Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Oct 2026

The effect of exercise training with different intensities on body composition and brown adipose tissue markers in obese and over weight women

Protocol summary

Study aim

Effect of a course of sport exercises with different intensities on body composition and brown fat indices in obese and overweight women.

Design

The 12-week training program in experimental groups 1 to 3 included heavy running from 77 to 93, a moderate intensity of 64 to 76, and a light intensity of 50 to 63 percent of heart rate at a maximum of three sessions per week. A sample of 50 people who were randomly (The method of tracking) assigned to 4 groups(experimental groups:13, control group:11).Before and after the training period, Irisine, FGF21 and Mayostatin serum samples were taken from all subjects in fasting state., Anthropometric measurements were also performed. clinical trial type: randomized clinical trial with control group

Settings and conduct

The training program is 12 weeks and three sessions a week.The place of the study is the sports hall in Bojnurd city.Subjects will be running in the designated range of heart rates by attending at the gym (5 o'clock).

Participants/Inclusion and exclusion criteria

50 volunteers (mean age: 40/2 ±3/25 years; weight 75/71± 5/71 kg; height 1/61 ± 0/05 m); age range of 35 to 45 years; non-inclusion criteria; Medication or change in diet, cardiovascular disease, having regular physical activity and the criteria for regular menstrual periods 12 months ago and having a body mass greater than 25 kg / m2

Intervention groups

Intervention group 1: interval training with heavy intensity,Intervention group 2: interval training with moderate intensity ,Intervention group 3: interval training with light intensity، control group:Untreated group

Main outcome variables

Irisin; Myostatin; FGF21

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20180714040464N1**
Registration date: **2018-09-06, 1397/06/15**
Registration timing: **retrospective**

Last update: **2018-09-06, 1397/06/15**
Update count: **0**

Registration date

2018-09-06, 1397/06/15

Registrant information

Name

Zeynab Firozeh

Name of organization / entity

Country

Iran (Islamic Republic of)

Phone

+98 58 3228 7930

Email address

zfirozeh@yahoo.com

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2017-11-22, 1396/09/01

Expected recruitment end date

2018-02-19, 1396/11/30

Actual recruitment start date

2018-02-20, 1396/12/01

Actual recruitment end date

2018-05-21, 1397/02/31

Trial completion date
2018-08-22, 1397/05/31

Scientific title
The effect of exercise training with different intensities on body composition and brown adipose tissue markers in obese and over weight women

Public title
The effect of exercise training on body composition and brown adipose tissue markers

Purpose
Prevention

Inclusion/Exclusion criteria
Inclusion criteria:
having regular menstruation 12 months ago having a body mass greater than 25 kg / m2
Exclusion criteria:
Menopause Sickness Tobacco use use of medication or change in diet having regular physical activity

Age
From **35 years** old to **45 years** old

Gender
Female

Phase
N/A

Groups that have been masked
No information

Sample size
Target sample size: **50**
Actual sample size reached: **40**

Randomization (investigator's opinion)
Randomized

Randomization description
Simple random method. The method of tracking was used.Each name dropped out of the container in light, medium, heavy and control groups, respectively.

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
National Ethics Committee in Biomedical Research of Hakim Sabzevari University
Street address
Tohid shahr
City
Sabzevar
Province
Razavi Khorasan
Postal code
9617976487

Approval date
2018-05-12, 1397/02/22

Ethics committee reference number
IR.HSU.REC.1397.002

Health conditions studied

1

Description of health condition studied
obesity , overweight

ICD-10 code
E66

ICD-10 code description
Overweight and obesity

Primary outcomes

1

Description
Irisin

Timepoint
First and 12 weeks later

Method of measurement
ELISA laboratory method

2

Description
Fibroblast growth factor 21(FGF21)

Timepoint
First and 12 weeks later

Method of measurement
ELISA laboratory method

3

Description
Myostatin

Timepoint
First and 12 weeks later

Method of measurement
ELISA laboratory method

Secondary outcomes

1

Description
maximal oxygen consumption(VO2max)

Timepoint
First and 12 weeks later

Method of measurement
Rockport

2

Description
Body Mass Index(BMI)
Timepoint
First and 12 weeks later
Method of measurement
Digital scales and meters

3

Description
Waist–hip ratio (WHR)
Timepoint
First and 12 weeks later
Method of measurement
Meters

4

Description
Body fat percentage
Timepoint
First and 12 weeks later
Method of measurement
Caliper

Intervention groups

1

Description
Intervention group: heavy interval training-Three times a week - 12 weeks - with an intensity of 77-93% of maximum heart rate- Duration of activity from the beginning to the end of the protocol (25 to 65 minutes)
Category
Other

2

Description
Intervention group: medium interval training-Three times a week - 12 weeks - with an intensity of 64-76% of maximum heart rate- Duration of activity from the beginning to the end of the protocol (25 to 65 minutes)
Category
Other

3

Description
Intervention group: low interval training-Three times a week - 12 weeks - with an intensity of50-63% of maximum heart rate- Duration of activity from the beginning to the end of the protocol (25 to 65 minutes)
Category
Other

4

Description
Control group: Lack of exercise within 12 weeks
Category
N/A

Recruitment centers

1

Recruitment center
Name of recruitment center
bojnourd Amusement park
Full name of responsible person
Zeynab Firozeh
Street address
32meter Shohada
City
bojnourd
Province
North Khorasan
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9417618875
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Email
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2

Recruitment center
Name of recruitment center
afarinesh park
Full name of responsible person
zeynab firozeh
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Sponsors / Funding sources

1

Sponsor
Name of organization / entity
Hakim Sabzevari University
Full name of responsible person
Dr. Ahmed Farzaneh kord
Street address
Postbox 397, Hakim Sabzavari University, Tohidshahr, Sabzevar, Khorasan Razavi
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Razavi Khorasan
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Phone

+98 51 4401 2520

Email

afarzaneh@hsu.ac.ir

Grant name

Grant code / Reference number

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

Yes

Title of funding source

Hakim Sabzevari University

Proportion provided by this source

20

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

2

Sponsor

Name of organization / entity

Hakim sabzevari university

Full name of responsible person

Zeynab firozeh

Street address

No 10, Qiam 1st, Bojnourd

City

Bojnourd

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941618875

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zfirozeh@yahoo.com

Grant name

Grant code / Reference number

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

No

Title of funding source

Personal

Proportion provided by this source

80

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

Persons

Person responsible for general inquiries

Contact

Name of organization / entity

Hakim sabzevari university

Full name of responsible person

Zeynab Firozeh

Position

PHD student of exercise physiology

Latest degree

Master

Other areas of specialty/work

Physiology

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Person responsible for scientific inquiries

Contact

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Zeynab firozeh

Position

The Student of PHD

Latest degree

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Person responsible for updating data

Contact

Name of organization / entity

Hakim sabzevari university

Full name of responsible person

Zeynab Firozeh

Position

PHD student of exercise physiology

Latest degree
Master
Other areas of specialty/work
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Province
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9617976487
Phone
+98 51 4441 0104
Email
zfirozeh@yahoo.com

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
Not applicable
Title and more details about the data/document
All data is shared after being unidentified
When the data will become available and for how long
One year after the publication of the results
To whom data/document is available
All people who need this data
Under which criteria data/document could be used
Lake of Plagiarism
From where data/document is obtainable
Saeid Ramezani rsaeid92@gmail.com
What processes are involved for a request to access data/document
A week after sending a request to Gmail and an applicant's commitment to not use the data directly
Comments
The main concern of each researcher is the misuse of others by his research information. If this item is assured, all research information will be available.