Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 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-α 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-α

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

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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

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

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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
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Person responsible for updating data

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Latest degree
Ph.D.

Other areas of specialty/work
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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