

Clinical Trial Protocol

Iranian Registry of Clinical Trials

30 Jun 2026

Effects of pomegranate juice consumption associated with endurance exercise on oxidative stress, indices of muscle damage, inflammation and body composition in healthy young men

Protocol summary

Summary

Muscle damage caused by free radicals may be produced during intense exercise. Antioxidants prevent the oxidative stresses induced by intense physical exercise and after exercise helps to go back to initial conditions. Thus, antioxidant supplementation in athletes can be useful. Pomegranate contains a variety of sugars, organic acids, alkaloids, poly-phenols, flavonoids, anthocyanins and vitamins that can be effective in improving the antioxidant capacity. This study investigated the effects of pomegranate juice consumption with endurance exercise on oxidative stress and inflammatory markers and body composition of muscle damage is done. Procedure: in this study, double-blind, placebo-controlled clinical trial to be conducted 30 healthy young men were randomly divided into control and experimental groups of 15 persons. Inclusion criteria: men; willingness to participate in the study; no use of antioxidant supplementation in the past one month; age between 20 to 25 years old and BMI between 20-25. Exclusion criteria: being athlete; smoking; catching diseases that require special treatment; unwillingness to continue the study. Interventions consisted of 250 mL of pomegranate juice naturally matched control group of 250 cc oil pomegranate juice and physical activity to be 3 times a week, each time for 90 minutes of aerobic exercise as running with the intensity of 70% VO₂ max is 8 week is done. Before and after intervention in both groups fasting blood sample for testing creatine kinase, lactate dehydrogenase, malondialdehyde, CRP is taken. Body composition parameters measured by the device bioimpedance the results of both groups are analyzed and compared.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT2014051910826N10**

Registration date: **2014-07-18, 1393/04/27**

Registration timing: **retrospective**

Last update:

Update count: **0**

Registration date

2014-07-18, 1393/04/27

Registrant information

Name

Azadeh Nadjarzadeh

Name of organization / entity

Shahid Sadoughi University of Medical Sciences

Country

Iran (Islamic Republic of)

Phone

+98 912 202 2817

Email address

azadnajarzadeh@ssu.ac.ir

Recruitment status

Recruitment complete

Funding source

Shahid Sadoughi University of Medical Sciences

Expected recruitment start date

2014-06-22, 1393/04/01

Expected recruitment end date

2014-07-01, 1393/04/10

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Effects of pomegranate juice consumption associated with endurance exercise on oxidative stress, indices of muscle damage, inflammation and body composition in healthy young men

Public title

Effects of pomegranate juice consumption associated with endurance exercise on oxidative stress, indices of muscle damage, inflammation and body composition in healthy young men

Purpose

Prevention

Inclusion/Exclusion criteria

Inclusion criteria: men; willingness to participate in the study; no use of antioxidant supplementation in the past one month; age between 20 to 25 years old and BMI between 20-25. Exclusion criteria: being athlete; smoking; catching diseases that require special treatment; unwillingness to continue the study.

Age

From **20 years** old to **25 years** old

Gender

Male

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **30**

Randomization (investigator's opinion)

Randomized

Randomization description**Blinding (investigator's opinion)**

Double blinded

Blinding description**Placebo**

Used

Assignment

Parallel

Other design features**Secondary Ids**

empty

Ethics committees**1****Ethics committee****Name of ethics committee**

The University of Medical Science (martyr Sadooghi)

Street address

Yazd, Imam Hossein Square

City

yazd

Postal code**Approval date**

2013-12-21, 1392/09/30

Ethics committee reference number

17/1/187844/پ

Health conditions studied**1****Description of health condition studied**

muscle damage

ICD-10 code

M-63

ICD-10 code description

Disorders of muscle in diseases classified elsewhere

Primary outcomes**1****Description**

Blood Creatine Kinase

Timepoint

Before & after intervention

Method of measurement

Level of enzyme activity by photometric method

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

malondialdehyde

Timepoint

before & after intervention

Method of measurement

blood Biochemical test

2**Description**

CRP

Timepoint

before & after intervention

Method of measurement

blood Biochemical test

3**Description**

Percent body fat

Timepoint

before & after intervention

Method of measurement

Byvampdans Device

4**Description**

LDH

Timepoint

before & after intervention

Method of measurement

blood Biochemical test

5

Description

Percentage of lean body mass

Timepoint

Before & after intervention

Method of measurement

Bioimpedans Device

6

Description

weight

Timepoint

before & after intervention

Method of measurement

seca Balance

7

Description

Height

Timepoint

before & after intervention

Method of measurement

Tape meter

8

Description

BMI

Timepoint

before & after intervention

Method of measurement

kgr/m² ,seca Balance and tape meter

9

Description

cholesterol

Timepoint

before & after intervention

Method of measurement

blood Biochemical test

10

Description

fasting blood sugar

Timepoint

before & after intervention

Method of measurement

blood Biochemical test

11

Description

triglycerides

Timepoint

before & after intervention

Method of measurement

blood Biochemical test

12

Description

HDL

Timepoint

before & after intervention

Method of measurement

blood Biochemical test

13

Description

LDL

Timepoint

before & after intervention

Method of measurement

blood Biochemical test

14

Description

blood presure

Timepoint

before & after intervention

Method of measurement

manometer

Intervention groups

1

Description

250 cc natural pomegranate juice daily to 8 weeks of the intervention group and Physical activity three times a week, each time for 90 minutes of aerobic exercise intensity of 70% VO₂ max for Jogging For the intervention group

Category

Other

2

Description

Daily to 250 mL of tap water containing Essence and color of pomegranate for 8 weeks and Physical activity three times a week, each time for 90 minutes of aerobic exercise intensity of 70% VO₂ max for Jogging For the control group

Category

Placebo

Recruitment centers

1

Recruitment center

Name of recruitment center

Isfahan University of Medical Sciences

Full name of responsible person

Ehsan Bayat

Street address

City

Isfahan

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Research services of shahid sadoughi university

Full name of responsible person

Dr. Hassan Mozafari

Street address

Yazd,bahonar square

City

yazd

Grant name**Grant code / Reference number****Is the source of funding the same sponsor organization/entity?**

Yes

Title of funding source

Research services of shahid sadoughi university

Proportion provided by this source

100

Public or private sector

empty

Domestic or foreign origin

empty

Category of foreign source of funding

empty

Country of origin**Type of organization providing the funding**

empty

Person responsible for general inquiries

Contact

Name of organization / entity

Department of nutrition, School of public health,
Shahid Sadoughi University

Full name of responsible person

Dr. Azade Najarzadeh

Position

PhD, Assistant professor

Other areas of specialty/work**Street address**

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Person responsible for scientific inquiries

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Full name of responsible person

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Web page address

Sharing plan

Deidentified Individual Participant Data Set (IPD)

empty

Study Protocol

empty

Statistical Analysis Plan

empty

Informed Consent Form

empty

Clinical Study Report

empty

Analytic Code

empty

Data Dictionary

empty