Clinical Trial Protocol
Iranian Registry of Clinical Trials

17 Sep 2026

Effect of two-week high-impact Aerobics training and Caffeine plus Coenzyme Q10 supplementation on exercise-induced response of capillary lactate and some serum enzymes in female athletes

Protocol summary

Summary

Present study will perform in order to determine the effect of two weeks high-impact Aerobics training and Caffeine plus Coenzyme Q10 supplementation on exercise-induced response of capillary lactate and some serum enzymes in female athletes. Therefore, thirty-two elite female Aerobics athletes (age 20-28 years) will participate in a quasi-experimental repeated measured and double-blind design. The subjects will allocated in four randomized homogeneous groups. Placebo (Maltodexterine intake: 11 mg/kg/day), supplement group 1 (Caffeine intake: 6 mg/kg/day plus 5 mg/kg/day maltodextrine), supplement group 2 (Coenzyme Q10 intake: 5 mg/kg/day Q10 plus 6 mg/kg/day maltodexterine), supplement group 3 (Coenzyme Q10 plus Caffeine intake: 5 mg/kg/day Q10 plus 6 mg/kg/day Caffeine). All subjects will intake their capsules two times by day during Aerobics training protocol (11 exercise sessions) for two weeks. Blood samples will taken at three stages (30 minutes before first Aerobics session, 30 minutes before last Aerobics session, and 18- 24 hours after supplementation and training protocol). Biochemical markers (Creatine Kinase and Lactate Dehydrogenase: CK, LDH) and Capillary lactate will determine for all subjects.

General information

Acronym

CafQ10Fa2012

IRCT registration information

IRCT registration number: **IRCT201305124663N13**
Registration date: **2013-06-17, 1392/03/27**
Registration timing: **retrospective**

Last update:
Update count: **0**

Registration date

2013-06-17, 1392/03/27

Registrant information

Name

Afshar Jafari

Name of organization / entity

University of Tabriz

Country

Iran (Islamic Republic of)

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Recruitment status

Recruitment complete

Funding source

University of Tabriz

Expected recruitment start date

2012-12-30, 1391/10/10

Expected recruitment end date

2013-01-29, 1391/11/10

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Effect of two-week high-impact Aerobics training and Caffeine plus Coenzyme Q10 supplementation on exercise-induced response of capillary lactate and some serum enzymes in female athletes

Public title

Anti-fatigue effect of Caffeine-Q10 supplementation

Purpose

Basic scienece

Inclusion/Exclusion criteria

Inclusion: Female; 20-28 year; healthy; Aerobics athletes; BMI <25; without any anti-inflammatory or medical drug such as caffeine >100 mg/day (during 6 months prior to the study) Exclusion: Diseases; Injuries; Uncontrolled intake of anti-inflammatory drugs during the period; Uncontrolled intake of stimulants during the period;

Age

From **20 years** old to **28 years** old

Gender

Female

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **32**

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

2013-01-21, 1391/11/02

Ethics committee reference number

91193

Health conditions studied

1

Description of health condition studied

Exercise-induced physiological stress

ICD-10 code

Y57.9

ICD-10 code description

Drug or medicament, unspecified

Primary outcomes

1

Description

Total Serum Cereatine kinase (CK)

Timepoint

30 minutes before first Aerobics session; 30 minutes before last Aerobics session; and 18- 24 hours after supplementation and training protocol

Method of measurement

photometric methods with commercial kits (Bionik kit)

2

Description

Lactate Dehydrogenase

Timepoint

30 minutes before first Aerobics session; 30 minutes before last Aerobics session; and 18- 24 hours after supplementation and training protocol

Method of measurement

photometric methods with commercial kits (Bionik kit)

3

Description

Capillary Lactate

Timepoint

Before first and last session and after last session

Method of measurement

Scot lactometer

Secondary outcomes

1

Description

Blood Presure

Timepoint

30 minutes before every trainig session

Method of measurement

Aneroid blood pressure measurement

2

Description

Body Temperature

Timepoint

30 minutes before every training session

Method of measurement

Thermometer

Intervention groups

1

Description

The subjects in placebo group will intake 11 mg/kg/day maltodexterine for 2 weeks (11 sessions).

Category

Placebo

2

Description
The subjects in Q10 group will intake 5 mg/kg/day Q10 plus 6 mg/kg/day maltodexterine for 2 weeks (11 sessions).
Category
Treatment - Drugs

3

Description
The subjects in Caffeine group will intake 6 mg/kg/day caffeine plus 5 mg/kg/day maltodexterine for 2 weeks (11 sessions).
Category
Treatment - Drugs

4

Description
The subjects in CaQ10 group will intake 6 mg/kg/day Caffeine plus 5 mg/kg/day Q10 for 2 weeks (11 sessions).
Category
Treatment - Drugs

Recruitment centers

1

Recruitment center
Name of recruitment center
Athletics Board of Tabriz Fitness
Full name of responsible person
Dr. Afshar Jafari
Street address
City
Tabriz

Sponsors / Funding sources

1

Sponsor
Name of organization / entity
University of Tabriz
Full name of responsible person
Dr. Rasoul Mohammad Rezaei
Street address
University of Tabriz
City
Tabriz
Grant name
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

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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