Clinical Trial Protocol
Iranian Registry of Clinical Trials

23 Jun 2026

The Effect of 12 weeks interval resistance training with different intensity on inflammatory and proinflammatory markers in obese men

Protocol summary

Study aim

12 weeks of Interval Resistance Training with different intensities affects the levels of some selected adipokines in obese men.

Design

The present study is a quasi-experimental and applied method with a pre-test-post-test design with a control group. The samples will be divided into 4 groups based on demographic characteristics: control group (11 people), intervention group 1 (11 people), intervention 2 (11 people) and intervention 3 (11 people).

Settings and conduct

Two days before the start of the intervention period, initial assessments including anthropometric indices (height and weight and body mass index) of each subject will be measured in the gym. Resistance training protocol at different intensities in 12 weeks, 3 sessions per week, Each session will last 70 minutes. 48 hours before the start of the training program and 48 hours after the end of the last training session, all participants will fast for 12 hours to take a pre-test blood sample from the right arm artery. 10 cc will be collected.

Participants/Inclusion and exclusion criteria

Entry requirements: Body mass index = 30 No addiction to drugs and alcohol No history of regular exercise for at least 6 months No history of kidney, liver, cardiovascular disease, diabetes

Intervention groups

Intervention group 1: High intensity resistance circular training: 3 sets of 10 repetitions with 80% of a maximum repetition Intervention group 2: Circular resistance training with moderate intensity: 3 sets of 13 repetitions with 60% of a maximum repetition Intervention group 3: Low intensity resistance resistance training: 3 sets of 20 repetitions with 40% of a maximum repetition control group.

Main outcome variables

Toll Like Receptor4 (TLR4), Toll Like Receptor4(TLR2) , Interleukin 10(IL-10), Interleukin 1 beta(IL-1beta), Dectin-1

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20211123053155N1**
Registration date: **2021-12-01, 1400/09/10**
Registration timing: **prospective**

Last update: **2021-12-01, 1400/09/10**
Update count: **0**

Registration date

2021-12-01, 1400/09/10

Registrant information

Name
Nader Najafi
Name of organization / entity
The University of Mohaghegh Ardabili
Country
Iran (Islamic Republic of)
Phone
+98 41 4333 3132
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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2021-12-22, 1400/10/01

Expected recruitment end date

2022-03-19, 1400/12/28

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date
empty

Scientific title
The Effect of 12 weeks interval resistance training with different intensity on inflammatory and proinflammatory markers in obese men

Public title
Evaluation of The Effect ofResistance Training in obese people

Purpose
Prevention

Inclusion/Exclusion criteria

Inclusion criteria:
Body mass index = 30 No addiction to drugs and alcohol No history of regular exercise for at least 6 months No history of kidney, liver, cardiovascular disease, diabetes

Exclusion criteria:

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: **50**

Randomization (investigator's opinion)
Not randomized

Randomization description

Blinding (investigator's opinion)
Not blinded

Blinding description

Placebo
Not used

Assignment
Other

Other design features
Group 1: High-intensity resistance training Group II: Medium-intensity resistance training Group 3: Low-intensity resistance training Group 4: Control

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee
Ethics Committee of Mohaghegh Ardabili University

Street address
Mohaghegh Ardabil University, End of University Street

City
Ardabil

Province
Ardabil

Postal code
5619913131

Approval date
2021-11-06, 1400/08/15

Ethics committee reference number
IR.UMA.REC.1400.025

Health conditions studied

1

Description of health condition studied
Obesity

ICD-10 code
E66

ICD-10 code description
Overweight and obesity

Primary outcomes

1

Description
Dectin-1

Timepoint
48 hours before and 48 hours after training intervention

Method of measurement
Equipment needed: Date disposable syringe, standard garo or tourniquet, test tube containing anticoagulant (EDTA), sterile cotton, 75% ethanol alcohol, Company ELISA kit (American) using ELISA device

2

Description
IL-10

Timepoint
48 hours before and 48 hours after training intervention

Method of measurement
Equipment needed: Date disposable syringe, standard garo or tourniquet, test tube containing anticoagulant (EDTA), sterile cotton, 75% ethanol alcohol, Company ELISA kit (Czech Republic) using ELISA device

3

Description
IL-1 beta

Timepoint
48 hours before and 48 hours after training intervention

Method of measurement
Equipment needed: Date disposable syringe, standard garo or tourniquet, test tube containing anticoagulant (EDTA), sterile cotton, 75% ethanol alcohol, Company ELISA kit (American) using ELISA device

4

Description
TRL2

Timepoint
48 hours before and 48 hours after training intervention

Method of measurement
Equipment needed: Date disposable syringe, standard garo or tourniquet, test tube containing anticoagulant (EDTA), sterile cotton, 75% ethanol alcohol, Company ELISA kit (American) using ELISA device

5

Description
TLR 4
Timepoint
48 hours before and 48 hours after training intervention
Method of measurement
Equipment needed: Date disposable syringe, standard garo or tourniquet, test tube containing anticoagulant (EDTA), sterile cotton, 75% ethanol alcohol, Company ELISA kit (American) using ELISA device

Secondary outcomes

empty

Intervention groups

1

Description
Intervention group 1: High intensity slow training group: 3 sets of 10 repetitions with 80% of a maximum repetition. 12 weeks, 3 days a week, each session 70 minutes
Category
Prevention

2

Description
Intervention group 2: Medium intensity circular exercise group: 3 sets of 13 repetitions with 60% of a maximum repetition of 12 weeks, 3 days a week, each session 70 minutes
Category
Prevention

3

Description
Intervention group 3: Low intensity circular exercise group: 3 sets of 20 repetitions with 40% of a maximum repetition of 12 weeks, 3 days a week, each session 70 minutes
Category
Prevention

4

Description
Control group: No physical activity
Category
N/A

Recruitment centers

1

Recruitment center
Name of recruitment center
Mohaghegh Ardabil University
Full name of responsible person
Nader Najafi
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Sponsors / Funding sources

1

Sponsor
Name of organization / entity
The University of Mohaghegh Ardabil
Full name of responsible person
Davood Seifzadeh
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Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
Yes
Title of funding source
The University of Mohaghegh Ardabil
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 Mohaghegh Ardabili
Full name of responsible person
Nader Najafi
Position
PhD student
Latest degree
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Other areas of specialty/work
Sport physiology
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Person responsible for updating data

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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
There is no more information.
Study Protocol
Yes - There is a plan to make this available
Statistical Analysis Plan
Not applicable
Informed Consent Form
Yes - There is a plan to make this available
Clinical Study Report
Not applicable
Analytic Code
Not applicable
Data Dictionary
Not applicable
Title and more details about the data/document
The program protocol and informed consent are easily accessible to individuals
When the data will become available and for how long
After completing the research and publishing articles
To whom data/document is available
Academics and sports coaches
Under which criteria data/document could be used
According to the articles of this research, the use of training protocol is allowed.
From where data/document is obtainable
Email: najafinader22@gmail.com
What processes are involved for a request to access data/document
Please email and explain what research they need. Data is provided to them in a minimum of time.
Comments