

Clinical Trial Protocol

Iranian Registry of Clinical Trials

17 Sep 2026

The Effects of Selenium Supplementation on Anabolic Catabolic Ratio and Malondialdehyde in Athletes at Rest and after Exhaustive Exercise

Protocol summary

Summary

Objectives: Increased testosterone to cortisol ratio can have beneficial effects on body to combat stress improvement stamina and reduce fatigue. Among dietary antioxidants, selenium is one of the most important antioxidants. The effects of selenium supplementation on levels of testosterone, cortisol and testosterone to cortisol ratio of cyclist at rest and after exhaustive exercise, in relation to malondialdehyde are investigated in this study. Design, Setting and Conduct: The study included 8 male road cyclists. All subjects were supplemented with oral selenium selenite (200 µg/ d) for 4 weeks along with their normal diet. serum cortisol, testosterone, testosterone to cortisol ratio and malondialdehyde levels of subjects were determined at rest and exhausting, before and after selenium supplementation. Inclusions criteria: Having 3-4 years of exercise experience; the absence of any disease in the past month such as cold; respiratory infection; Hungarian; and fever; the subjects hadn't ingested any type of sport or vitamin-mineral supplements. Exclusions criteria; the consuming of sport or vitamin-mineral supplements; the use of alcohol and caffeine 48 hours before the test; participate in heavy exercise 48 hours before the test; exposure to disease. Intervention: Selenium supplementation and one bout of exhaustive exercise. Main Outcome Measures Variables: Free Testosterone, Cortisol, Malondialdehyde .

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT201110127754N2**

Registration date: **2011-10-29, 1390/08/07**

Registration timing: **retrospective**

Last update:

Update count: **0**

Registration date

2011-10-29, 1390/08/07

Registrant information

Name

Leila Shafiei Neek

Name of organization / entity

Faculty of Physical Education and Sport Sciences,
University of Tehran

Country

Iran (Islamic Republic of)

Phone

+98 21 2258 9952

Email address

shafieineek@ut.ac.ir

Recruitment status

Recruitment complete

Funding source

Investigator

Expected recruitment start date

2010-06-07, 1389/03/17

Expected recruitment end date

2010-08-21, 1389/05/30

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

The Effects of Selenium Supplementation on Anabolic Catabolic Ratio and Malondialdehyde in Athletes at Rest and after Exhaustive Exercise

Public title

Sport Nutrition

Purpose

Basic science

Inclusion/Exclusion criteria

Inclusions criteria; Having 3-4 years of exercise experience; the absence of any disease in the past month such as to cold; respiratory infection; Hungarian; and fever; the subjects hadn't ingested any type of sport or vitamin-mineral supplements. Exclusions criteria; the consuming of sport or vitamin-mineral supplements; the use of alcohol and caffeine 48 hours before the test; participate in heavy exercise 48 hours before the test; exposure to disease.

Age

From **20 years** old to **30 years** old

Gender

Male

Phase

2-3

Groups that have been masked

No information

Sample size

Target sample size: **8**

Randomization (investigator's opinion)

N/A

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

Ethics Committee of Tehran University, Department of Physical Education.

Street address

Faculty of Physical Education and Sport Science of Tehran University, Northern Kargar Ave, Tehran, Iran.

City

Tehran

Postal code

Approval date

2010-05-26, 1389/03/05

Ethics committee reference number

20

Health conditions studied

1

Description of health condition studied

subjects were Healthy

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description

serum cortisol

Timepoint

before and after exhaustive exercise

Method of measurement

by Radioimmunoassay and Immunotech Kit

2

Description

Malondialdehyde

Timepoint

before and after exhaustive exercise

Method of measurement

by Spectrophotometry

Secondary outcomes

1

Description

no

Timepoint

no

Method of measurement

no

Intervention groups

1

Description

Placebo=200 micro gram dextrose

Category

Other

2

Description

selenium supplementation= 200 microgram as selenium selenite

Category

Other

Recruitment centers

1

Recruitment center

Name of recruitment center

Tehran City Cycling Traffic team

Full name of responsible person

Leila Shafiei Neek

Street address

City
Teharn

Phone
+98 912 447 1624

Fax

Email
shafieineek@ut.ac.ir

Web page address

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Investigator

Full name of responsible person

Leila Shafiei Neek

Street address

Faculty of Physical Education and Sport Sciences,
University of Tehran, Northern Kargar Ave

City

Tehran

Grant name

Grant code / Reference number

Is the source of funding the same sponsor organization/entity?

Yes

Title of funding source

Investigator

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

Name of organization / entity

Faculty of Physical Education and Sport Science

Full name of responsible person

Leila Shafiei Neek

Position

M.D

Other areas of specialty/work

Street address

Faculty of Physical Education and Sport Science of
Tehran University, Northern Kargar Ave, Tehran, Iran.

City

Tehran

Postal code

Person responsible for scientific inquiries

Contact

Name of organization / entity

Faculty of Physical Education and Sport Science

Full name of responsible person

Leila Shafiei Neek

Position

M.D

Other areas of specialty/work

Street address

Faculty of Physical Education and Sport Science of
Tehran University, Northern Kargar Ave, Tehran, Iran.

City

Tehran

Postal code

Phone

+98 912 447 1624

Fax

Email

shafieineek@ut.ac.ir

Web page address

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