Clinical Trial Protocol
Iranian Registry of Clinical Trials

07 Nov 2026

Effect of aerobic exercise and short-term coenzyme Q10 supplementation on on serum total antioxidant capacity, malondiadehyde and creatine kinase in male non-athletes.

Protocol summary

Summary

The purpose of the present study is to investigate the effect of aerobic exercise and short-term Coenzyme Q10 supplementation on serum total antioxidant capacity (TAC), cellular damage and malondiadehyde (MDA) in male non-athletes. Twenty healthy male volunteer non-athletes (aged 22-28 years) in a randomized, double-blind design will be allocated in two equal groups to receive supplement (2.5 mg/kg/day Coenzyme Q10) or placebo (2.5 mg/kg/day dextrose) groups. After the supplementation period (14 days), all subjects will participate in an aerobic exercise protocol with 75% VO2max on the treadmill for 30 minutes. Blood samples will be obtained before the Q10 supplementation along with before and after the exercise protocol. The serum total antioxidant capacity (TAC) and Malondialdehyde (MDA) along with biochemical profiles will be measured by FRAP and spectrophotometer, respectively. The hematologic, creatine kinase and lactate changes will be determined by automatic analyzer. The normal data will analyzed by repeated measure ANOVA, Bonferroni and independent t test at α≤0.05.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT201011024663N3**
Registration date: **2011-12-01, 1390/09/10**
Registration timing: **retrospective**

Last update:
Update count: **0**

Registration date

2011-12-01, 1390/09/10

Registrant information

Name
Afshar Jafari
Name of organization / entity
University of Tabriz
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Iran (Islamic Republic of)
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Recruitment status

Recruitment complete

Funding source
University of Tabriz

Expected recruitment start date

2010-05-22, 1389/03/01

Expected recruitment end date

2010-06-22, 1389/04/01

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Effect of aerobic exercise and short-term coenzyme Q10 supplementation on on serum total antioxidant capacity, malondiadehyde and creatine kinase in male non-athletes.

Public title

Coenzyme Q10 and aerobic exercise effect on oxidative damages

Purpose

Basic scienece

Inclusion/Exclusion criteria

Inclusion criteria: Healthy male non-athletes, age 22-28

years, without any exercise training and inflammatory or oxidative supplement ingestion during 6 months prior to the study. Exclusion criteria: chronic diseases, injuries, aerobic power higher than 55ml/kg/min, fat percent lower than 10%.

Age
From **22 years** old to **28 years** old

Gender
Male

Phase
N/A

Groups that have been masked
No information

Sample size
Target sample size: **20**

Randomization (investigator's opinion)
Randomized

Randomization description

Blinding (investigator's opinion)
Double blinded

Blinding description

Placebo
Used

Assignment
Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee
Tabriz University of Medical Sciences

Street address
Golgasht St. Daneshgah St. Tabriz,

City
Tabriz

Postal code

Approval date
2010-07-08, 1389/04/17

Ethics committee reference number
8959

Health conditions studied

1

Description of health condition studied
Exercise-induced Oxidative damages

ICD-10 code
Y57.9

ICD-10 code description
Drug or medicament, unspecified

Primary outcomes

1

Description
Serum Total antioxidant capacity (TAC)

Timepoint
14 days after the initiation of the intervention

Method of measurement
by Frap Method

2

Description
Serum Malondialdehyde

Timepoint
14 days after the initiation of the intervention

Method of measurement
by thiobarbituric acid reactive substance (TBARS) and spectrophotometer

3

Description
Creatine Kinase Activity

Timepoint
14 days after the initiation of the intervention

Method of measurement
by automatic analyzer and spectrophotometer

Secondary outcomes

1

Description
Plasma Lactate

Timepoint
14 days after the initiation of the intervention

Method of measurement
by automatic analyzer .

2

Description
Peripheral blood leukocytes counts

Timepoint
14 days after the initiation of the intervention

Method of measurement
It will determine by automatic analyzer

3

Description
Maximal Oxygen Consumption

Timepoint
14 days after the initiation of the intervention

Method of measurement
by Bruce treadmill protocol

Intervention groups

1

Description
After 14-days supplementation, Placebo group (2.5 mg/kg/day Dextrose), will participate in an aerobic exercise protocol with 75% VO2max on the treadmill for 30 minutes.
Category
Placebo

2

Description
After 14-days supplementation, supplement group (2.5 mg/kg/day Coenzyme Q10), will participate in an aerobic exercise protocol with 75% VO2max on the treadmill for 30 minutes.
Category
Treatment - Drugs

Recruitment centers

1

Recruitment center
Name of recruitment center
University of Tabriz
Full name of responsible person
Dr Afshar Jafari
Street address
Faculty of physical education & sports sciences, University of Tabriz, Tabriz, Iran.
City
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Sponsors / Funding sources

1

Sponsor
Name of organization / entity
University of Tabriz
Full name of responsible person
Dr Hamidreza Ghassemzadeh
Street address
University of Tabriz, 29 Bahman Ave, Tabriz, Iran.
City
Tabriz
Grant name
بودجه‌ی مربوط به پایان نامه های تحصیلات تکمیلی دانشگاه تبریز
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
Yes
Title of funding source
University of Tabriz
Proportion provided by this source
100
Public or private sector
empty
Domestic or foreign origin
empty
Category of foreign source of funding
empty
Country of origin
Type of organization providing the funding
empty

Person responsible for general inquiries

Contact

Person responsible for scientific inquiries

Contact
Name of organization / entity
University of Tabriz
Full name of responsible person
Dr Afshar Jafari
Position
PhD in Molecular Exercise Physiology
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Person responsible for updating data

Contact

Sharing plan

Deidentified Individual Participant Data Set (IPD)
empty
Study Protocol
empty
Statistical Analysis Plan
empty
Informed Consent Form
empty
Clinical Study Report
empty
Analytic Code
empty
Data Dictionary
empty