to 75 6. No metabolic disease (diabetes, blood pressure, high cholesterol, etc.) 7. Possibility of sarcopenia (decreased muscle function) 8. No risk factors (chest pain, heart attack in first-degree relatives, limping when walking, etc.)

Intervention groups

The aerobic exercise group will perform simple aerobic activities, walking, jogging and slow running continuously and in the form of 8. The resistance group exercises include movements that involve the main muscle groups. Initially, movements will be performed for 10 to 15 repetitions then will increase to 8 to 12 repetitions. The intensity of the movements will also range from 40 to 50% of 1RM to 60 to 80% of 1RM. The control group will follow the normal course of daily activities.

Main outcome variables

Preventing sarcopenia and dynapenia in the elderly, which ultimately improves life in the elderly and reduces the burden of additional costs and independence of the

elderly.

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20240108060648N2**

Registration date: **2025-11-14, 1404/08/23**

Registration timing: **prospective**

Last update: **2025-11-14, 1404/08/23**

Update count: **0**

Registration date

2025-11-14, 1404/08/23

Registrant information

Name

Fatemeh Baharavar

Name of organization / entity

The university of tabriz

Country

Iran (Islamic Republic of)

Phone

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Email address

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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2025-11-15, 1404/08/24

Expected recruitment end date

2025-12-15, 1404/09/24

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Effects of resistance and aerobic exercises training on CAF, CCR and P3NP related with sarcopenia and dynapenia in elderly

Public title

Effect of resistance and aerobic training on dynapenia and sarcopenia

Purpose

Prevention

Inclusion/Exclusion criteria

Inclusion criteria:

Possibility of doing sports activities The presence of sarcopenia

Exclusion criteria:

Taking medication Having certain musculoskeletal diseases Underlying disease Presence of risk factors (chest pain, heart attack in first-degree relatives, limping when walking, etc.)

Age

From **65 years** old to **75 years** old

Gender

Female

Phase

N/A

Groups that have been masked

- Participant

Sample size

Target sample size: **36**

Randomization (investigator's opinion)

Randomized

Randomization description

The study population will be elderly women aged 65 to 75 years in Tabriz city, who will be selected on a convenience and voluntary basis. Then 36 people will be selected and after measuring body composition indices and morphological characteristics, they will be randomly divided into 3 groups control, aerobic and resistance groups using the Random allocation software program. Then the groups will be homogenized in terms of age and then concealment will be done using sealed envelopes to prevent bias.

Blinding (investigator's opinion)

Single blinded

Blinding description

Concealment will be done using sealed envelopes to prevent bias

Placebo

Not used

Assignment

Factorial

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Ethical committee of Tabriz University of Medical sciences

Street address

Faculty of Physical Education and Sport Sciences, University of Tabriz, Abrassan street

City

Tabriz

Province

East Azarbaijan

Postal code

5164736931

Approval date

2025-05-24, 1404/03/03

Ethics committee reference number

IR.TABRIZU.REC.1404.030

Health conditions studied

1

Description of health condition studied

Sarcopenia- Dinapenya

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description

Creatinine to cystatin C ratio

Timepoint

24 hours before starting the training protocol and 48 hours after its completion

Method of measurement

Creatinine measurement using Pars Azmoun kits Tehran, Iran -Cys-C measurement using ELISA kit (BioVendor, Czech Republic)

2

Description

N-terminal propeptide of procollagen type 3

Timepoint

24 hours before starting the training protocol and 48 hours after its completion

Method of measurement

N-terminal propeptide of procollagen type 3 kit from zellbio, Germany

3

Description

Agrin C-terminal fragment

Timepoint

24 hours before starting the training protocol and 48

hours after its completion

Method of measurement

Agrin C-terminal fragment kit from zellbio, Germany

Secondary outcomes

1

Description

Body composition index

Timepoint

24 hours before the protocol and 48 hours after the protocol is completed

Method of measurement

Digital Arzoom scale for measuring the weight of subjects - German Seka model 769 height scale for measuring the height of tests - Body composition formula

Intervention groups

1

Description

first Intervention group: The aerobic exercise group will perform simple aerobic activities, walking, jogging, and slow running continuously in a figure-8 pattern. The load of walking sessions will gradually increase during the training weeks.

Category

Lifestyle

2

Description

Second Intervention group: Resistance group exercises include movements that involve the main muscle groups. Each session will last about an hour, including 10 minutes of warm-up, 10 minutes of cool-down, and 40 minutes of main exercises. The movements will be performed stationary. In the first sessions, 8 movements will start in two rounds, and gradually the number of movements will increase to 10 movements in three rounds. Initially, movements will be performed for 10 to 15 repetitions, and as the sessions progress, they will reach 8 to 12 repetitions. The intensity of the movements will also range from 40 to 50 percent of 1RM (low intensity) to 60 to 80 percent of 1RM (moderate intensity). The exercises will initially start with low intensity, and then overload will be applied according to the readiness of the subjects.

Category

Lifestyle

3

Description

Control group: The control group will follow their normal daily activities during this period. Subjects will be asked to refrain from exercise 48 hours before blood collection.

Category

Lifestyle

Recruitment centers

1

Recruitment center

Name of recruitment center

An invitation to cooperate will be posted on social media channels, public and health centers, and t

Full name of responsible person

Baharavar Fatemeh

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

The univercity of tabriz

Full name of responsible person

Javad Vakili

Street address

Abersan Street, University of Tabriz, Faculty of Physical Education and Sport Sciences

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vakili.tu@gmail.com

Grant name

Grant code / Reference number

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

No

Title of funding source

Fatemeh Baharavar

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

Person responsible for general inquiries

Contact

Name of organization / entity

The univercity of tabriz

Full name of responsible person

Fatemeh Baharavar

Position

Phd student and teacher

Latest degree

Ph.D.

Other areas of specialty/work

Exercise physiologist

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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

Yes - There is 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

Yes - There is a plan to make this available

Title and more details about the data/document

All data can be shared after being de-identified.

When the data will become available and for how long

Since 1405

To whom data/document is available

It will be available to researchers working in academic and scientific institutions.

Under which criteria data/document could be used

Researchers can use this data

From where data/document is obtainable

Fatemeh Baharavar

What processes are involved for a request to access data/document

By email

Comments