Clinical Trial Protocol
Iranian Registry of Clinical Trials

09 Jun 2026

Effect of HIIT and intense resistance training on asprosin and CTRP1 levels in overweight and obese men

Protocol summary

Study aim
Determining the effect of HIIT and intense resistance training on asprosin and CTRP1 levels in overweight and obese men

Design
The current research will be conducted in the form of a semi-experimental design of three groups (HIIT training group, intense resistance training group and control group) with a pre-test-post-test design. Voluntary sampling method and division into three groups will be randomly assigned, 14 overweight and obese people will be placed in the HIIT group, 14 people will be in the intense resistance training group, and 14 people will be in the control group.

Settings and conduct
The intervention will be for 10 weeks and three sessions per week in experimental groups. Before and after 10 weeks, anthropometric and physiological measurements and blood samples will be taken from the subjects and will be analyzed statistically. Before starting the main training program, there will be a one-week familiarization period with the exercises. The location of the study will be one of the sports and fitness clubs in Sabzevar city

Participants/Inclusion and exclusion criteria
Healthy overweight and obese men between the ages of 30 and 50 can participate in the study. Athletes, sick men, and those outside the target age range and body mass index cannot participate in the study.

Intervention groups
1. Intense Interval Training (HIIT) group: This group performs intense interval training 2. Intense resistance training group: This group performs high intensity resistance training 3. The control group in the research goes about their daily life

Main outcome variables
Lose weight Decrease in body mass index Hormonal changes associated with obesity

General information

Reason for update

Acronym

IRCT registration information
IRCT registration number: **IRCT20230301057578N1**
Registration date: **2023-03-04, 1401/12/13**
Registration timing: **retrospective**

Last update: **2023-03-04, 1401/12/13**
Update count: **0**

Registration date
2023-03-04, 1401/12/13

Registrant information

Name
Mehdi Zarei

Name of organization / entity
The university of Neyshabur

Country
Iran (Islamic Republic of)

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+98 51 4330 5000

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Recruitment status
Recruitment complete

Funding source

Expected recruitment start date
2022-12-30, 1401/10/09

Expected recruitment end date
2023-01-06, 1401/10/16

Actual recruitment start date
2023-01-06, 1401/10/16

Actual recruitment end date
2023-01-09, 1401/10/19

Trial completion date
2023-04-08, 1402/01/19

Scientific title
Effect of HIIT and intense resistance training on asprosin and CTRP1 levels in overweight and obese men

Public title
Effect of interval and intense resistance training on asprosin and CTRP1 levels in overweight and obese men

Purpose
Prevention

Inclusion/Exclusion criteria

Inclusion criteria:
Body mass index above 25 kg/m2 Not having a physical injury and orthopedic problem Not having regular sports activity in the last six months No smoking and alcohol Not taking medicine Absence of cardiovascular diseases, diabetes, hypertension, liver disease, hypothyroidism

Exclusion criteria:

Age
From **30 years** old to **50 years** old

Gender
Male

Phase
N/A

Groups that have been masked
No information

Sample size
Target sample size: **42**
Actual sample size reached: **42**

Randomization (investigator's opinion)
Randomized

Randomization description
Simple random with code and lottery

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
University of Zabul (Research Ethics Committee)

Street address
Campus address 1: Zabul-km two Banjar road campus address

City
zabol

Province
Sistan-va-Balouchestan

Postal code
9861335856

Approval date
2023-02-24, 1401/12/05

Ethics committee reference number
IR.UOZ.REC.1401.013

Health conditions studied

1

Description of health condition studied
Overweight and obesity

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description
Asprosin

Timepoint
the beginning of the study and 48 hours after the end of the training period (in the fasting state)

Method of measurement
Blood sampling and checking of serum levels. ELISA kit will be used

2

Description
CTRP1

Timepoint
the beginning of the study and 48 hours after the end of the training period (in the fasting state)

Method of measurement
Blood sampling and checking of serum levels. ELISA kit will be used

Secondary outcomes

empty

Intervention groups

1

Description
Intervention group: Intermittent training program for 10 weeks with a frequency of 3 days a week, including 4-8 times of running 20-30 seconds at maximum speed (intensity above 90-85% of the reserve heart rate) and with active rest intervals for 90 seconds (including running In intensity, it will be 40-50% of reserve heart rate. In the first and second weeks, the subjects will have four 20-second repetitions, and in the third and fourth weeks, following the principle of overload, they will do six 25-second attempts with the same rest time between repetitions, and in the fifth to last week, 8 repetitions. They will do 30 seconds with 90 seconds rest between repetitions. The intensity of the exercises will be controlled using a polar heart rate monitor. Before starting the training protocol in each session, subjects will have a 5-minute warm-up program and at the end of

each training session, they will have a 5-minute cool-down program.

Category

Rehabilitation

2

Description

Intervention group: Subjects of the resistance training group performed leg press, chest press, back of thigh, front of thigh, forearm, back of arm, rowing and underarm pull-up with intensity of 80-85% of one maximum repetition in a circle 6-8 repetitions and 60 - 30 seconds of rest between each movement and 120 seconds of rest between each round of circles. In the first and second week, the number of three rounds and one round will be added every two weeks until it reaches six rounds in the eighth week. Before starting the training in each session, a warm-up program (10 minutes) and a cooling program (5 minutes) will be done at the end of each session.

Category

Rehabilitation

3

Description

Control group: This group does not do sports. Only basic measurements such as measuring anthropometric characteristics and blood sampling will be done.

Category

Other

Recruitment centers

1

Recruitment center

Name of recruitment center
Behnoud Fitness Sports Club
Full name of responsible person
Abas mohamadi
Street address
Siyadati, Siyadati 1
City
Sabzevar
Province
Razavi Khorasan
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9616649991
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Arashmohamadi231@yahoo.com

Sponsors / Funding sources

1

Sponsor

Name of organization / entity
university of neyshabur
Full name of responsible person
Mehdi zarei
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Fax
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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

university of neyshabur

Proportion provided by this source

50

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
University of Neyshabur
Full name of responsible person
Mehdi zarei
Position
1. Assistant professor, Department of Physical Education and Sport Sciences
Latest degree
Ph.D.
Other areas of specialty/work
Physiology
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Person responsible for scientific inquiries

Contact

Name of organization / entity
The University of Neyshabur

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Mehdi zarei

Position
Assistant professor

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Other areas of specialty/work
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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
Undecided - It is not yet known if there will be a plan to make this available

Informed Consent Form
Undecided - It is not yet known if there will be a plan to make this available

Clinical Study Report
Undecided - It is not yet known if there will be a plan to make this available

Analytic Code
Undecided - It is not yet known if there will be a plan to make this available

Data Dictionary
Undecided - It is not yet known if there will be a plan to make this available