Clinical Trial Protocol
Iranian Registry of Clinical Trials

08 Nov 2026

Comparing the effectiveness of high-intensity interval training with/without taurine supplementation on the control of oxidative stress indices in female karate athletes

Protocol summary

Study aim
Comparing the effectiveness of high-intensity interval training with/without taurine supplementation on the control of oxidative stress indices in female karate athletes

Design
A single-blind, randomized clinical trial comprising a high-intensity interval training plus taurine supplementation group (n = 10) and a high-intensity interval training plus placebo group (n = 10).

Settings and conduct
This single-blind clinical trial aims to evaluate female karateka in Kashmar. Twenty participants recruited from local sports clubs will be randomly assigned to two groups of 10: a high-intensity interval training plus taurine group and a HIIT plus placebo group. Participants will be blinded to the capsule contents.

Participants/Inclusion and exclusion criteria
Must have a minimum of two consecutive years of regular karate training experience Must be physically healthy Non-use of any dietary supplements or non-steroidal anti-inflammatory drugs Non-compliance with the prescribed dosage of taurine supplementation or placebo. Non-use of the prescribed dose of taurine supplement or placebo Occurrence of any acute injury or trauma (such as joint or muscle injuries) that prevents the continuation of training

Intervention groups
Intervention group (Training with Taurine): The taurine-training group will consume 1 g of taurine (Reyhaneh Pharmaceutical Co., Isfahan, Iran) 45–60 minutes pre-exercise for eight weeks. Concurrently, participants will undergo eight weeks of HIIT (3 sessions/week, 30–35 min/session), starting at 85–90% HRmax and progressing to 90–100% {HRmax} by week eight. The protocol and additional training principle will be conducted in Kashmar, Iran.

Main outcome variables
Malondialdehyde, Superoxide dismutase enzyme, Total antioxidant capacity

General information

Reason for update
Acronym
IRCT registration information
IRCT registration number: **IRCT20120129008863N18**
Registration date: **2026-08-25, 1405/06/03**
Registration timing: **prospective**

Last update: **2026-08-25, 1405/06/03**
Update count: **0**

Registration date
2026-08-25, 1405/06/03

Registrant information
Name
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Recruitment status
recruiting
Funding source

Expected recruitment start date
2026-09-11, 1405/06/20
Expected recruitment end date
2026-11-16, 1405/08/25
Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Comparing the effectiveness of high-intensity interval training with/without taurine supplementation on the control of oxidative stress indices in female karate athletes

Public title

Comparing the effectiveness of high-intensity interval training with/without taurine supplementation on oxidative stress markers

Purpose

Health service research

Inclusion/Exclusion criteria

Inclusion criteria:

Must have a minimum of two consecutive years of regular karate training experience Must be physically healthy Non-use of any dietary supplements or non-steroidal anti-inflammatory drugs Aged between 18 and 30 years old

Exclusion criteria:

Non-compliance with the prescribed dosage of taurine supplementation or placebo. Non-use of the prescribed dose of taurine supplement or placebo Occurrence of any acute injury or trauma (such as joint or muscle injuries) that prevents the continuation of training

Age

From **18 years** old to **30 years** old

Gender

Female

Phase

N/A

Groups that have been masked

- Participant

Sample size

Target sample size: **20**

Randomization (investigator's opinion)

Randomized

Randomization description

This study will utilize a block randomization method with variable block sizes (e.g., 4 or 6) to allocate participants into two groups: 1) moderate-intensity interval training combined with taurine supplementation, and 2) training combined with placebo. The random sequence will be generated using Random Allocation Software (version 2.0) by an independent researcher not involved in recruitment or intervention, ensuring strict allocation concealment and minimizing selection bias.

Blinding (investigator's opinion)

Single blinded

Blinding description

The present study is a single-blind clinical trial in which the blinding applies to the taurine and placebo groups. During the first session, participants will read the study protocol. The supplement and placebo are provided in identical capsules distributed among the participants. Only the researcher is aware of the contents of the capsules.

Placebo

Used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Hakim Sabzevari University

Street address

Hakim Sabzevari University, Tohid Shahr, Sabzevar; Department of Sport Sciences

City

Sabzevar

Province

Razavi Khorasan

Postal code

9617976487

Approval date

2026-05-31, 1405/03/10

Ethics committee reference number

IR.HSU.REC.1405.008

Health conditions studied

1

Description of health condition studied

Inflammation and physical performance in karateka

ICD-10 code

Z00.6

ICD-10 code description

Encounter for examination for normal comparison and control in clinical research program

Primary outcomes

1

Description

Malondialdehyde

Timepoint

Before the intervention and two months following it

Method of measurement

zellBio kit (mmol/l)

Secondary outcomes

1

Description

Body Mass Index (BMI) Kg/m2

Timepoint

Before the intervention and two months following it

Method of measurement

The body mass (kg) divided by the square of the body height (cm)

2

Description

Superoxide dismutase

Timepoint

Before the intervention and two months following it

Method of measurement

zellBio kit (mmol/l)

3

Description

Total Antioxidant Capacity

Timepoint

Before the intervention and two months following it

Method of measurement

zellBio kit (mmol/l)

Intervention groups

1

Description

Intervention group: Exercise with Taurine: This group received taurine supplementation at a dose of 15 mg per kilogram of body weight for eight weeks. The taurine supplement was provided by Reihaneh Pharmaceutical Company (Isfahan, Iran). High-intensity interval training (HIIT) was performed for eight weeks, 3 sessions per week, with each session lasting 30 to 35 minutes. The training intensity began at 85–90% of maximum heart rate (HR_{max}) in the first week and progressively increased to 90–100% of HR_{max} by the eighth week. The timing protocol and additional training principles were conducted in Kashmar.

Category

Rehabilitation

2

Description

Control group: Exercise with Placebo: This group consumed placebo capsules matching a dose of 15 mg per kilogram of body weight for eight weeks. The placebo was manufactured by Reihaneh Pharmaceutical Company (Isfahan, Iran). High-intensity interval training (HIIT) was performed for eight weeks, 3 sessions per week, with each session lasting 30 to 35 minutes. The training intensity began at 85–90% of maximum heart rate in the first week and progressively increased to 90–100% of HRmax by the eighth week. The timing protocol and additional training principles were conducted at the Kashmar Municipality Gymnasium.

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center

Hakim Sabzevari University

Full name of responsible person

Dr. Keyvan Hejazi

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Vice Presidency for Research and Technology, Hakim Sabzevari University

Full name of responsible person

Dr. Ali Asghar 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

Vice Presidency for Research and Technology, Hakim Sabzevari 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
Hakim Sabzevari University

Full name of responsible person
Dr. Keyvan Hejazi

Position
Associate professor

Latest degree
Ph.D.

Other areas of specialty/work
Physiology

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Sharing plan

Deidentified Individual Participant Data Set (IPD)
Undecided - It is not yet known if there will be 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