

# Clinical Trial Protocol

## Iranian Registry of Clinical Trials

10 Jun 2026

### Effect of twelve weeks combined exercise (aerobic- resistance) on plasma levels of Ghrelin and Obestatin in obese adolescens

#### Protocol summary

##### Summary

The aim of this study is assessing effect of 12 weeks combined exercise (Aerobic-resistance) on plasma levels of ghrelin and obestatin in obese adolescents. This study is a semi experimental one. Thirty obese adolescents are willing to cooperate voluntarily; they will be randomly divided in two groups: experimental group and control group. Then, the experimental group will receive combined exercise program (aerobic training consisted of running on a treadmill for 20 minutes at 60-70% of maximal oxygen consumption (VO<sub>2</sub>max) and (intensity resistance training 70% of one repetition maximum (1RM) for 2 sets of 10 repetitions per movement) for 12 weeks (three sessions per week). The control group will receive no intervention but will follow. Variables including weight, body fat percentage, BMI, VO<sub>2</sub>max will be measured in both groups before and after exercises. Blood samples will be collected in two stages, 48 hours before and after exercise to measure of plasma levels of ghrelin and obestatin.

#### General information

##### Acronym

##### IRCT registration information

IRCT registration number: **IRCT2016012926251N1**

Registration date: **2016-05-06, 1395/02/17**

Registration timing: **retrospective**

Last update:

Update count: **0**

##### Registration date

2016-05-06, 1395/02/17

##### Registrant information

###### Name

Iman Zakavi

###### Name of organization / entity

Abadan Medical Sciences School

###### Country

Iran (Islamic Republic of)

###### Phone

+98 916 814 3051

###### Email address

zakavi.i@ajums.ac.ir

###### Recruitment status

**Recruitment complete**

###### Funding source

Abadan University of Medical Sciences

###### Expected recruitment start date

2016-03-15, 1394/12/25

###### Expected recruitment end date

2016-04-18, 1395/01/30

###### Actual recruitment start date

empty

###### Actual recruitment end date

empty

###### Trial completion date

empty

###### Scientific title

Effect of twelve weeks combined exercise (aerobic-resistance) on plasma levels of Ghrelin and Obestatin in obese adolescens

###### Public title

Effect of combined exercise on appetite hormones in obese adolescens

###### Purpose

Treatment

###### Inclusion/Exclusion criteria

Inclusion criteria: all male students in middle and high schools in Baghmalek City; body mass index (BMI) higher than 30; male gender; Lack of any disease; Non smoking and drugs; Parental consent and sign a written consent. Exclusion criteria: The absence of more than three days in training; Subjects who had a history of the sport and disease as well as Subjects who use a weight loss

method.

### Age

From **12 years** old to **16 years** old

### Gender

Male

### Phase

N/A

### Groups that have been masked

*No information*

### Sample size

Target sample size: **30**

### Randomization (investigator's opinion)

Randomized

### Randomization description

### 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

Ethics committee of Abadan University of Medical Sciences

##### Street address

Ethics committee of Abadan University of Medical Sciences, Vice chancellor for research, Opposite International Airport Jami Abadan, Flying field, Abadan City, Khuzestan.

##### City

Abadan

##### Postal code

#### Approval date

2015-12-22, 1394/10/01

#### Ethics committee reference number

IR.ABADANUMS.REC.1394.47

## Health conditions studied

### 1

#### Description of health condition studied

Obesity

#### ICD-10 code

E66

#### ICD-10 code description

Obesity

## Primary outcomes

### 1

#### Description

Ghrelin

#### Timepoint

Before intervention, 3 months after intervention

#### Method of measurement

ng/ml- ELISA method

### 2

#### Description

Obestatin

#### Timepoint

Before intervention, 3 months after intervention

#### Method of measurement

ng/ml-ELISA method

## Secondary outcomes

### 1

#### Description

Weight

#### Timepoint

Before intervention, 3 months after intervention

#### Method of measurement

kg, In body Device

### 2

#### Description

Body Mass Index

#### Timepoint

Before intervention, 3 months after intervention

#### Method of measurement

kg/m<sup>2</sup>-In Body device

### 3

#### Description

fat percentage

#### Timepoint

Before intervention, 3 months after intervention

#### Method of measurement

% Percentage, In Body Device

### 4

#### Description

Waist -to-Hip Ratio

#### Timepoint

Before intervention, 3 months after intervention

#### Method of measurement

cm, Meter

### 5

#### Description

Maximal Oxygen Consumption

#### Timepoint

Before intervention, 3 months after intervention

**Method of measurement**

ml/kg/min---By Rockport 1-mile walk test

**Intervention groups**

**1**

**Description**

Intervention group: Combined exercise program (aerobic training consisted of running on a treadmill for 20 minutes at 60-70% of maximal oxygen consumption (VO2max) and (intensity resistance training 70% of one repetition maximum (1RM) for 2 sets of 10 repetitions per movement) for 12 weeks (three sessions per week)

**Category**

Other

**2**

**Description**

Control group: Participate in daily activities

**Category**

Other

**Recruitment centers**

**1**

**Recruitment center**

**Name of recruitment center**

Shahid Tabatabai Hospital

**Full name of responsible person**

Amin Delavari

**Street address**

Shahid Tabatabai Hospital, Ghale Kamisi St.,  
Baghmalek City, Kouzestan

**City**

Baghmalek

**2**

**Recruitment center**

**Name of recruitment center**

Abadan University of Medical Sciences

**Full name of responsible person**

DR Mohamad Mahboobi

**Street address**

Vice chancellor for research, Abadan University of  
Medical Sciences, Opposite International Airport Jami  
Abadan, Flying field, Abadan City, Khouzestan

**City**

Baghmalek

**Sponsors / Funding sources**

**1**

**Sponsor**

**Name of organization / entity**

Vice Chancellor for research of Abadan University of  
Medical Sciences

**Full name of responsible person**

Dr. Mohamad Mahboobi

**Street address**

Vice chancellor for research, Abadan University of  
Medical Sciences, Opposite International Airport Jami  
Abadan, Flying field, Abadan city, Khouzestan, Iran

**City**

Abadan

**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 of Abadan University of  
Medical Sciences

**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**

Abadan University of Medical Sciences

**Full name of responsible person**

Iman Zakavi

**Position**

Masters/Corresponding author

**Other areas of specialty/work**

**Street address**

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Iman Zakavi

**Position**

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

Abadan University of Medical Sciences

**Full name of responsible person**

Iman Zakavi

**Position**

Masters/Corresponding author

**Other areas of specialty/work****Street address**

Abadan University of Medical Sciences, Opposite

**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*