

Clinical Trial Protocol

Iranian Registry of Clinical Trials

16 Sep 2026

The effect of moderate and high intensity resistance training on muscle damage, inflammatory and antioxidant response in non-athletic male students

Protocol summary

Study aim

the effect of two moderate and high resistance exercise intensities on muscle damage indicator, inflammation response and antioxidant system in non-athlete male students

Design

One group will complete resistance training with two moderate and high intensity exercises in two weeks interval

Settings and conduct

All subjects will be present in the sports hall of the Sarab Islamic university and will complete two resistance training with two weeks intervals separately. In each step, fasting blood samples were taken before, immediately, 2 hour, 24 hour, 48 hour and 72 hour after two moderate and high intensities resistance exercise

Participants/Inclusion and exclusion criteria

Entry and exit criteria in the research included: age, Do not use caffeine, alcohol, tobacco, tobacco and antioxidant supplements and not having any history of any diseases affecting hematologic factors such as high muscle damage and anti-inflammatory drugs

Intervention groups

resistance training with two moderate and high intensities

Main outcome variables

Prevent from muscle damage, , inflammatory and antioxidant response in non-athletic male students

General information

Reason for update

Acronym

ندارد

IRCT registration information

IRCT registration number: **IRCT20181114041655N1**

Registration date: **2018-12-06, 1397/09/15**

Registration timing: **registered_while_recruiting**

Last update: **2018-12-06, 1397/09/15**

Update count: **0**

Registration date

2018-12-06, 1397/09/15

Registrant information

Name

Ameneh Pourrahim Ghouroghchi

Name of organization / entity

Mohaghegh-e-Ardabili University

Country

Iran (Islamic Republic of)

Phone

+98 45 3150 5647

Email address

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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2018-10-07, 1397/07/15

Expected recruitment end date

2018-10-22, 1397/07/30

Actual recruitment start date

2018-12-03, 1397/09/12

Actual recruitment end date

2018-12-16, 1397/09/25

Trial completion date

2018-12-16, 1397/09/25

Scientific title

The effect of moderate and high intensity resistance training on muscle damage, inflammatory and antioxidant response in non-athletic male students

Public title

The effect of resistance training intensity some blood parameters in non-athletic men

Purpose
Prevention

Inclusion/Exclusion criteria
Inclusion criteria:
Aged 22-20 years old, Do not use caffeine, alcohol, tobacco, and antioxidant supplements
Exclusion criteria:
History of any disease affecting hematologic factors like High muscle damage and the use of anti-inflammatory drugs

Age
From **20 years** old to **22 years** old

Gender
Male

Phase
N/A

Groups that have been masked
No information

Sample size
Target sample size: **20**
More than 1 sample in each individual
Number of samples in each individual: **12**
before and after each exercise 6 times
Actual sample size reached: **19**
More than 1 sample in each individual
Actual sample size in each individual: **12**
before and after each exercise 6 times

Randomization (investigator's opinion)
N/A

Randomization description

Blinding (investigator's opinion)
Not blinded

Blinding description

Placebo
Not used

Assignment
Single

Other design features
The effect of moderate and high intensity resistance training on muscle damage, inflammatory and antioxidant response in non-athletic male students

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Ethics committee of Ardabil University of Medical Sciences

Street address

Ardabil- University Blvd- Ardabil University of Medical Sciences- Research Deputy

City

Ardabil

Province

Ardabil
Postal code
5618953141
Approval date
2018-11-13, 1397/08/22
Ethics committee reference number
IR.ARUMS.REC.1397.124

Health conditions studied

1

Description of health condition studied

Moderate intensity of resistance training

ICD-10 code

ICD-10 code description

2

Description of health condition studied

High intensity of resistance training

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description

Craetine Kinase Enzyme after resistance training with moderate intensity 60 percent of One Maximum Repetition

Timepoint

6 times, before, immediately, 2 hour, 24 hour, 48 hour and 72 hour after exercise 60 percent of One Maximum Repetition

Method of measurement

The creatine kinase (CK) enzyme was measured by using an enzymatic (serum autoanalyzer) CPK kit and by the TEKNOKIN RA1000 machine 60 percent of One Maximum Repetition.

2

Description

Total leukocytes after resistance training with moderate intensity 60 percent of One Maximum Repetition

Timepoint

6 times, before, immediately, 2 hour, 24 hour, 48 hour and 72 hour after exercise 60 percent of One Maximum Repetition

Method of measurement

The number of leukocytes was measured by using CBC-MAC cell counter (KX-21) after resistance training with moderate intensity 60 percent of One Maximum Repetition.

3

Description

Uric acid after resistance training with high intensity 60 percent of One Maximum Repetition

Timepoint

6 times, before, immediately, 2 hour, 24 hour, 48 hour and 72 hour after exercise 60 percent of One Maximum Repetition

Method of measurement

Uric acid was measured by using autoanalyzer N.M.C.I)) after resistance training with moderate intensity 60 percent of One Maximum Repetition.

4**Description**

Craetine Kinase Enzyme after resistance training with moderate intensity 85 percent of One Maximum Repetition

Timepoint

6 times, before, immediately, 2 hour, 24 hour, 48 hour and 72 hour after exercise 85 percent of One Maximum Repetition

Method of measurement

The creatine kinase (CK) enzyme was measured by using an enzymatic (serum autoanalyzer) CPK kit and by the TEKNOKIN RA1000 machine 85 percent of One Maximum Repetition.

5**Description**

Total leukocytes after resistance training with moderate intensity 85 percent of One Maximum Repetition

Timepoint

6 times, before, immediately, 2 hour, 24 hour, 48 hour and 72 hour after exercise 85 percent of One Maximum Repetition

Method of measurement

The number of leukocytes was measured by using CBC-MAC cell counter (KX-21) after resistance training with moderate intensity 85 percent of One Maximum Repetition.

6**Description**

Uric acid after resistance training with high intensity 85 percent of One Maximum Repetition

Timepoint

6 times, before, immediately, 2 hour, 24 hour, 48 hour and 72 hour after exercise 85 percent of One Maximum Repetition

Method of measurement

Uric acid was measured by using autoanalyzer N.M.C.I)) after resistance training with moderate intensity 85 percent of One Maximum Repetition.

Secondary outcomes**1****Description**

Craetine Kinase Enzyme

Timepoint

before, immediately, 2 hour, 24 hour, 48 hour and 72 hour after each exercise

Method of measurement

The creatine kinase (CK) enzyme was measured by using an enzymatic (serum autoanalyzer) CPK kit and by the TEKNOKIN RA1000 machine.

2**Description**

total leucocytes

Timepoint

before, immediately, 2 hour, 24 hour, 48 hour and 72 hour after each exercise

Method of measurement

The number of leukocytes was measured by using CBC-MAC cell counter (KX-21).

3**Description**

uric acid rate

Timepoint

before, immediately, 2 hour, 24 hour, 48 hour and 72 hour after each exercise

Method of measurement

The amount of uric acid in the blood was measured by the N.M.C.I. autoimmune device.

Intervention groups**1****Description**

Intervention group: First intervention group resistance training with moderate intensity

Category

N/A

2**Description**

Intervention group: Second intervention group resistance training with high intensity

Category

N/A

Recruitment centers**1****Recruitment center****Name of recruitment center**

University of Mohaghegh-e-Ardabili

Full name of responsible person

Ameneh Pourrahim Ghouroughchi

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity
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Full name of responsible person
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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
University of Mohaghegh Ardabili
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
Mohaghegh University
Full name of responsible person
Azim Omidvar
Position
Research expert
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Other areas of specialty/work
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Person responsible for updating data

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Sharing plan

Deidentified Individual Participant Data Set (IPD)

Yes - There is a plan to make this available

Study Protocol

Yes - There is a plan to make this available

Statistical Analysis Plan

Yes - There is a plan to make this available

Informed Consent Form

Yes - There is a plan to make this available

Clinical Study Report

Yes - There is a plan to make this available

Analytic Code

Yes - There is a plan to make this available

Data Dictionary

Yes - There is a plan to make this available

Title and more details about the data/document

the effect of two moderate and high resistance exercise intensities on muscle damage indicator, inflammation response and antioxidant system in non-athlete male students

When the data will become available and for how long

After printing the related article

To whom data/document is available

General

Under which criteria data/document could be used

Prevent

From where data/document is obtainable

Internet

What processes are involved for a request to access data/document

Search

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