

Clinical Trial Protocol

Iranian Registry of Clinical Trials

03 Jul 2026

Effects of curcumin supplementation in comparison with placebo on serum creatinine kinase (CK), lactate dehydrogenase (LDH), malonyl dialdehyde (MDA), total antioxidant capacity (TAC), and interleukin-6 (IL-6) after taekwondo race in taekwondo men

Protocol summary

Study aim

Effect of Curcumin supplementation on muscle damage, antioxidant status and inflammatory factors after the taekwondo race

Design

The study was a phase 2, community-based and pragmatic, randomized, single blind, controlled clinical trial on 18 subjects, and a sealed envelope was used for randomization.

Settings and conduct

All subjects took part in a legal taekwondo race (3 competitions) in the gymnasium hall of Tabriz University three days after taking the supplement. One-way blinding was used. The method of blinding was that all capsules (curcumin and placebo) were similar in color (white) and size (1 g) and were coded and none of the subjects knew the contents of the capsules until the end of the study.

Participants/Inclusion and exclusion criteria

Inclusion criteria: all subjects must have had at least 3 years of experience in Taekwondo competitions; Non-inclusion criteria: Athletes' maximum oxygen consumption (VO₂ max) should not be less than 45 percent

Intervention groups

Intervention group: 9 male taekwondo players who took curcumin supplements and participated in 3 taekwondo competitions (curcumin group). Control group: 9 male taekwondo players who consumed rice powder and participated in 3 taekwondo competitions (Placebo group).

Main outcome variables

Creatine kinase (CK); lactate dehydrogenase (LDH); malonyl dialdehyde (MDA); total antioxidant capacity (TAC); interleukin- 6 (IL-6)

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20180513039637N3**

Registration date: **2020-05-24, 1399/03/04**

Registration timing: **retrospective**

Last update: **2020-05-24, 1399/03/04**

Update count: **0**

Registration date

2020-05-24, 1399/03/04

Registrant information

Name

Hadi Pourmanaf

Name of organization / entity

Tehran University

Country

Iran (Islamic Republic of)

Phone

+98 41 3656 1262

Email address

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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2018-05-01, 1397/02/11

Expected recruitment end date

2018-05-08, 1397/02/18

Actual recruitment start date

2018-05-01, 1397/02/11

Actual recruitment end date

2018-05-08, 1397/02/18

Trial completion date

2018-05-08, 1397/02/18

Scientific title

Effects of curcumin supplementation in comparison with placebo on serum creatinine kinase (CK), lactate dehydrogenase (LDH), malonyl dialdehyde (MDA), total antioxidant capacity (TAC), and interleukin-6 (IL-6) after taekwondo race in taekwondo men

Public title

Effect of Curcumin supplementation on muscle damage

Purpose

Education/Guidance

Inclusion/Exclusion criteria**Inclusion criteria:**

At least 3 years of experience in taekwondo competitions Athletes' maximum oxygen consumption (VO2 max) should be more than 45 percent

Exclusion criteria:

Having a history of diabetes Having a history of cardiovascular disease Having a history of respiratory disease Having food allergies Having a drug allergy Use of inflammatory agents before or during the study Use a sports supplement before or during the study Use the drug before or during the study

Age

From **19 years** old to **27 years** old

Gender

Male

Phase

N/A

Groups that have been masked

- Participant

Sample size

Target sample size: **19**

Actual sample size reached: **18**

Randomization (investigator's opinion)

Randomized

Randomization description

Using simple randomization, individuals were divided into two homogeneous groups (curcumin and placebo). Randomization tools were also sealed envelopes. The randomization unit was also individual. The odd numbers in the envelope showed the subjects in the curcumin group, and the even numbers showed the subjects in the placebo group. The allocation concealment was such that none of the subjects knew the meaning of the numbers in the envelope and did not know which group they belonged to.

Blinding (investigator's opinion)

Single blinded

Blinding description

The capsules were identical in weight (1 g, 0.5 g), form, color and packing. They were coded and No subjects were aware of the contents of the capsules until the end of the study.

Placebo

Used

Assignment

Other

Other design features**Secondary Ids**

empty

Ethics committees**1****Ethics committee****Name of ethics committee**

Ethics committee of Sport Science Research Institute

Street address

No.3, 5th closed alley, Miremad street., Qods Town

City

Tehran

Province

Tehran

Postal code

00000-00000

Approval date

2020-04-12, 1399/01/24

Ethics committee reference number

IR.SSRC.REC.1399.015

Health conditions studied**1****Description of health condition studied**

Dose not apply

ICD-10 code**ICD-10 code description****Primary outcomes****1****Description**

Serum creatine kinase (CK) level in taekwondo athletes

Timepoint

Blood sampling was performed before the start of supplementation (3 day before the race), one hour before the race, immediately after the race, 24 hours and 48 hours after the race (5 stages).

Method of measurement

Creatine kinase kit

2**Description**

Serum lactate dehydrogenase (LDH) level in taekwondo athletes

Timepoint

Blood sampling was performed before the start of supplementation (3 day before the race), one hour before the race, immediately after the race, 24 hours and 48 hours after the race (5 stages).

Method of measurement

lactate dehydrogenase kit

3

Description

Serum Malonyl Dialdehyde (MDA) Levels in Taekwondo Athletes

Timepoint

Blood sampling was performed before the start of supplementation (3 day before the race), one hour before the race, immediately after the race, 24 hours and 48 hours after the race (5 stages).

Method of measurement

Malonyl Dialdehyde kit

4

Description

Serum total antioxidant capacity (TAC) levels in Taekwondo athletes

Timepoint

Blood sampling was performed before the start of supplementation (3 day before the race), one hour before the race, immediately after the race, 24 hours and 48 hours after the race (5 stages).

Method of measurement

total antioxidant capacity kit

5

Description

Serum Interleukin-6 (IL-6) Level in Taekwondo Athletes

Timepoint

Blood sampling was performed before the start of supplementation (3 day before the race), one hour before the race, immediately after the race, 24 hours and 48 hours after the race (5 stages).

Method of measurement

Interleukin-6 kit

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group: 9 male Taekwondoers who took curcumin supplements (4 g/d) for 5 days. 3 days after eating curcumin, subjects participated in Taekwondo competition (3 races with 30 min rest) and received curcumin for up to two days after the competition. In this study, the curcumin supplement produced by Karma Company, Iran was used.

Category

Other

2

Description

Control group: 9 male Taekwondoers who took placebo supplements (4 g/d of rice flour) for 5 days. 3 days after eating placebo, subjects participated in Taekwondo

competition (3 races with 30 min rest) and received placebo for up to two days after the competition.

Category

Placebo

Recruitment centers

1

Recruitment center

Name of recruitment center

Imam Reza Hospital in Tabriz

Full name of responsible person

Aytak memarzadeh

Street address

Shafa alley, Azadi boulevard

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East Azarbaijan

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Phone

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Email

Aytak_memarzadeh@yahoo.com

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Islamic Azad University

Full name of responsible person

Farzad Zehsaz

Street address

Pasdaran highway - Tabriz

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Tabriz

Province

East Azarbaijan

Postal code

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Phone

+98 41 3667 3861

Email

f-zehsaz@iaut.ac.ir

Grant name

Grant code / Reference number

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

Yes

Title of funding source

Islamic Azad University

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

Tabriz University of Medical Sciences

Full name of responsible person

Hadi Pourmanaf

Position

Master Educated

Latest degree

Master

Other areas of specialty/work

Physiology

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Person responsible for scientific inquiries

Contact

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Person responsible for updating data

Contact

Name of organization / entity

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Full name of responsible person

Hadi Pourmanaf

Position

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Latest degree

Master

Other areas of specialty/work

Physiology

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hadi.pvrmanaf@ut.ac.ir

Sharing plan

Deidentified Individual Participant Data Set (IPD)

Yes - There is a plan to make this available

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

Yes - There is a plan to make this available

Clinical Study Report

Yes - There is a plan to make this available

Analytic Code

Yes - There is a plan to make this available

Data Dictionary

Yes - There is a plan to make this available

Title and more details about the data/document

In adress: Sportdezh.rzb.ir

When the data will become available and for how long

Every time

To whom data/document is available

everyone

Under which criteria data/document could be used

Modeling of the subject, supplementation method and training method is allowed

From where data/document is obtainable

Send an email to hadipourmanaf@yahoo.com or visit Sportdezh.rzb.ir.

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

Send an email to hadipourmanaf@yahoo.com or visit Sportdezh.rzb.ir.

Comments