

Clinical Trial Protocol

Iranian Registry of Clinical Trials

10 Jun 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)

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+98 935 549 4101

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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, Rajaei 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

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Shahid Moazen Blvd, Rajae shahr

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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,
Rajae 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

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Person responsible for scientific inquiries

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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