

# Clinical Trial Protocol

## Iranian Registry of Clinical Trials

04 Jul 2026

### Comparison of the acute response of some inflammatory markers to circular resistance training in fasting in the morning and evening in obese men

#### Protocol summary

##### Study aim

Comparison of the acute response of some inflammatory markers to circular resistance training in fasting in the morning and evening in obese men

##### Design

Clinical trial with cross over plan, Pragmatic, Randomised,

##### Settings and conduct

This study will be conducted to evaluate the comparison of the acute response of some inflammatory markers to circular resistance training in fasting in the morning and evening in obese men in the University sports complex in Sabzevar. Obese people will receive circular resistance training in the morning and in the evening with cross over plan. The response to treatment is evaluated using Luminescence quantitative and ELISA methods for the study groups.

##### Participants/Inclusion and exclusion criteria

Inclusion Criteria: Obese, age range, no taking the drug and tobacco, Lack of diabetes, heart and respiratory diseases, musculoskeletal, and metabolic disorders limiting exercise, Lack of high blood pressure, Lack of regular exercise activity in the last 6 months. Exclusion Criteria: Inability to perform exercises, Having regular sports activities rather than research exercises.

##### Intervention groups

Subjects will perform 6 movements: chest press, half squat stretch, front arm, armpit, back thigh and back opening in 4 sets with 12 max repetitions and 60% intensity of one max rep. Between each set of 1 minute and 2 minutes of rest each movement is considered. The Subjects in fasting condition (10 to 12 hours) will perform a resistance training session in the morning (8 AM) and after a 2-week rest, will perform the same resistance training session with the same conditions in the evening (5 PM). In order to measure the biochemical variables, the blood sampling process is performed before,

immediately and 2 hours after circular resistance training.

##### Main outcome variables

Determine the levels of CRP, TNF- $\alpha$  and IL-6

#### General information

##### Reason for update

##### Acronym

##### IRCT registration information

IRCT registration number: **IRCT20191228045918N1**

Registration date: **2020-02-15, 1398/11/26**

Registration timing: **retrospective**

Last update: **2020-02-15, 1398/11/26**

Update count: **0**

##### Registration date

2020-02-15, 1398/11/26

##### Registrant information

##### Name

Seyed Mehdi Beheshti Nasr

##### Name of organization / entity

##### Country

Iran (Islamic Republic of)

##### Phone

+98 51 4401 1378

##### Email address

beheshti.m1985@gmail.com

##### Recruitment status

**Recruitment complete**

##### Funding source

##### Expected recruitment start date

2015-04-21, 1394/02/01

##### Expected recruitment end date

2015-08-11, 1394/05/20

##### Actual recruitment start date

2015-04-21, 1394/02/01  
**Actual recruitment end date**

2015-08-11, 1394/05/20

**Trial completion date**

2015-08-11, 1394/05/20

**Scientific title**

Comparison of the acute response of some inflammatory markers to circular resistance training in fasting in the morning and evening in obese men

**Public title**

Comparison of the acute response of inflammatory markers to circular resistance training in the morning and evening in obese men

**Purpose**

Treatment

**Inclusion/Exclusion criteria**

**Inclusion criteria:**

Obese men Non-athlete No taking the drug and tobacco  
Lack of heart and respiratory diseases, Lack of diabetes  
Lack of musculoskeletal Age range between 20-30 years

**Exclusion criteria:**

Inability to perform exercises Having regular sports activities rather than research exercises

**Age**

From **20 years** old to **30 years** old

**Gender**

Male

**Phase**

N/A

**Groups that have been masked**

*No information*

**Sample size**

Target sample size: **20**

Actual sample size reached: **15**

**Randomization (investigator's opinion)**

N/A

**Randomization description**

**Blinding (investigator's opinion)**

Not blinded

**Blinding description**

**Placebo**

Not used

**Assignment**

Crossover

**Other design features**

**Secondary Ids**

empty

**Ethics committees**

1

**Ethics committee**

**Name of ethics committee**

Ethics committee of Sabzevar University of Medical Sciences

**Street address**

Sabzevar University of Medical Sciences, Tohid Blvd,

Sabzevar city

**City**

Sabzevar

**Province**

Razavi Khorasan

**Postal code**

9617913114

**Approval date**

2014-01-15, 1392/10/25

**Ethics committee reference number**

MEDSAB.REC.1392.35

**Health conditions studied**

1

**Description of health condition studied**

Comparison of the acute response of some inflammatory markers to circular resistance training in the morning and evening

**ICD-10 code**

**ICD-10 code description**

**Primary outcomes**

1

**Description**

Determine the levels of CRP

**Timepoint**

before, immediately and 2 hours after circular resistance training

**Method of measurement**

Use of Luminescence quantitative and ELISA methods

2

**Description**

Determine the levels of TNF- $\alpha$

**Timepoint**

before, immediately and 2 hours after circular resistance training

**Method of measurement**

Use of Luminescence quantitative and ELISA methods

3

**Description**

Determine the levels of IL-6

**Timepoint**

before, immediately and 2 hours after circular resistance training

**Method of measurement**

Use of Luminescence quantitative and ELISA methods

**Secondary outcomes**

empty

**Intervention groups**

## 1

### Description

Intervention group: Subjects will perform 6 movements: chest press, half squat stretch, front arm, armpit, back thigh and back opening in 4 sets with 12 max repetitions and 60% intensity of one max rep. Between each set of 1 minute and 2 minutes of rest each movement is considered. The Subjects in fasting condition (10 to 12 hours) will perform a resistance training session in the morning (8 AM). In order to measure the biochemical variables, the blood sampling process is performed before, immediately and 2 hours after resistance exercise.

### Category

Treatment - Other

## 2

### Description

Intervention group: After a two-week rest, subjects in fasting condition (10 to 12 hours) will perform a resistance training session in the evening(5 PM), similar to the morning shift conditions. In order to measure the biochemical variables, the blood sampling process is performed before, immediately and 2 hours after resistance exercise.

### Category

Treatment - Other

## Recruitment centers

### 1

#### Recruitment center

##### Name of recruitment center

sports complex of Sabzevar University of Medical Sciences

##### Full name of responsible person

Dr. Seyed Mehdi Beheshti Nasr

##### Street address

Sabzevar University of Medical Sciences, Tohid Blvd., Sabzevar Town

##### City

Sabzevar

##### Province

Razavi Khorasan

##### Postal code

9617913114

##### Phone

+98 51 4401 1604

##### Email

beheshti.m1985@gmail.com

## Sponsors / Funding sources

### 1

#### Sponsor

##### Name of organization / entity

Sabzevar University of Medical Sciences

##### Full name of responsible person

Dr. Fereshte Ghorat

##### Street address

Sabzevar University of Medical Sciences, Tohid Blvd., Sabzevar Town

##### City

Sabzevar

##### Province

Razavi Khorasan

##### Postal code

9617913114

##### Phone

+98 51 4401 8319

##### Email

Drghorat@gmail.com

##### Grant name

##### Grant code / Reference number

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

No

##### Title of funding source

Sabzevar University of Medical Sciences

##### 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

Sabzevar University of Medical Sciences

##### Full name of responsible person

Seyed Mehdi Beheshti Nasr

##### Position

Assistant Professor

##### Latest degree

Ph.D.

##### Other areas of specialty/work

Physiology

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## Person responsible for scientific inquiries

### Contact

**Name of organization / entity**

Sabzevar University of Medical Sciences

**Full name of responsible person**

Seyed Mehdi Beheshti Nasr

**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**

Sabzevar University of Medical Sciences

**Full name of responsible person**

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**Position**

Assistant Professor

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## Sharing plan

**Deidentified Individual Participant Data Set (IPD)**

No - There is not a plan to make this available

**Justification/reason for indecision/not sharing IPD**

No more information

**Study Protocol**

No - There is not a plan to make this available

**Statistical Analysis Plan**

Not applicable

**Informed Consent Form**

No - There is not a plan to make this available

**Clinical Study Report**

No - There is not a plan to make this available

**Analytic Code**

No - There is not a plan to make this available

**Data Dictionary**

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