Clinical Trial Protocol
Iranian Registry of Clinical Trials

07 Nov 2026

Effect of Acute Consumption of Coenzyme Q10 Supplementation on TNF-α Serum Levels During Maximal Exercise

Protocol summary

Summary

Aim of study: The depression of the immune system function that is typically observed after strenuous exercise is believed to be possibly mediated by stress hormones, cytokines and oxidative stress. The aim of this study was to investigate acute consumption of Coenzyme Q10 supplementation on serum concentrations of Tumor necrosis factor-alpha (TNF-α) during the maximal activity. Methods: Twelve healthy active males (age 21/75 ± 0/64 yr, BMI 23/7±0/94 kg/m2) performed 30-min exercise at 80% to 85% HRmax. Subjects 120 minutes pre-exercise received either of the following regimens: Coenzyme Q10 (2 mg per kg body weight) or placebo (food color). Blood samples were obtained prior to supplement consumption and immediately after exercise, then groups were reversed after 4 days.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT201108287430N1**
Registration date: **2012-10-31, 1391/08/10**
Registration timing: **retrospective**

Last update:
Update count: **0**

Registration date

2012-10-31, 1391/08/10

Registrant information

Name

Mohammad Mosaferi Ziaaldini

Name of organization / entity

Shahid beheshti university

Country

Iran (Islamic Republic of)

Phone

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Recruitment status

Recruitment complete

Funding source

This work was financialy supported by Mr. Mohammad Mosaferi Ziaaldini

Expected recruitment start date

2010-07-23, 1389/05/01

Expected recruitment end date

2010-08-06, 1389/05/15

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Effect of Acute Consumption of Coenzyme Q10 Supplementation on TNF-α Serum Levels During Maximal Exercise

Public title

Effect of acute coenzyme Q10 consumption on athletes' immune system

Purpose

Prevention

Inclusion/Exclusion criteria

Inclusion Criteria: Healthy individuals; no history of tobacco and alcohol consumption; no history of Antioxidant drugs and supplements for at least one month before the study; no any of physical activity at least 48 hours before the actual test. Exclusion Criteria: using drugs and antioxidant supplements during the study period; any physical injuries or medical disorders during the study period.

Age

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

Gender
Male

Phase
2

Groups that have been masked
No information

Sample size
Target sample size: **15**

Randomization (investigator's opinion)
Randomized

Randomization description

Blinding (investigator's opinion)
Double blinded

Blinding description

Placebo
Used

Assignment
Crossover

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee
Department of Exercise Physiology, School of Physical Education and Sport Sciences, Shahid Beheshti

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Tehran

Postal code
19848

Approval date
2009-07-19, 1388/04/28

Ethics committee reference number
D/767/1664

Health conditions studied

1

Description of health condition studied
Immune System

ICD-10 code
D72.9

ICD-10 code description
Disorder of white blood cells, unspecified

Primary outcomes

1

Description
Serum levels of TNF-alpha

Timepoint
before and after Intervention

Method of measurement
TNF-alpha serum levels were measured using ELISA method with comertial kits.

Secondary outcomes

empty

Intervention groups

1

Description
Control subjects consume Dextrose (2 mg per kilogram of body weight)120 minutes before the maximal test..

Category
Placebo

2

Description
study group subjects consume Coenzyme Q10 (2 mg per kilogram of body weight)120 minutes before the maximal test..

Category
Prevention

Recruitment centers

1

Recruitment center

Name of recruitment center
National Olympic and Paralympic Academy of Iran

Full name of responsible person
Mohammad Mosaferi

Street address

City
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Sponsors / Funding sources

1

Sponsor

Name of organization / entity
This work was financially suported by Mohammad Mosaferi

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
This work was financially suported by Mohammad Mosaferi
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

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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