Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 2026

The effect of endurance, resistance and combined training (resistance-endurance) on the levels of Pentraxin 3, Galectin 3 and some inflammatory mediators in obese women

Protocol summary

Study aim
The effect of endurance, resistance and combination training on the levels of Pentraxin 3, Galactin 3 and some inflammatory mediators in obese women

Design
The study is a randomized, factorial clinical trial. The target population is 48 obese women who are divided into three training groups and a control group. 30 minutes of endurance training with 60% heart rate on the treadmill. Resistance training with intensity of 10 RM and Includes leg presses, forefoot, flat foot, chest press and paddling for 30 minutes. Combined training includes 15 minutes of endurance training and 15 minutes of resistance training.

Settings and conduct
Subjects attend the Top Technique Gymnasium on individual days of the week from 9 to 10 am, and after warming up for 30 minutes, perform their own exercises under the supervision of the relevant instructor, and after cooling off, the session ends. On the first day of fasting, a blood sample is taken before the start of training and 48 hours after the last training session, a blood sample is taken.

Participants/Inclusion and exclusion criteria
Obese women between the ages of 20 and 35 who wish to participate in this study. Do not participate in regular exercise for the past year. Have no history of heart disease or diabetes. Do not use drugs or alcohol. General physical and mental health.

Intervention groups
After filling out the consent form, the subjects are divided into four groups of 12 people. The first group: endurance training, the second group: resistance training, the third group: the combined training, the fourth group: control. Except for the control group, each group undergoes exercise for 12 weeks and 3 sessions per week.

Main outcome variables
Pentraxin 3,Galactin3,Tumor necrosis factor-a (TNF-a) ,Serum Amyloid A (SAA)

General information

Reason for update
Acronym
IRCT registration information
IRCT registration number: **IRCT20210626051720N1**
Registration date: **2021-07-11, 1400/04/20**
Registration timing: **registered_while_recruiting**

Last update: **2021-07-11, 1400/04/20**
Update count: **0**

Registration date
2021-07-11, 1400/04/20

Registrant information

Name
Mahrokh Kooti

Name of organization / entity
The University of Tehran

Country
Iran (Islamic Republic of)

Phone
+98 21 2244 1378

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kooti.mahrokh@gmail.com

Recruitment status
Recruitment complete

Funding source

Expected recruitment start date
2021-07-01, 1400/04/10

Expected recruitment end date
2021-08-06, 1400/05/15

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

The effect of endurance, resistance and combined training (resistance-endurance) on the levels of Pentraxin 3, Galectin 3 and some inflammatory mediators in obese women

Public title

The effect of endurance, resistance and combination training on some inflammatory mediators in obese women

Purpose

Prevention

Inclusion/Exclusion criteria

Inclusion criteria:

Overweight women with a body mass index above 30 No history of regular physical activity in the past year Having a general level of physical and mental health

Exclusion criteria:

Having type 2 diabetes Cardiovascular diseases Drug or alcohol addiction

Age

From **20 years** old to **35 years** old

Gender

Female

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **48**

Randomization (investigator's opinion)

Randomized

Randomization description

Using the lottery method The names of the subjects are written on 40 separate pieces of paper and placed in a container. The names of the subjects are then randomly extracted and placed in the intervention or placebo group. The first 30 names are in the intervention group and the rest are in the placebo group.

Blinding (investigator's opinion)

Not blinded

Blinding description

Placebo

Not used

Assignment

Factorial

Other design features

This study is a randomized factorial clinical trial. The target population includes 48 obese women in Tehran. People will be divided into four groups of 12 people.

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Ethics Committee of the Faculty of Physical Education and Sports Sciences, University of Tehran

Street address

Thirteenth floor, Block A, Central headquarters of the Ministry of Health, Qads town

City

Tehran

Province

Tehran

Postal code

3144685543

Approval date

2021-03-14, 1399/12/24

Ethics committee reference number

IR.UT.SPORT.REC.1400.006

Health conditions studied

1

Description of health condition studied

Overweight and obesity

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description

Pentraxine 3

Timepoint

First, the end of the study

Method of measurement

Kit Eliza

2

Description

Galactin 3

Timepoint

First, the end of the study

Method of measurement

Kit Eliza

3

Description

Tumor necrosis factor-a (TNF-a)

Timepoint

First, the end of the study

Method of measurement

Kit Eliza

4

Description
Serum Amyloid A (SAA)
Timepoint
First, the end of the study
Method of measurement
Kit Eliza

Secondary outcomes

1

Description
Insulin
Timepoint
First, the end of the study
Method of measurement
Insulin Eliza Kit

2

Description
Glucose
Timepoint
First, the end of the study
Method of measurement
Glucose Assessment Kit

Intervention groups

1

Description
Control group: 12 obese women without regular exercise
Category
Prevention

2

Description
Intervention group: Endurance exercise (performed by 12 obese women for 12 weeks and 3 sessions per week, 30 minutes on a treadmill with 60% heart rate) is performed before and after exercise for 15 minutes, warming up and cooling down, respectively.
Category
Prevention

3

Description
Intervention group: Resistance training (will be performed by 12 obese women for 12 weeks and 3 sessions per week. Each resistance training session will be about 30 minutes, which will include four sets with 8-12 repetitions and 10RM intensity, which includes leg presses, forward leg movements, Sit on the back of the foot, chest press and paddle.) Warm up and cool down for 15 minutes before and after exercise, respectively.10RM is approximately equal to 75% of 1RM.
Category
Prevention

4

Description
Intervention group: Combined exercise (endurance-resistance) :(will be performed by 12 obese women for 12 weeks and 3 sessions per week. The combined exercise program in each session will include 15 minutes of aerobic exercise and 15 minutes of resistance exercise (two sets for each movement) .) Warm up and cool down for 15 minutes before and after training, respectively.
Category
Prevention

Recruitment centers

1

Recruitment center
Name of recruitment center
Medical University Tehran
Full name of responsible person
Kooti Mahrokh
Street address
Medical School,Poursina St, Enghelab St.
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Sponsors / Funding sources

1

Sponsor
Name of organization / entity
University of Tehran
Full name of responsible person
Rahimian Mohammad
Street address
In front of the university dormitory, Amirabad, Kargarshamali street
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1417935840
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rahimian@ut.ac.ir
Grant name
Grant code / Reference number
Is the source of funding the same sponsor

organization/entity?
Yes
Title of funding source
University of Tehran
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
The University of Tehran
Full name of responsible person
Kooti Mahrokh
Position
Student
Latest degree
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Other areas of specialty/work
Physiology
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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
Not applicable