Clinical Trial Protocol
Iranian Registry of Clinical Trials

16 Sep 2026

The effect of creatine and carnitine supplementation on anaerobic performance, energy metabolism, inflammatory markers, oxidative stress and kidney function in athletes

Protocol summary

Summary

This study was a randomized and single blind clinical trial to determine the effects of creatine and carnitine supplementation on anaerobic performance, energy metabolism (lactic acid, TG), interleukin-6, malondialdehyde, glutathione peroxidase, BUN, blood creatinine and creatinine 24 hour urine in athletes martial. 48 male athletes who have just started this sport at the age between 18 to 30 years, no history of liver disease, cardio - vascular problems, muscular - skeletal, lung, and not receiving protein supplement during the past few months to be reviewed are. A candidate's consent to participate in this study was fulfiiled. During the supplementation period (4 weeks) someone with a cold or diarrhea, are excluded. Volunteers randomly divided into 4 groups of 12 people are following: athletes with creatine supplementation (0.3 g / kg / d for 7 days and 0.03 g / kg / d , followed by 21 days); athletes with carnitine supplementation (2 g / d for every 28 days); athletes and carnitine supplementation with creatine supplementation (0.3 g / kg / d for 7 days and 0.03 g / kg / d for 21 days followed by addition 2 g / d for each person for 28 days) and athletes receiving placebo. Beginning and end of the performance indicators anaerobic, lactate, TG, IL-6, malondialdehyde and glutathione peroxidase, BUN, creatinine, and creatinine 24 hour urine were measured.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT201203063236N3**
Registration date: **2012-03-14, 1390/12/24**
Registration timing: **retrospective**

Last update:
Update count: **0**

Registration date

2012-03-14, 1390/12/24

Registrant information

Name

Zohreh Mazloom

Name of organization / entity

Shiraz University of Medical Sciences

Country

Iran (Islamic Republic of)

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+98 71 1725 1008

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Recruitment status

Recruitment complete

Funding source

Shiraz University of Medical Sciences

Expected recruitment start date

2011-12-11, 1390/09/20

Expected recruitment end date

2012-01-10, 1390/10/20

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

The effect of creatine and carnitine supplementation on anaerobic performance, energy metabolism, inflammatory markers, oxidative stress and kidney function in athletes

Public title

Effects of creatine supplementation in athletes

Purpose
Other
Inclusion/Exclusion criteria
Inclusion criteria: male athletes, martial artist who recently have started this exercise. Age between 18 and 30 years, no history of liver disease, cardio - vascular or muscular problems - musculoskeletal, pulmonary, and not receiving any type of protein supplement during the last few months. Exclusion criteria from the study: During the supplementation period, someone with a cold or diarrhea will be excluded
Age
From **18 years** old to **30 years** old
Gender
Male

Phase
N/A
Groups that have been masked
No information
Sample size
Target sample size: **48**
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
Shiraz University of Medical Sciences
Street address
Central Medical Building, Zand Avenue, PO Box =978-71345, Shiraz
City
Shiraz
Postal code
1978 _71345
Approval date
2011-11-19, 1390/08/28
Ethics committee reference number
5810 - 90 - CT

Health conditions studied

1

Description of health condition studied
Athletes
ICD-10 code
Z10
ICD-10 code description
Routine general health check-up of defined subpopulation

Primary outcomes

1

Description
Anaerobic performance
Timepoint
Before and after intervention
Method of measurement
Menarche bike model E894

2

Description
Triglyceride
Timepoint
Before and after intervention
Method of measurement
Colorimetric method with an autoanalyzer system

3

Description
Lactic Acid
Timepoint
Before and after intervention
Method of measurement
Spectrophotometrically with spectrophotometry

4

Description
interleukin-6
Timepoint
Before and after intervention
Method of measurement
Spectrophotometry with RIA

5

Description
Glutathione peroxidase
Timepoint
Before and after intervention
Method of measurement
ELISA using ELISA kits

6

Description
malondialdehyde
Timepoint
Before and after intervention
Method of measurement
Spectrophotometrically with spectrophotometry

7

Description
Creatinine
Timepoint
Before and after intervention
Method of measurement
Colorimetric method with an autoanalyzer system

8

Description
BUN
Timepoint
Before and after intervention
Method of measurement
Colorimetric method with an autoanalyzer system

9

Description
24-hour urine creatinine
Timepoint
Before and after intervention
Method of measurement
Colorimetric method with an autoanalyzer system

Secondary outcomes

1

Description
Overweight
Timepoint
Before and after intervention
Method of measurement
By Libra

2

Description
Weight loss
Timepoint
Before and after intervention
Method of measurement
By Libra

Intervention groups

1

Description
Placebo (MCC mixed with cellulose) 8 g daily (4 times daily) for 28 days
Category
Placebo

2

Description
Supplementation with creatine and carnitine (0.3 g / kg / d to 7 days, and 0.03 g / kg / d to 21 days followed by addition 2 g/d for every 28 days)
Category
Other

3

Description
20 to 30 grams of creatine monohydrate supplementation (0.3 grams per kilogram of body weight) for 7 days (loading period) 2 to 5 grams to 21 days later (maintain period)
Category
Other

4

Description
Carnitine supplementation 2 g daily for 28 days
Category
Other

Recruitment centers

1

Recruitment center
Name of recruitment center
Velayat Sport Center
Full name of responsible person
Amin Azhdari, MSc in Exercise Physiology
Street address
Shiraz, Chamran Blvd, St Niayesh, Velayat Sport
City
Shiraz

Sponsors / Funding sources

1

Sponsor
Name of organization / entity
Shiraz university of medical sciences
Full name of responsible person
Dr Mohammad Ali Sahmeddini
Street address
Zand Ave, University of Central Building
City
Shiraz
Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
Yes
Title of funding source
Shiraz 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

Name of organization / entity

School of health & nutrition, Shiraz University of Medical Sciences

Full name of responsible person

Bahman Panahandeh

Position

MSc student of nutrition

Other areas of specialty/work

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Person responsible for scientific inquiries

Contact

Name of organization / entity

Shiraz University of Medical Sciences

Full name of responsible person

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Position

PhD of nutrition, Assistant professor of nutrition department

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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