Clinical Trial Protocol
Iranian Registry of Clinical Trials

08 Nov 2026

The comparison of the effect of garlic allicin and vitamin C on delayed onset muscle soreness and some plasma markers in athletes

Protocol summary

Summary

The aim of this study was to investigate and compare the effect of garlic allicin and vitamin C on delayed muscle soreness, creatine kinase enzymes and lactate dehydrogenase in athletes. For this reason, 30 individuals among 72 volunteer club male karate athletes who aged between 16-18 years with healthy cardiovascular, pulmonary and renal system, also without consumption of any antioxidant supplements including vitamins C, E,... and anti-inflammation drugs, were selected randomly and were divided into 3 different groups of garlic allicin, vitamin C and placebo and consumed the supplements 14 days and 2 days pre and post- physical activity, respectively. 14 days after supplement consumption, the contestants ran on the treadmill with gradient of -5% and 75% heart rate reserve (HRR). In order to measure the variables of the study (CK and LDH), the blood samples of the contestants were collected 14 days pre and post supplement consumption and also 24, 1 and 48 hours post physical activity.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT201010245000N1**
Registration date: **2011-01-30, 1389/11/10**
Registration timing: **retrospective**

Last update:
Update count: **0**

Registration date

2011-01-30, 1389/11/10

Registrant information

Name

Afsaneh Elahi

Name of organization / entity

Faculty of physical education and sport sciences, Islamic Azad University of Karaj

Country

Iran (Islamic Republic of)

Phone

+98 935 549 4101

Email address

elahi.afsaneh@yahoo.com

Recruitment status

Recruitment complete

Funding source

Personal resources/Investigator

Expected recruitment start date

2010-08-03, 1389/05/12

Expected recruitment end date

2010-09-23, 1389/07/01

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

The comparison of the effect of garlic allicin and vitamin C on delayed onset muscle soreness and some plasma markers in athletes

Public title

Effect of garlic allicin and vitamin C on muscle soreness exercise-induced

Purpose

Prevention

Inclusion/Exclusion criteria

Inclusion criteria: physical health. Exclusion criteria: family history of cardiovascular defects, family history of pulmonary and renal defects, antioxidant supplement consumption including vitamin C, E,.., anti-inflammation drugs consumption.

Age
From **18 years** old to **26 years** old
Gender
Male

Phase
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)
Single blinded
Blinding description
Placebo
Used
Assignment
Parallel
Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee
Name of ethics committee
Faculty of nursing and midwifery, Islamic Azad University of Karaj
Street address
Shahid Moazen Blvd, Rajaee shahr
City
Karaj
Postal code
Approval date
2010-11-10, 1389/08/19
Ethics committee reference number
0016

Health conditions studied

1

Description of health condition studied
Delayed onset muscle soreness
ICD-10 code
M79.9
ICD-10 code description
Soft tissue disorder, unspecified

Primary outcomes

1

Description
serum creatine kinase enzyme
Timepoint
before intervention, on 14 days post intervention and before exercise, 1, 24, 48 hours after 14 days intervention and exercise
Method of measurement
blood sample

2

Description
serum lactate dehydrogenase enzyme
Timepoint
before intervention, on 14 days post intervention and before exercise, 1, 24, 48 hours after 14 days intervention and exercise
Method of measurement
blood sample

Secondary outcomes

1

Description
Rate of perceived exertion (evaluate muscle soreness)
Timepoint
before intervention, on 14 days post intervention and before exercise, 1, 24, 48 hours after 14 days intervention and exercise
Method of measurement
score of borg’s scale

Intervention groups

1

Description
vitamin C intake 1000 mg/pday for 16 days
Category
Prevention

2

Description
garlic allicin intake 70 mg/pday for 16 days
Category
Prevention

3

Description
placebo intake for 16 days
Category
Placebo

4

Description
run on downhill treadmill with the gradient of -٪5 at ٪75 of heart rate reserve (HRR) for 45 min
Category
Other

Recruitment centers

1

Recruitment center

Name of recruitment center
Faculty of physical education and sport sciences, Islamic Azad University of Karaj

Full name of responsible person
Afsaneh Elahi

Street address
Shahid Moazen Blvd, Rajaee shahr

City
Karaj

Sponsors / Funding sources

1

Sponsor

Name of organization / entity
Afsaneh Elahi (Personal resources)

Full name of responsible person
Afsaneh Elahi

Street address
Faculty of physical education and sport sciences, Islamic Azad University of Karaj, Shahid Moazen Blvd, Rajaee shahr

City
Karaj

Grant name

Grant code / Reference number

Is the source of funding the same sponsor organization/entity?
Yes

Title of funding source
Afsaneh Elahi (Personal resources)

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
Faculty of physical education and sport sciences, Islamic Azad University of Karaj

Full name of responsible person
Afsaneh Elahi

Position
Master of Science in physical education and sport sciences

Other areas of specialty/work

Street address
Faculty of physical education and sport sciences, Islamic Azad University of Karaj, Shahid Moazen Blvd, Rajaee shahr

City
Karaj

Postal code

Phone
+98 935 549 4101

Fax

Email
elahi.afsaneh@yahoo.com

Web page address

Person responsible for scientific inquiries

Contact

Name of organization / entity
Faculty of physical education and sport sciences, Islamic Azad University of Karaj

Full name of responsible person
Afsaneh Elahi

Position
Master of Science in physical education and sport sciences

Other areas of specialty/work

Street address
Faculty of physical education and sport sciences, Islamic Azad University of Karaj, Shahid moazen Blvd, Rajaee shahr

City
Karaj

Postal code

Phone
+98 99355494101

Fax

Email
elahi.afsaneh@yahoo.com

Web page address

Person responsible for updating data

Contact

Name of organization / entity
Faculty of physical education and sport sciences, Islamic Azad University of Karaj

Full name of responsible person
Afsaneh Elahi

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Phone

Fax

Email

elahi.afsaneh@yahoo.com

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