# Clinical Trial Protocol
# Iranian Registry of Clinical Trials

10 Jun 2026

## The effect of pomegranate juice consumption on antioxidant and oxidant variables after exercise in young men.

## Protocol summary


**Summary**

Introduction and Objectives: Severe physical activity in athletes is cause of oxygen consumption and free radicals production by decreasing of total antioxidant capacity and increasing of oxidative stress. Thus, the consumption of antioxidant supplements can be useful in athletes. Pomegranate is rich of antioxidant compounds can be effective in strengthening of body antioxidant capacity. The aim of this study is the survey of the effect of pomegranate juice on total antioxidant capacity in athletes. Methods: In a clinical trial study 30 healthy male student athletes will be selected and randomly divided into two groups of control and supplement (15 subjects for each group). Healthy male athlete students, age between 18 - 40 years old, living in Ardabil University of Medical Sciences Boarding will be included. People with having certain diseases, non-athletes, smoking, and consumption of other supplements will be excluded. Interventions of study will be having pomegranate juice and exhaustive training. Interventional and control groups intake of 240 cc pomegranate juice and tap water per day for two weeks, respectively. Then both groups will be done once exhaustive exercise. Fasting blood samples from both groups will be taken for testing of MDA, antioxidant substances, activities of antioxidant enzymes, and other parameters at the beginning and the end of supplementation period and exhaustive training. Then data were analysis and two groups will be compared.


## General information

**Acronym**

**IRCT registration information**

IRCT registration number: **IRCT201012255144N2**
Registration date: **2011-09-17, 1390/06/26**
Registration timing: **registered_while_recruiting**
Last update:
Update count: **0**

**Registration date**

2011-09-17, 1390/06/26


**Registrant information**

**Name**
Ali Nemati
**Name of organization / entity**
Ardabil University of Medical Sciences
**Country**
Iran (Islamic Republic of)
**Phone**
+98 45 3351 0052
**Email address**
a.nemati@arums.ac.ir


**Recruitment status**

**Recruitment complete**


**Funding source**

Vice Chancellor for Research, Ardabil University of Medical Sciences


**Expected recruitment start date**

2011-04-09, 1390/01/20

**Expected recruitment end date**

2011-12-22, 1390/10/01

**Actual recruitment start date**

empty

**Actual recruitment end date**

empty

**Trial completion date**

empty

**Scientific title**

The effect of pomegranate juice consumption on antioxidant and oxidant variables after exercise in young men.

**Public title**

The effect of pomegranate juice consumption on antioxidant and oxidant variables after exercise in young

men.

**Purpose**
Prevention

**Inclusion/Exclusion criteria**
Inclusion criteria; healthy male students athlete, at age between 18 - 40 years old, living in Ardabil University of Medical Sciences Boarding. Exclusion criteria; people with have certain diseases, non-athletes, smoking, and consumption of other supplements.

**Age**
From **18 years** old to **40 years** old

**Gender**
Male

**Phase**
2-3

**Groups that have been masked**
*No information*

**Sample size**
Target sample size: **30**

**Randomization (investigator's opinion)**
Randomized

**Randomization description**

**Blinding (investigator's opinion)**
Not blinded

**Blinding description**

**Placebo**
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**
Vice Chancellor for Research, The Site of Ardabil University of Medical Sciences, The end of Daneshgah Avenue, Ardabil

**City**
Ardabil

**Postal code**
5618985991

**Approval date**
2011-07-21, 1390/04/30

**Ethics committee reference number**
1/901

## Health conditions studied

### 1

**Description of health condition studied**
Athletic healthy individuals

**ICD-10 code**
Z02.5

**ICD-10 code description**
Examination for participation in sport

## Primary outcomes

### 1

**Description**
Exhaustion time

**Timepoint**
At the end of once training

**Method of measurement**
The signs and symptoms related to the complete exhaustion

## Secondary outcomes

### 1

**Description**
Malondialdehyde

**Timepoint**
At the beginning and the end of intervention

**Method of measurement**
Spectrophotometry

### 2

**Description**
Total antioxidant capacity

**Timepoint**
At the beginning and end of intervention

**Method of measurement**
Spectrophotometry

### 3

**Description**
Weight

**Timepoint**
At the beginning of intervention

**Method of measurement**
Digital scales

### 4

**Description**
Height

**Timepoint**
At the beginning intervention

**Method of measurement**
Stadiometers

### 5

**Description**
Glutathione

**Timepoint**
At the beginning and the end of intervention

**Method of measurement**
ELISA

## 6

**Description**
Total cholesterol
**Timepoint**
At the beginning and end of intervention
**Method of measurement**
Spectrophotometry

## 7

**Description**
Cu
**Timepoint**
At the beginning and the end of intervention
**Method of measurement**
Atomic absorption spectrophotometry

## 8

**Description**
Zn
**Timepoint**
At the beginning and the end of intervention
**Method of measurement**
Atomic absorption spectrophotometry

## 9

**Description**
Mg and ...
**Timepoint**
At the beginning and the end of intervention
**Method of measurement**
Atomic absorption spectrophotometry

## 10

**Description**
Fe
**Timepoint**
At the beginning and end of intervention
**Method of measurement**
Spectrophotometry

## 11

**Description**
Glutathione peroxidase
**Timepoint**
At the beginning and the end of intervention
**Method of measurement**
Spectrophotometry

## 12

**Description**
Paraoxonase 1
**Timepoint**
At the beginning and the end of intervention
**Method of measurement**
Spectophotometry

## 13

**Description**
Superoxide desmutase
**Timepoint**
At the beginning and the end of intervention
**Method of measurement**
Spectrophotometry

## 14

**Description**
Matrix metalloproteinase 9
**Timepoint**
At the beginning and the end of intervention
**Method of measurement**
ELISA

## 15

**Description**
Ceruloplasmin
**Timepoint**
At the beginning and the end of intervention
**Method of measurement**
Spectrophotometry

## 16

**Description**
LDL-C
**Timepoint**
At the beginning and the end of intervention
**Method of measurement**
Spectrophotometry

## 17

**Description**
HDL-C
**Timepoint**
At the beginning and end of intervention
**Method of measurement**
Spectrophotometry

## 18

**Description**
Triglyceride
**Timepoint**
At the beginning and the end of intervention
**Method of measurement**
Spectrophotometry

## 19

**Description**
Fasting blood suger
**Timepoint**
At the beginning and the end of intervention
**Method of measurement**
Spectrophotometry

## 20

**Description**
Urea
**Timepoint**
At the beginning and the end of intervention
**Method of measurement**
Spectrophotometry

## 21

**Description**
Creatinine
**Timepoint**
At the beginning and the end of intervention
**Method of measurement**
Spectrophotometry

## 22

**Description**
Bilirubin
**Timepoint**
At the beginning and the end of intervention
**Method of measurement**
Spectrophotometry

## 23

**Description**
Uric acid
**Timepoint**
At the beginning and the end of intervention
**Method of measurement**
Spectrophotometry

## 24

**Description**
Aspartate Aminotransferase
**Timepoint**
At the beginning and the end of intervention
**Method of measurement**
Spectrophotometry

## 25

**Description**
Alanine Aminotransferase
**Timepoint**
At the beginning and the end of intervention
**Method of measurement**
Spectrophotometry

## 26

**Description**
Vitamin C
**Timepoint**
At the beginning and the end of intervention
**Method of measurement**
Spectrophotometry

## 27

**Description**
Matrix metalloproteinase 2
**Timepoint**
At the beginning and the end of intervention
**Method of measurement**
ELISA

## 28

**Description**
high sensitivity C- Reactive Protein
**Timepoint**
At the beginning and the end of intervention
**Method of measurement**
Spectrophotometry

## 29

**Description**
Interleukin 6
**Timepoint**
At the beginning and the end of intervention
**Method of measurement**
ELISA

## 30

**Description**
Interleukin 1
**Timepoint**
At the beginning and the end of intervention
**Method of measurement**
ELISA

## 31

**Description**
Interleukin 2
**Timepoint**
At the beginning and the end of intervention
**Method of measurement**
ELISA

## 32

**Description**
Arylesterase
**Timepoint**
At the beginning and the end of intervention
**Method of measurement**
Spectrophotometry

## 33

**Description**
Cell Blood Count, Hemoglobin and Hematocrit
**Timepoint**
At the beginning and the end of intervention
**Method of measurement**
Cell Counter

## Intervention groups

### 1

**Description**
Given 240 cc daily of pomegranate juice to interventional group for two weeks. Given once training until exhaustive status to interventional group.
**Category**
Other

### 2

**Description**
Given 240 cc daily of tap water to control group for two weeks Given once training until exhaustive status to control group
**Category**
Other

## Recruitment centers

### 1

**Recruitment center**
**Name of recruitment center**
Ardabil University of Medical Sciences
**Full name of responsible person**
Ali Shadman
**Street address**
Basic Sciences Group, Faculty Medicine, Ardabil University of Medical Sciences
**City**
Ardabil

## Sponsors / Funding sources

### 1

**Sponsor**
**Name of organization / entity**
Vice Chancellor for Research, Ardabil University of Medical Sciences
**Full name of responsible person**
Hadii Pyrii
**Street address**
Vice Chancellor for Research, The Site of Ardabil University of Medical Sciences, The end of Daneshgah Avenue, Ardabil
**City**
Ardabil
**Grant name**
**Grant code / Reference number**
**Is the source of funding the same sponsor organization/entity?**
Yes
**Title of funding source**
Vice Chancellor for Research, Ardabil University of Medical Sciences
**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**

## Person responsible for scientific inquiries

**Contact**
**Name of organization / entity**
Assistant Professor
**Full name of responsible person**
Mohammad Mazani
**Position**
PhD of Clinical Biochemistry
**Other areas of specialty/work**
**Street address**
Basic Sciences Group, Faculty of Medicne, Ardabil University of Medical Sciences, Daneshgah Avenue, Shahid Yousri Street, Over Shorabil Lake, Ardabil
**City**
Ardabil
**Postal code**
5618953141
**Phone**
+98 45 1551 0052
**Fax**
+98 451551057
**Email**
m.mazani@arums.ac.ir
**Web page address**
http//:www.arums.ac.ir

## Person responsible for updating data

**Contact**
**Name of organization / entity**
Ardabil University of Medical Sciences
**Full name of responsible person**
Mohammad Mazani
**Position**
PhD of Clinical chemistry
**Other areas of specialty/work**
**Street address**
Basic Sciences Group, Faculty of Medicne, Ardabil University of Medical Sciences, Daneshgah Avenue, Shahid Yousri Street, Over Shorabil Lake, Ardabil
**City**
Ardabil
**Postal code**
5618953141
**Phone**
+98 45 1551 0052
**Fax**

+98 45 1551 0057
**Email**
m.mazani@arums.ac.ir
**Web page address**
http//:www.arums.ac.ir

## 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*