

# Clinical Trial Protocol

## Iranian Registry of Clinical Trials

13 Jun 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, Galactin 3, Tumor necrosis factor- $\alpha$  (TNF- $\alpha$ ), 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

##### Email address

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.

#### **City**

Tehran

#### **Province**

Tehran

#### **Postal code**

1411763151

#### **Phone**

+98 21 8889 6696

#### **Email**

kooti.mahrokh@gmail.com

## **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

#### **City**

Tehran

#### **Province**

Tehran

#### **Postal code**

1417935840

#### **Phone**

+98 21 8835 1730

#### **Email**

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**

Ph.D.

**Other areas of specialty/work**

Physiology

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No. 14, Behesh Asa alley, Shariati, Mirdamad

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**Person responsible for scientific inquiries****Contact****Name of organization / entity**

The University of Tehran

**Full name of responsible person**

Soori Rahman

**Position**

Assistant Professor

**Latest degree**

Ph.D.

**Other areas of specialty/work**

Physiology

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**Person responsible for updating data****Contact****Name of organization / entity**

The University of Tehran

**Full name of responsible person**

Kooti Mahrokh

**Position**

Student

**Latest degree**

Ph.D.

**Other areas of specialty/work**

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**Email**

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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