Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 2026

The eight weeks effect of resistance training on rotational levels of Klotho and myostatin of muscle function in middle-aged women

Protocol summary

Study aim
The purpose of the present study is to determine the effect of an 8-week resistance training program on rotational levels of Klotho and myostatin of muscle function in middle-aged women.

Design
Practical trial with 20 subjects who entered in two groups of training and control using a random number table.

Settings and conduct
The subjects practiced three sessions per week for 8 weeks. The training protocol consisted of 8 stations of knee flexion, lying leg curl, bodyweight seated calf raise, barbell guillotine bench press, seated dumbbell shoulder press, barbell curl, LAT pull, and six-pack crunch performed by the subjects with the intensity of 50-80% of maximum strength.

Participants/Inclusion and exclusion criteria
Target age range, females, no history of regular physical activity, no cardiovascular disease, no neuromotor diseases, no high blood pressure, no diabetes

Intervention groups
Eight weeks of resistance training with bodybuilding equipment and control group without any exercise

Main outcome variables
Increasing the amount of Klotho, decreasing myostatin, and improving muscle function

General information

Reason for update

Acronym

IRCT registration information
IRCT registration number: **IRCT20211016052781N1**
Registration date: **2021-12-03, 1400/09/12**
Registration timing: **retrospective**

Last update: **2021-12-03, 1400/09/12**
Update count: **0**

Registration date
2021-12-03, 1400/09/12

Registrant information

Name
fatemeh foroughinasab
Name of organization / entity
The University of Shahid Chamran ahvaz
Country
Iran (Islamic Republic of)
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+98 61 4252 3137
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fafon1806@gmail.com

Recruitment status
Recruitment complete

Funding source

Expected recruitment start date
2021-07-23, 1400/05/01

Expected recruitment end date
2021-09-23, 1400/07/01

Actual recruitment start date
2021-07-23, 1400/05/01

Actual recruitment end date
2021-09-23, 1400/07/01

Trial completion date
2021-09-25, 1400/07/03

Scientific title
The eight weeks effect of resistance training on rotational levels of Klotho and myostatin of muscle function in middle-aged women

Public title
The eight weeks effect of resistance training on rotational levels of Klotho and myostatin of muscle function in middle-aged women

Purpose
Education/Guidance

Inclusion/Exclusion criteria

Inclusion criteria:
Target age range Females No history of regular physical activity
Exclusion criteria:
Having cardiovascular disease high blood pressure neuromotor diseases Diabetes

Age
From **40 years** old to **50 years** old

Gender
Female

Phase
N/A

Groups that have been masked
No information

Sample size
Target sample size: **20**
Actual sample size reached: **20**

Randomization (investigator's opinion)
Not randomized

Randomization description

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
Ethics committee of Shahid Chamran University

Street address
Shahid Chamran University, Golestan Boulevard, Ahvaz, Khoozestan. Iran

City
Ahvaz

Province
Khouzestan

Postal code
6135783151

Approval date
2021-05-23, 1400/03/02

Ethics committee reference number
EE/1400.3.02.25314/scu.ac.ir

Health conditions studied

1

Description of health condition studied
Aging

ICD-10 code

ICD-10 code description

2

Description of health condition studied
sarcopenia

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description
klotho

Timepoint
48 hours before the first session and after the last session

Method of measurement
Using the ELISA kit

2

Description
Myostatin

Timepoint
48 hours before the first session and after the last session

Method of measurement
Using the ELISA kit

3

Description
Muscle function (Strength, endurance, muscle strength)

Timepoint
48 hours before the first session and after the last session

Method of measurement
Maximum power,30% of maximum power,Sargent test

Secondary outcomes

empty

Intervention groups

1

Description
Intervention group: Resistance training group: After returning to the training site, the subjects warmed up their bodies for 10 minutes, which included general and specific warm-ups. 8 stations of knee flexion, lying leg curl, body weight seated calf raise, barbell guillotine bench press, seated dumbbell shoulder press, barbell curl, LAT pull, and six-pack crunch was performed with the intensity of 50-80% of maximum power. The number of repetitions of each station was 8-12. The subjects rested for 60-90 seconds between stations. There was also 2-3 minutes of rest time between training sessions (an 8-station exercise). There were 3 training sessions and at the end of the training, the subjects cooled their

bodies for 5 minutes with stretching movements. In order to observe the principle of overload, 5% was added to the training load every week until the fifth week, so the intensity of 50-55% to the eighth week reached the maximum of 75-80% since the first week.

Category
N/A

2

Description
Control group: They did not have any sports activities during the project

Category
N/A

Recruitment centers

1

Recruitment center

Name of recruitment center
Shahid Chamran University

Full name of responsible person
Fatemeh Foroughi Nasab

Street address
No. 228 Dehghan Street between Motahhari and Khayyam streets

City
dezful

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Email
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Sponsors / Funding sources

1

Sponsor

Name of organization / entity
Shahid Chamran University

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?
Yes

Title of funding source
Shahid Chamran University

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
Shahid Chamran University

Full name of responsible person
Fatemeh Foroughi Nasab

Position
Ph.D candidate

Latest degree
Ph.D.

Other areas of specialty/work
Sports physiology

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No. 228 Dehghan Street between Motahhari and Khayyam streets

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Person responsible for scientific inquiries

Contact

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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
Not applicable
Informed Consent Form
Undecided - It is not yet known if there will be a plan to make this available
Clinical Study Report
Not applicable
Analytic Code
Not applicable
Data Dictionary
Not applicable