Clinical Trial Protocol
Iranian Registry of Clinical Trials

09 Nov 2026

Comparative Effects of Small-Sided Games with and without Coenzyme Q10 Supplementation on Oxidative Stress Markers in Soccer Players

Protocol summary

Study aim
En Comparative Effects of Small-Sided Games with and without Coenzyme Q10 Supplementation on Oxidative Stress Markers in Soccer Players

Design
This study is a randomized, single-blind clinical trial comprising two groups of 10 participants each: a small-sided games training group with CoQ10 supplementation (n=10) and a small-sided games training group with placebo (n=10).

Settings and conduct
This single-blind clinical trial aims to evaluate soccer players in Neyshabur. Twenty participants recruited from local sports clubs will be randomly assigned to two groups of 10 each: training group with CoQ10 supplementation and a training group with placebo. Participants will be blinded to the content of the capsules.

Participants/Inclusion and exclusion criteria
Having at least 2 years of continuous and organized participation in soccer; being in full physical health (confirmed by the PAR-Q health questionnaire); no consumption of any antioxidant, vitamin, or anti-inflammatory supplements within 3 months prior to the study significant dietary changes or unauthorized use of ergogenic supplements during the intervention period; occurrence of sports injuries preventing continuation of the training protocol

Intervention groups
Exercise with CoQ10 Group: Participants in this group consumed daily CoQ10 supplementation at a dose of 100 mg (sourced from Rosedarou Pharmaceutical Co., Iran) approximately 2 to 4 hours prior to exercise for six weeks. They also performed moderate-intensity interval training for six weeks (3 sessions per week, 20 to 30 minutes per session), with training intensity ranging from 75% to 95% of maximum heart rate. All training sessions were conducted at the Neyshabur Municipality Gymnasium.

Main outcome variables
Glutathione peroxidase, total antioxidant capacity, malondialdehyde

General information

Reason for update

Acronym

IRCT registration information
IRCT registration number: **IRCT20120129008863N17**
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

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Name of organization / entity
Ferdowsi University of Mashhad

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Recruitment status
recruiting

Funding source

Expected recruitment start date
2026-09-11, 1405/06/20

Expected recruitment end date
2026-11-11, 1405/08/20

Actual recruitment start date
empty

Actual recruitment end date
empty
Trial completion date
empty

Scientific title
Comparative Effects of Small-Sided Games with and without Coenzyme Q10 Supplementation on Oxidative Stress Markers in Soccer Players

Public title
Comparative Effects of Small-Sided Games with and without Coenzyme Q10 Supplementation on Oxidative Stress Markers
Purpose
Health service research
Inclusion/Exclusion criteria
Inclusion criteria:
Having at least 2 years of continuous and organized participation in soccer Being in full physical health (confirmed by the PAR-Q health questionnaire) No consumption of any antioxidant, vitamin, or anti-inflammatory supplements within 3 months prior to the study Adherence to a regular diet and non-use of tobacco and alcohol
Exclusion criteria:
Absence from more than two consecutive sessions or 10% of total training sessions Significant dietary changes or unauthorized use of ergogenic supplements during the intervention period Occurrence of sports injuries preventing continuation of the training protocol Contracting infectious or viral illnesses during the study period that could alter inflammatory and oxidative markers.
Age
From **18 years** old to **20 years** old
Gender
Male

Phase
N/A
Groups that have been masked

- Participant

Sample size
Target sample size: **20**
Randomization (investigator's opinion)
Randomized
Randomization description
This study utilizes a simple individual-level randomization method, where 20 participants are randomly assigned to two groups (high-intensity interval training with CoQ10 supplementation and training with placebo). A computer-generated sequence is used for random allocation to ensure high precision and reproducibility while minimizing selection bias.
Blinding (investigator's opinion)
Single blinded
Blinding description
This study is a single-blind clinical trial in which blinding applies exclusively to the CoQ10 and placebo administration. Participants read the research protocol during the first session, and the supplement and placebo, provided in identical capsules, are distributed among them such that only the researcher is aware of the capsule contents.
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.1405.007

Health conditions studied

1

Description of health condition studied
Inflammation in Football Players
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
Glutathione peroxidase
Timepoint
Before the exercise intervention and 6 weeks after the intervention
Method of measurement
Laboratory method: Enzyme-Linked Immunosorbent Assay, using the ZellBio kit (mmol/L)

Secondary outcomes

1

Description
Total Antioxidant Capacity
Timepoint
Before the exercise intervention and 6 weeks after the intervention
Method of measurement
Laboratory method: Enzyme-Linked Immunosorbent Assay, using the ZellBio kit (mmol/L)

Intervention groups

1

Description
Intervention group: Intervention Group 1 (Training + Supplementation): Participants in this group will engage in a 6-week small-sided games training program while receiving the active supplement. The training protocol consists of three sessions per week, with each session lasting 60 minutes in total (including a 10-minute warm-up, 40 minutes of main training, and a 10-minute cool-down). Concurrently, subjects will consume one 100 mg CoQ10 capsule daily (manufactured by Rosedarou Pharmaceutical Co., Iran) approximately 2 to 4 hours prior to exercise. All training sessions will be conducted under the direct supervision of a certified coach.
Category
Rehabilitation

2

Description
Control group: Intervention Group 2 (Training + Placebo): Participants in this group will perform the identical 6-week small-sided games training protocol (3 sessions per week, 60 minutes per session). Instead of CoQ10, they will consume one placebo capsule daily (containing canola oil, manufactured by Rosedarou Pharmaceutical Co., Iran). The placebo capsules are identical in physical appearance to the CoQ10 capsules to maintain blinding. All training sessions will be conducted under the direct supervision of a certified coach to ensure safety and protocol adherence.
Category
Rehabilitation

Recruitment centers

1

Recruitment center
Name of recruitment center
Hakim Sabzevari University
Full name of responsible person
Keyvan Hejazi
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Sponsors / Funding sources

1

Sponsor
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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