Clinical Trial Protocol
Iranian Registry of Clinical Trials

09 Nov 2026

The Effects of Short Term Citrulline malate Supplementation on Oxidative Stress Markers and Muscle damage of Trained Soccer Players

Protocol summary

Study aim

The effect of citrulline malate supplementation on oxidative stress

Design

Using a table of random numbers, they are divided into two groups (an intervention group and a control group). The third person is done. And the research team will not be aware of the type of supplement provided. The duration of the intervention for each group will be 7 days, during which the intervention group and the control group will be given 6 grams of citrulline malate.

Settings and conduct

Working in Isfahan and Isfahan University of Medical Sciences

Participants/Inclusion and exclusion criteria

1-Willingness to participate in the study 2. Do not use tobacco and alcohol 3. History of playing football for three years 4. Do not use antioxidant supplements, etc. in the past month 5. Age 18 to 22 years 6. No history of any acute or chronic disease

Intervention groups

The intervention group received 6 grams of citrulline malate supplementation half an hour before exercise and the control group received placebo for 7 days.

Main outcome variables

1. There is a difference between the mean serum MDA in the control group before and after supplementation. 2- There is a difference between the mean serum TAC in the control group before and after the supplementation. 3- There is a difference between the mean serum CAT in the control group before and after the supplementation. 4- There is a difference between the mean serum SOD in the control group before and after supplementation. There is a difference between the mean serum GSH in the control group before and after the supplementation. 6- There is a difference between the mean serum UA in the control group before and after the supplementation. 7- There is a difference between the mean serum LDH in the control group before and after supplementation. 8- There is a difference between the mean serum CK in the control group before and after the supplementation.

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20190915044772N1**
Registration date: **2021-02-01, 1399/11/13**
Registration timing: **retrospective**

Last update: **2021-02-01, 1399/11/13**
Update count: **0**

Registration date

2021-02-01, 1399/11/13

Registrant information

Name

Sadegh Mirenayat

Name of organization / entity

Country

Iran (Islamic Republic of)

Phone

+98 31 3359 8037

Email address

sadegh.mir1374@gmail.com

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2019-07-23, 1398/05/01

Expected recruitment end date

2019-09-23, 1398/07/01

Actual recruitment start date

2019-07-23, 1398/05/01

Actual recruitment end date

2019-09-23, 1398/07/01

Trial completion date
2019-12-06, 1398/09/15

Scientific title
The Effects of Short Term Citrulline malate Supplementation on Oxidative Stress Markers and Muscle damage of Trained Soccer Players

Public title
Citrulline Malate Supplementation on Oxidative Stress Markers

Purpose
Supportive

Inclusion/Exclusion criteria

Inclusion criteria:
age18-23years Professional activity history for at least 3 years Do not take antioxidant supplements Satisfaction to participate in the study

Exclusion criteria:
Alcohol and tobacco consumption Having a specific injury or illness Allergies or digestive problems Failure to follow the study

Age
From **18 years** old to **23 years** old

Gender
Male

Phase
3

Groups that have been masked

- Participant
- Care provider
- Investigator
- Outcome assessor
- Data analyser

Sample size
Target sample size: **28**
Actual sample size reached: **28**
More than 1 sample in each individual
Actual sample size in each individual: **2**
Before supplementation and after supplementation

Randomization (investigator's opinion)
Randomized

Randomization description
The study is divided into two groups (one intervention group and one control group) using a table of random numbers. Performed by a third party. And the research team will not be aware of the type of supplement provided

Blinding (investigator's opinion)
Double blinded

Blinding description
The subjects were randomly divided into two groups a and b. Supplement and placebo were divided between the two groups without any apparent difference by one of my classmates who was outside the research team and was unaware of the type of supplements. One group received a supplement and the other group received a placebo

Placebo
Used

Assignment
Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee
Ethics Committee of Isfahan University of Medical Sciences

Street address
hezar jarib

City
Isfahan

Province
Isfehan

Postal code
8413647143

Approval date
2019-01-30, 1397/11/10

Ethics committee reference number
IR.MUI.RESEARCH.REC.1397.373

Health conditions studied

1

Description of health condition studied
Footballer and oxidative stress

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description
1 - Determining and comparing the mean of serum oxidative stress indices in the control and intervention groups, before and after supplementation

Timepoint
First and 7 days later

Method of measurement
Blood samples in the laboratory

Secondary outcomes

empty

Intervention groups

1

Description
Intervention group: Citrulline malate supplement 6 g for 7 days (Karen Company)

Category

Rehabilitation

2

Description
Control group: placebo (malto dextrin) 6 g for 7 days (Karen Company)
Category
Placebo

Recruitment centers

1

Recruitment center
Name of recruitment center
Isfahan Zobahan Cultural and Sports Club
Full name of responsible person
Saeid Azari
Street address
Shfagh Ave
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8413613147
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sadegh.mir1374@gmail.com

Sponsors / Funding sources

1

Sponsor
Name of organization / entity
Esfahan University of Medical Sciences
Full name of responsible person
Amir Alavi
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Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
Yes
Title of funding source
Esfahan University of Medical Sciences
Proportion provided by this source
100
Public or private sector
Public
Domestic or foreign origin
Domestic
Category of foreign source of funding
empty
Country of origin
Type of organization providing the funding
Academic

Person responsible for general inquiries

Contact
Name of organization / entity
Esfahan University of Medical Sciences
Full name of responsible person
amir mansoor alavi
Position
Associate professor
Latest degree
Ph.D.
Other areas of specialty/work
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Person responsible for updating data

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Position
MSc student

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Other areas of specialty/work
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Sharing plan

Deidentified Individual Participant Data Set (IPD)
Yes - There is a plan to make this available

Study Protocol
Undecided - It is not yet known if there will be a plan to make this available

Statistical Analysis Plan
Undecided - It is not yet known if there will be a plan to make this available

Informed Consent Form
Undecided - It is not yet known if there will be a plan to make this available

Clinical Study Report
Undecided - It is not yet known if there will be a plan to make this available

Analytic Code
Undecided - It is not yet known if there will be a plan to make this available

Data Dictionary
Undecided - It is not yet known if there will be a plan to make this available

Title and more details about the data/document
Statistical data in the article

When the data will become available and for how long
After publishing the article

To whom data/document is available
Academics

Under which criteria data/document could be used
article

From where data/document is obtainable
00989133766560

What processes are involved for a request to access data/document
call

Comments