Clinical Trial Protocol
Iranian Registry of Clinical Trials

16 Sep 2026

The effect of 8-week different combined training (strength and endurance) on resting Ghrelin levels and energy expenditure in overweight women

Protocol summary

Summary

The main purpose of this study was to investigate the effect of 8-week different combined training (strength and endurance) on resting Ghrelin levels and energy expenditure in overweight women. Design and method of study: This study is an interventional research. 30 overweight female (aged 18-32 years, body mass index ≥ 25 kg/m2) was selected and randomly divided into three groups, endurance + resistance (E+S), resistance + endurance (S+E) and control group. Training programs performed for eight week, 3 times per week. Endurance training include training on the bicycle ergometer at 60 minutes and resistance training include eight selected strength training. Inclusion criteria: female; age between 18 to 32 years old; the level of physical and mental health. Exclusion criteria: history of cardiovascular diseases, cancer, high blood pressure, diabetes, thyroid disease; addiction to any smoking, alcohol and narcotic substances; hormonal disorders; kidney or liver disease; surgery any medical intervention affecting the experimental results. Primary outcome: the Ghrelin level and daily energy expenditure were measured 24 hours before and 48 hours after training program.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT2017080319995N8**
Registration date: **2017-09-11, 1396/06/20**
Registration timing: **retrospective**

Last update:
Update count: **0**

Registration date

2017-09-11, 1396/06/20

Registrant information

Name

Zahra Mardanpour Shahrekordi

Name of organization / entity

Shahrekord University

Country

Iran (Islamic Republic of)

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Recruitment status

Recruitment complete

Funding source

Vice chancellor for research, Shahrekord University

Expected recruitment start date

2016-04-20, 1395/02/01

Expected recruitment end date

2016-05-14, 1395/02/25

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

The effect of 8-week different combined training (strength and endurance) on resting Ghrelin levels and energy expenditure in overweight women

Public title

The effect of different combined training in overweight women

Purpose

Diagnostic

Inclusion/Exclusion criteria

Inclusion criteria: female; age between 18 to 32 years

old; the level of physical and mental health. Exclusion criteria: history of cardiovascular diseases, cancer, high blood pressure, diabetes, thyroid disease; addiction to any smoking, alcohol and narcotic substances; hormonal disorders; kidney or liver disease; surgery any medical intervention affecting the experimental results.

Age
From **18 years** old to **32 years** old

Gender
Female

Phase
2

Groups that have been masked
No information

Sample size
Target sample size: **72**

Randomization (investigator's opinion)
Randomized

Randomization description

Blinding (investigator's opinion)
Not blinded

Blinding description

Placebo
Not used

Assignment
Parallel

Other design features
Endurance training performed on the bicycle ergometer and resistance exercise with gym apparatus.

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee
Ethics Committee of Shahrekord University

Street address
Rahbar Blvd, Shahrekord

City
Shahrekord

Postal code

Approval date
2016-03-15, 1394/12/25

Ethics committee reference number
140/3256

Health conditions studied

1

Description of health condition studied
The relationship of sequence order of combined training to the amount of appetite and over weight

ICD-10 code
E66

ICD-10 code description
Obesity

Primary outcomes

1

Description
Ghrelin level

Timepoint
Before and after 8 weeks of intervention

Method of measurement
ELISA kit for Ghrelin

2

Description
Daily energy expenditure

Timepoint
Before and after 8 weeks of intervention

Method of measurement
Harris-Benedict formula

Secondary outcomes

1

Description
Weight

Timepoint
Before and after 8 weeks of intervention

Method of measurement
Weight meter Seca

2

Description
Height

Timepoint
Before and after 8 weeks of intervention

Method of measurement
Using a height gauge model Saros

3

Description
Body Mass Index (BMI)

Timepoint
Before and after 8 weeks of intervention

Method of measurement
Weight divided by height squared

4

Description
Body fat percent

Timepoint
Before and after 8 weeks of intervention

Method of measurement
Using calipers Base Line

5

Description
Maximum strength
Timepoint
Before and after 8 weeks of intervention
Method of measurement
By use 1 Repetition Maximum formul

6

Description
Maximal oxygen uptake
Timepoint
Before and after 8 weeks of intervention
Method of measurement
Test of 12 minutes walking and running

Intervention groups

1

Description
Intervention group 1: The endurance plus strength training group follow an combined training program for 8 weeks Who in the first do endurance training program and then 2 minutes of rest do strength training program.
Category
Other

2

Description
Intervention group 2: The strength plus endurance training group follow an combined training program for 8 weeks Who in the first do strength training program and then 2 minutes of rest do endurance training program.
Category
Other

3

Description
Control group: The control group do not any regular physical activity in daily life.
Category
Other

Recruitment centers

1

Recruitment center
Name of recruitment center
Enghelab gym
Full name of responsible person
Zahra Hemati Farsani
Street address
Facing the Public Services Office, Pasdaran Street, Farsan
City
Farsan

Sponsors / Funding sources

1

Sponsor
Name of organization / entity
Vice chancellor for research, Shahrekord University
Full name of responsible person
Dr Mohammad Faramarzi
Street address
Vice Chancellor for research, Shahrekord University, Rahbar Blvd, Shahrekord
City
Shahrekord
Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
Yes
Title of funding source
Vice chancellor for research, Shahrekord 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
Shahrekord University
Full name of responsible person
Dr Mohammad Faramarzi
Position
PhD, Associate Professor in Exercise Physiology
Other areas of specialty/work
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Person responsible for scientific inquiries

Contact
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Person responsible for updating data

Contact

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Full name of responsible person

Zohreh Shanazari

Position

PhD student of Science in exercise physiology

Other areas of specialty/work

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Phone

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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