Clinical Trial Protocol
Iranian Registry of Clinical Trials

19 Jun 2026

Investigating the effect of a high intense interval training session followed by two weeks of Vitamin C and ginger supplementation on some hematological indicators and muscle damage in young male athletes

Protocol summary

Study aim

Investigating the effect of a high intense interval training session followed by two weeks of vitamin C and ginger supplementation on some hematological indicators and muscle damage in young male athletes.

Design

A one-phase clinical trial on 40 elite athletes, with a control group, with parallel groups, a single-blind method, using the online software of the site https://randomizer.org, was simplified randomized.

Settings and conduct

On the day of the test: Recording the weight and height of subjects, performing warm-up activities. Then performing the rest test for all groups, after 30 minutes of rest and warm-up, the athlete again performs the Tabata protocol until exhaustion. Immediately, the heart rate is recorded for 6 seconds and blood sampling is also done. After cool-down the athletes, they are given the necessary supplements and instructions.

Participants/Inclusion and exclusion criteria

Entry requirements: The subjects are men. Boys aged 15 to 19 with two years of continuous sports experience. None of the subjects used food and energy supplements. With the call, the elite athletes, after knowing all the stages of research and testing, declare their agreement by completing the consent form. Athletes under legal age, their guardians/legal guardians must express their consent. Non-entry conditions: Existence of sports injuries in athletes before entering the research. The subject has joint or cardiovascular problems or certain diseases.

Intervention groups

Number of 4 intervention groups: Group A consumes vitamin C, Group B consumes ginger, Group C consumes vitamin C and ginger at the same time; Group D, the control group consumes placebo (corn starch).

Main outcome variables

Investigating the possible effects of two weeks of ginger vitamin C consumption on hematology and LDH and CK levels after intense training in young taekwondo athletes.

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20231205060268N1**
Registration date: **2023-12-20, 1402/09/29**
Registration timing: **prospective**

Last update: **2023-12-20, 1402/09/29**
Update count: **0**

Registration date

2023-12-20, 1402/09/29

Registrant information

Name

Mohsen Afrad

Name of organization / entity

University of Qom

Country

Iran (Islamic Republic of)

Phone

+98 25 3288 4090

Email address

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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2023-12-22, 1402/10/01

Expected recruitment end date

2024-01-05, 1402/10/15

Actual recruitment start date
empty
Actual recruitment end date
empty
Trial completion date
empty

Scientific title
Investigating the effect of a high intense interval training session followed by two weeks of Vitamin C and ginger supplementation on some hematological indicators and muscle damage in young male athletes

Public title
Investigating the effect of two weeks of vitamin C and ginger supplements on hematological indicators and muscle damage
Purpose
Basic scienece
Inclusion/Exclusion criteria
Inclusion criteria:
The gender of all subjects is male. Boys aged 15 to 19 in Taekwondo who have been practicing sports continuously for more than two years. All subjects practiced at least three sessions a week before entering the study. None of the subjects used nutritional and energy supplements. By making the call, the elite athletes, after knowing all the stages of research and testing, declare their agreement by completing the consent form. In the consent form for athletes under legal age, their legal guardian/guardian must also declare their consent and consent.
Exclusion criteria:
Creating sports injuries in athletes before entering the research. The existence of the effects of the athlete's previous injury, which may harm his health by conducting research. The subject has joint or cardiovascular problems. The subject has certain diseases.
Age
From **15 years** old to **19 years** old
Gender
Male

Phase
3
Groups that have been masked

- Participant
- Care provider

Sample size
Target sample size: **40**
Randomization (investigator's opinion)
Randomized
Randomization description
Individual randomization method using the online software of https://randomizer.org
Blinding (investigator's opinion)
Single blinded
Blinding description
Subjects are entered into the test in a single-blind manner. In this research, the supplement and placebo groups were used in capsules of the same color and size, and considering that the subjects were not aware of the supplement and placebo, but the researcher was aware of the capsules. Therefore, one-sided research was used in this research. In the supplement and training group, vitamin C and ginger supplements were used with a dose of 1 gram in capsules, as well as 1 gram of corn starch in 1 gram capsules in the placebo group, similar to the supplementation groups.
Placebo
Used
Assignment
Parallel
Other design features
Investigating the simultaneous effect of Vitamin C and Ginger on the amount of muscle damage caused by intense sports activity; Using workout protocol "Tabata".

Secondary Ids

empty

Ethics committees

1

Ethics committee
Name of ethics committee
Ethics committee of Qom University of Medical Sciences
Street address
No 83, Aly 4, 1 St. , Safashahr Ave.
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Province
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Postal code
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Approval date
2023-12-11, 1402/09/20
Ethics committee reference number
IR.MUQ.REC.1402.195

Health conditions studied

1

Description of health condition studied
Investigating the effect of two weeks of vitamin C and ginger supplements on hematological indicators and muscle damage
ICD-10 code
ICD-10 code description

Primary outcomes

1

Description
Effect of vitamin C and ginger on lactate dehydrogenase enzyme in athletes.
Timepoint
A: On the first day after performing the training

protocols, a 5cc blood sample is taken from the basilic vein of the arm. B: After fourteen days of taking the supplement, blood sampling is done on the fourteenth day and after repeating the training protocols.

Method of measurement

After blood sampling, the amount of lactate dehydrogenase enzyme is measured in the laboratory using the LDH-P kit according to the optimal standard method of the German Biochemical Society (OPT.DGKC).

2

Description

Effect of vitamin C and ginger on Creatine kinase enzyme of athletes.

Timepoint

A: On the first day after performing the training protocols, a 5cc blood sample is taken from the basilic vein of the arm. B: After fourteen days of taking the supplement, blood sampling is done on the fourteenth day and after repeating the training protocols.

Method of measurement

After blood sampling, the amount of creatine enzyme is measured in the laboratory using the CK-NAC kit using the optimal standard method of the German Biochemical Society (OPT.DGKC).

3

Description

The effect of vitamin C and ginger on the hematology of athletes.

Timepoint

A: On the first day after performing the training protocols, a 5cc blood sample is taken from the basilic vein of the arm. B: After fourteen days of taking the supplement, blood sampling is done on the fourteenth day and after repeating the training protocols.

Method of measurement

After blood sampling, complete blood cell count (CBC) is done in the laboratory.

Secondary outcomes

1

Description

Increasing anaerobic power.

Timepoint

A: The first day of performing training protocols based on the anaerobic test. B: After fourteen days of taking the supplement, on the fourteenth day, exercise protocols are performed based on the Rest Anaerobic Test.

Method of measurement

Based on the subject's weight and the time recorded each time over a distance of 35 meters.

2

Description

Improved fatigue index.

Timepoint

A: The first day of performing training protocols based on the anaerobic test. B: After fourteen days of taking the supplement, on the fourteenth day, exercise protocols are performed based on the Rest Anaerobic Test.

Method of measurement

The difference between the peak power and the minimum power, divided by the minimum power, multiplied by a percentage.

Intervention groups

1

Description

Intervention group A: the group that consumes vitamin C produced by Iran Daru Company. The dosage is 1000 mg per day, in two meals per day after meals. Duration of use 14 days.

Category

Treatment - Drugs

2

Description

Intervention group B: the group that consumes the ginger supplement produced by Gol Daru Company. The dosage is 1000 mg per day, in two meals per day after meals. Duration of use 14 days.

Category

Treatment - Drugs

3

Description

Intervention group C: the group that simultaneously consume vitamin C produced by Iran Daru Company and ginger supplement produced by Gol Daru Company. The dosage of each supplement is 1000 mg per day, in two servings per day after meals. Duration of use 14 days.

Category

Treatment - Drugs

4

Description

Control group: The placebo group consumes 1000 mg of corn starch per day, in two meals and after meals. Duration of use 14 days.

Category

Placebo

Recruitment centers

1

Recruitment center

Name of recruitment center

Qom University of Medical Sciences and Health Services

Full name of responsible person

Mohsen Afrad

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Sponsors / Funding sources

1

Sponsor
Name of organization / entity
The University of Qom
Full name of responsible person
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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
The University of Qom
Proportion provided by this source
100
Public or private sector
Private
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
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Sharing plan

Deidentified Individual Participant Data Set (IPD)
No - There is not a plan to make this available
Justification/reason for indecision/not sharing IPD
Confidentiality of subjects' information.
Study Protocol
Yes - There is a plan to make this available
Statistical Analysis Plan
Yes - There is a plan to make this available
Informed Consent Form
No - There is not a plan to make this available
Clinical Study Report
No - There is not a plan to make this available
Analytic Code
No - There is not a plan to make this available
Data Dictionary
No - There is not a plan to make this available
Title and more details about the data/document
Part of the data is accessible such as anthropometric information such as height, weight and BMI.
When the data will become available and for how long
The information will be available From the time of project completion in january 2024 until 6 months after the completion of the project.
To whom data/document is available
All persons including students, professors and relevant officials will have free access.
Under which criteria data/document could be used
Other researchers will have free access to all statistical information.
From where data/document is obtainable
To the e-mail address of the researcher.
m_a1618@yahoo.com
What processes are involved for a request to access data/document
Ten days after sending the application email and sending the applicant's documents as a student or professor or relevant responsible person, the results will be sent to the applicant's email.
Comments