

Clinical Trial Protocol

Iranian Registry of Clinical Trials

26 Jun 2026

The effect of 8 weeks of resistance training and leucine supplements on protein synthesis in old men bearing Sarcopenia

Protocol summary

Summary

The purpose of this study was to determine the effect of 8 weeks resistance training and leucine supplementation on protein synthesis in older men with sarcopenia. In this study, 40 elderly bearing Sarcopenia based on muscle strength of hand less than 26- 30 kg were selected and after explaining the study and obtaining written consent in 4 groups of 10 people including resistance training and supplementation, resistance training, supplementation and control is divided. Resistance training performed for 8 weeks, 3 days a week. Starting the exercise at the first session with a 35% intensity maximum of one maximum repeat (1RM) for 20 minutes and in the final session to 70% of the 1RM for 45 minutes. The supplement and control groups consumes 3 grams of leucine and placebo per main meal. Samples are collected one day before the protocol is executed and 72 hours after the last training session. Concentration of serum insulin, urine nitrogen, muscle mass, muscle strength and walking speed are measured.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT2017071034997N1**

Registration date: **2017-09-03, 1396/06/12**

Registration timing: **retrospective**

Last update:

Update count: **0**

Registration date

2017-09-03, 1396/06/12

Registrant information

Name

zahra sadat pormozafari

Name of organization / entity

Bahonar Kerman

Country

Iran (Islamic Republic of)

Phone

+98 32758907

Email address

geochemistry@iauzar.ac.ir

Recruitment status

Recruitment complete

Funding source

Private

Expected recruitment start date

2017-02-19, 1395/12/01

Expected recruitment end date

2017-04-21, 1396/02/01

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

The effect of 8 weeks of resistance training and leucine supplements on protein synthesis in old men bearing Sarcopenia

Public title

Effect of resistance exercise and supplement leucine on the treatment of Sarcopenia

Purpose

Treatment

Inclusion/Exclusion criteria

Criteria: Male; Aged 60- 65; Having general physical and mental health. Exclusion criteria: Having a history of chronic disease (heart failure, chronic obstructive pulmonary disease, kidney failure, cancer, diabetes, anemia and thyroid disease); Drug use or supplementation (such as corticosteroids and anabolic hormones); Inability to exercise; Having regular exercise

history (3 times a week, more than 30 minutes).

Age

From **60 years** old to **65 years** old

Gender

Male

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **40**

Randomization (investigator's opinion)

Randomized

Randomization description

Blinding (investigator's opinion)

Single blinded

Blinding description

Placebo

Used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Ethics committee kerman university of medical sciences & health services

Street address

Beginning of Ibn Sina street, Beginning of Jihad Boulevard, Four Way Somayeh

City

Kerman

Postal code

Approval date

2017-03-18, 1395/12/28

Ethics committee reference number

IR.kmu.REC.1395.359

Health conditions studied

1

Description of health condition studied

Sarcopenia

ICD-10 code

M62.84

ICD-10 code description

Sarcopenia

Primary outcomes

1

Description

Protein synthesis

Timepoint

Before and 8 weeks after intervention

Method of measurement

Evaluation of nitrogen balance and muscle mass

Secondary outcomes

1

Description

Insulin

Timepoint

Before and after 8 weeks of intervention

Method of measurement

kamilonseans

2

Description

Hand muscle strength

Timepoint

Before and after 8 weeks of intervention

Method of measurement

Manual dynamometer

3

Description

Walking speed

Timepoint

Before and after 8 weeks of intervention

Method of measurement

4 metres walking speed

Intervention groups

1

Description

The training group 8 weeks and each week 3 sessions of resistance training performed with a duration of 20- 45 minutes and intensity of 35- 70 % one repetition maximum and 48 hours of rest between sessions.

Category

Other

2

Description

The supplement group consumes 3 grams of leucine per meal for 8 weeks and 3 sessions each week.

Category

Other

3

Description

The exercise and supplements group for 8 weeks and each week 3 sessions of resistance training performed

with a duration of 20- 45 minutes and intensity of 35- 70 % one repetition maximum and 48 hours of rest between sessions. Also, 3 grams of leucine supplement consumes ratio 1/3, 1 hour before and 3 hours after exercise.

Category

Other

4

Description

The control group consumes 3 grams of placebo per meal for 8 weeks and 3 sessions each week.

Category

Other

Recruitment centers

1

Recruitment center

Name of recruitment center

Center Elderly Amir al-Momenin

Full name of responsible person

Street address

City

kerman

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Bahonar University

Full name of responsible person

Dr Maryam Ehtesham Zadeh

Street address

Boulevard 22 Bahman, Kerman

City

kerman

Grant name

Grant code / Reference number

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

Yes

Title of funding source

Bahonar University

Proportion provided by this source

100

Public or private sector

empty

Domestic or foreign origin

empty

Category of foreign source of funding

empty

Country of origin

Type of organization providing the funding

empty

Person responsible for general inquiries

Contact

Name of organization / entity

Bahonar University

Full name of responsible person

Dr Mohsen Aminai

Position

Ph.D. Sports Physiology

Other areas of specialty/work

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Person responsible for scientific inquiries

Contact

Name of organization / entity

Bahonar University

Full name of responsible person

Dr Rohollah Nikooie

Position

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Other areas of specialty/work

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Person responsible for updating data

Contact

Name of organization / entity

Bahonar University

Full name of responsible person

Zahra Sadat Pourmazfari

Position

Other areas of specialty/work

Street address

City

kerman

Postal code

Phone

+98 34 3275 8907

Fax

Email

Web page address

Sharing plan

Deidentified Individual Participant Data Set (IPD)

empty

Study Protocol

empty

Statistical Analysis Plan

empty

Informed Consent Form

empty

Clinical Study Report

empty

Analytic Code

empty

Data Dictionary

empty