

# Clinical Trial Protocol

## Iranian Registry of Clinical Trials

15 Jun 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

Roghayyeh Afroudeh

###### Name of organization / entity

University of Mohaghegh Ardabili

###### Country

Iran (Islamic Republic of)

###### Phone

+98 45 3359 3278

###### Email address

afroudeh@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

###### City

Ardabil

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Ardabil

###### Postal code

5619956131

###### Phone

+98 45 3345 0670

###### Email

afroundeh@gmail.com

### Sponsors / Funding sources

#### 1

##### Sponsor

###### Name of organization / entity

Mohaghegh Ardabili University

###### Full name of responsible person

Roghayyeh afroundeh

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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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**Latest degree**

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**Other areas of specialty/work**

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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**