

Clinical Trial Protocol

Iranian Registry of Clinical Trials

11 Sep 2026

The effect of 8 weeks of resistance training with pomegranate extract on resting metabolic rate, hypertrophy and muscle strength of inactive male students

Protocol summary

Study aim

The aim of this study was to investigate the effect of 8 weeks of resistance training with pomegranate extract on resting metabolic rate, hypertrophy and muscle strength of inactive male students.

Design

42 inactive boys were selected voluntarily and randomly divided into four groups: resistance training (n = 11), resistance training with pomegranate extract (n = 11), pomegranate extract (n = 10) and control (n = 10).

Settings and conduct

Exercises were performed in the gym of Mohaghegh Ardabili University by an experienced instructor. Subjects' measurements were performed before and after 8 weeks of resistance training.

Participants/Inclusion and exclusion criteria

Subjects are inactive untrained men who have no cardiovascular or musculoskeletal disease.

Intervention groups

Resistance training program for 8 weeks, 3 sessions per week and will include 2 movements for the upper body (barbell chest press and barbell shoulder press) and 2 movements for the lower body (front leg and machine leg press). The subjects of the resistance training group + pomegranate extract (half an hour before training) and the pomegranate extract group will consume 100 ml of pomegranate extract 3 times a week.

Main outcome variables

Muscle hypertrophy, Resting metabolism, Body fat percentage and Muscle strength

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20190927044893N2**

Registration date: **2021-10-25, 1400/08/03**

Registration timing: **prospective**

Last update: **2021-10-25, 1400/08/03**

Update count: **0**

Registration date

2021-10-25, 1400/08/03

Registrant information

Name

Roghayeh Afroundeh

Name of organization / entity

University of Mohaghegh Ardabili

Country

Iran (Islamic Republic of)

Phone

+98 45 3359 3278

Email address

afroundeh@gmail.com

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2021-11-06, 1400/08/15

Expected recruitment end date

2022-01-10, 1400/10/20

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

The effect of 8 weeks of resistance training with pomegranate extract on resting metabolic rate, hypertrophy and muscle strength of inactive male

students

Public title
The effect of resistance training with pomegranate extract on health factors

Purpose
Basic science

Inclusion/Exclusion criteria
Inclusion criteria:
Men do not practice inactive
Exclusion criteria:
Having any musculoskeletal injuries Use any medication or supplement Having underlying diseases

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: **42**

Randomization (investigator's opinion)
Randomized

Randomization description
The random number table will be used for simple randomization to assign subjects to the group. To use random number tables, the researcher must first determine direction for reading numbers in table (for example , up, down, left or right). The second step for researcher is considering numbers for different groups (eg, even numbers for intervention A and odd numbers for intervention B). The researcher then selects one number and assigning them to different groups.

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 Ardabil University of Medical Sciences

Street address

Ardabil Mohaghegh Ardabili University, Department of Physical Education

City

Ardabil

Province

Ardabil
Postal code
5619911367
Approval date
2019-05-05, 1398/02/15
Ethics committee reference number
IR.ARUMS.REC.1398.054

Health conditions studied

1

Description of health condition studied

Resting metabolism and health indicators

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description

Resting metabolism

Timepoint

Before and after 8 weeks of resistance training - before and after 8 weeks of resistance training with pomegranate extract - before and after 8 weeks of pomegranate extract

Method of measurement

By gas analyzer Device

2

Description

Percentage of body fat

Timepoint

Before and after 8 weeks of resistance training - before and after 8 weeks of resistance training with pomegranate extract - before and after 8 weeks of pomegranate extract

Method of measurement

By Caliper

3

Description

Muscle hypertrophy

Timepoint

Before and after 8 weeks of resistance training - before and after 8 weeks of resistance training with pomegranate extract - before and after 8 weeks of pomegranate extract

Method of measurement

Tape meter

4

Description

Muscle strength

Timepoint

Before and after 8 weeks of resistance training - before and after 8 weeks of resistance training with

pomegranate extract - before and after 8 weeks of
pomegranate extract

Method of measurement

Test a maximum repetition

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group: Subjects will take a measurement session to assess resting metabolism, body fat percentage, muscle hypertrophy, and muscle strength. They will then participate in an 8-week protocol of resistance training, resistance training with pomegranate extract, and pomegranate extract. After this period, they will repeat a measurement session to determine the desired factors.

Category

Diagnosis

2

Description

Control group: Subjects will take a measurement session to estimate resting metabolism, body fat percentage, muscle hypertrophy, and muscle strength. But they will not participate in any activities for 8 weeks. After this period, they will repeat a measurement session to determine the desired factors.

Category

Diagnosis

Recruitment centers

1

Recruitment center

Name of recruitment center

Mohaghegh Ardabili University

Full name of responsible person

Roghayyeh afroundeh

Street address

Ardabil, Mohaghegh Ardabili University, Department
of Physical Education and Sports Science

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5619956131

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Email

afroundeh@gmail.com

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Mohaghegh Ardabili University

Full name of responsible person

Roghayyeh afroundeh

Street address

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of Physical Education

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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

Mohaghegh Ardabili University

Proportion provided by this source

50

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 Ardabili University

Full name of responsible person

Roghayyeh afroundeh

Position

Faculty Member

Latest degree

Ph.D.

Other areas of specialty/work

Exercise physiology

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Person responsible for scientific inquiries

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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

No - There is not 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

No - There is not a plan to make this available

Data Dictionary

No - There is not a plan to make this available

Title and more details about the data/document

There is possibility to share results and statistical information

When the data will become available and for how long

Access period starts 4 months after the results are published

To whom data/document is available

Sports researchers and coaches

Under which criteria data/document could be used

For use in projects and sports fields

From where data/document is obtainable

Roghayyeh afroundeh, afroundeh@gmail.com, 09141532136

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

By email

Comments