Clinical Trial Protocol
Iranian Registry of Clinical Trials

27 Jun 2026

Consumption effects of conjugated linoleic acid (CLA) supplementation on oxidative stress and matrix metaloproteinases after exhaustive training in young healthy males men

Protocol summary

Summary

Objectives: Conjugated linoleic acid (CLA) has anti-inflammatory, antioxidant, anticancer, anti-atherosclerosis, immune system improvement properties, and change of lipid metabolism. Therefore, it can play an important role in decrease of inflammation and increases body's antioxidant defenses. The aim of this study is investigation of consumption effect of CLA supplementation on oxidative stress and matrix metaloproteinases (MMPs) in young healthy men. Design: 30 healthy males with moderate physical activity will be selected into two groups (15 controls and 15 tests) at 18-30 years old. About 5.6 g CLA and 5.6 g oral paraffin supplementation will be given to test and control groups for 14 days, respectively. Exhaustive exercise session will be given to both groups at the end of 15th day. Setting and Conduct: Fasting blood samples will be taken for measurement of biochemical factors for both groups at the starting, before and after exhaustive exercise. Participants including major eligibility criteria: Young healthy males with moderate physical activity in 18-30 years old. Participants including major eligibility criteria: Individuals with certain diseases, smoking, alcoholism and other supplements, having certain dietary, professional training, sedentary and having 25<BMI<18.5 (body mass index) Kg/m2; Intervention: Conjugated linoleic acid (CLA) will be used for intervention. Variables: Superoxide dismutase, Glutathione peroxidase, Malondialdehyde, Interlukine-6, Tumor necrosis factor-alpha, Matrix metalloproteinase-2, Matrix metalloproteinase-9, High- sensitive C-reactive protein and other parameters.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT201201035144N3**
Registration date: **2013-06-25, 1392/04/04**
Registration timing: **retrospective**

Last update:
Update count: **0**

Registration date

2013-06-25, 1392/04/04

Registrant information

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Name of organization / entity

Ardabil University of Medical Sciences

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Recruitment status

Recruitment complete

Funding source

Vice Chancellor for Research, Ardabil University of Medical Sciences, Daneshgah Avenue, Ardabil, Iran.

Expected recruitment start date

2013-02-18, 1391/11/30

Expected recruitment end date

2013-03-18, 1391/12/28

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Consumption effects of conjugated linoleic acid (CLA) supplementation on oxidative stress and matrix metaloproteinases after exhaustive training in young healthy males men

Public title
Consumption effects of conjugated linoleic acid (CLA) supplementation on oxidative stress and matrix metaloproteinases following exercise in young healthy males

Purpose
Basic scienece

Inclusion/Exclusion criteria
Inclusion criteria: Young healthy males with moderate physical activity in 18-30 years old. Exclusion criteria: Individuals with certain diseases, smoking, alcoholism and other supplements, having certain dietary, professional training, sedentary and having 25<BMI<18.5 (body mass index)Kg/m2.

Age
From **18 years** old to **30 years** old

Gender
Male

Phase
2-3

Groups that have been masked
No information

Sample size
Target sample size: **30**

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
Ethic Committee of Ardabil University of Medical Sciences

Street address
Ethic Committee of Ardabil University of Medical Sciences, Vice Chancellor for Research, Ardabil University of Medical Sciences, Ardabil University of Medical Sciences, Daneshgah Avenue, Ardabil, Iran

City
Ardabil

Postal code
5318985991

Approval date
2013-02-18, 1391/11/30

Ethics committee reference number
9102/5

Health conditions studied

1

Description of health condition studied
Healthy trained individuals

ICD-10 code
Z02.5

ICD-10 code description
Examination for participation in sport

Primary outcomes

1

Description
Exhaustion time

Timepoint
At the end of once training

Method of measurement
The signs and symptoms related to the complete exhaustion

Secondary outcomes

1

Description
Oral Paraffin

Timepoint
Two week

Method of measurement
Gram

2

Description
Height

Timepoint
At the beginning of intervention

Method of measurement
Stadiometers

3

Description
Weight

Timepoint
At the beginning of intervention

Method of measurement
Digital scales

4

Description
Malondialdehyde

Timepoint

At the beginning of intervention, previous and after of exercise

Method of measurement

Spectrophotometry

5

Description

Total antioxidant capacity

Timepoint

At the beginning of intervention, previous and after of exercise

Method of measurement

Spectrophotometry

6

Description

Superoxide dismutase

Timepoint

At the beginning of intervention, previous and after of exercise

Method of measurement

Spectrophotometry

7

Description

Glutathione peroxidase

Timepoint

At the beginning of intervention, previous and after of exercise

Method of measurement

Spectrophotometry

8

Description

Ascorbic acid

Timepoint

At the beginning of intervention, previous and after of exercise

Method of measurement

Spectrophotometry

9

Description

Catalase

Timepoint

At the beginning of intervention, previous and after of exercise

Method of measurement

Spectrophotometry

10

Description

Matrix metalloproteinase-2

Timepoint

At the beginning of intervention, previous and after of exercise

Method of measurement

ELISA

11

Description

Matrix metalloproteinase-9

Timepoint

At the beginning of intervention, previous and after of exercise

Method of measurement

ELISA

12

Description

Interlukine-6

Timepoint

At the beginning of intervention, previous and after of exercise

Method of measurement

ELISA

13

Description

Tumor Necrosis factor-alpha

Timepoint

At the beginning of intervention, previous and after of exercise

Method of measurement

ELISA

14

Description

hs-CRP

Timepoint

At the beginning of intervention, previous and after of exercise

Method of measurement

Immunoturbidimetry

15

Description

Paraoxonase-1

Timepoint

At the beginning of intervention, previous and after of exercise

Method of measurement

Spectrophotometry

16

Description

Fasting blood suger

Timepoint

At the beginning of intervention, previous and after of exercise

Method of measurement

Spectrophotometry

17

Description
Arylesterase (ARE)
Timepoint
At the beginning of intervention, previous and after of exercise
Method of measurement
Spectrophotometry

18

Description
HDL-Cholesterol
Timepoint
At the beginning of intervention, previous and after of exercise
Method of measurement
Spectrophotometry

19

Description
LDL-Cholesterol
Timepoint
At the beginning of intervention, previous and after of exercise
Method of measurement
Spectrophotometry

20

Description
Triglyceride
Timepoint
At the beginning of intervention, previous and after of exercise
Method of measurement
Spectrophotometry

21

Description
Urea
Timepoint
At the beginning of intervention, previous and after of exercise
Method of measurement
Spectrophotometry

22

Description
Creatinine
Timepoint
At the beginning of intervention, previous and after of exercise
Method of measurement
Spectrophotometry

23

Description
Uric acid
Timepoint
At the beginning of intervention, previous and after exercise
Method of measurement
Spectrophotometry

24

Description
Bilirubin
Timepoint
At the beginning of intervention, previous and after of exercise
Method of measurement
Spectrophotometry

25

Description
Calcium
Timepoint
At the beginning of intervention, previous and after exercise
Method of measurement
Spectrophotometry

26

Description
Complete blood count, hemoglobin and hematocrit
Timepoint
At the beginning of intervention, previous and after exercise
Method of measurement
Cell counter

27

Description
Copper
Timepoint
At the beginning of intervention, previous and after exercise
Method of measurement
Atomic absorptions spectrophotometry

28

Description
Zinc
Timepoint
At the beginning of intervention, previous and after exercise
Method of measurement
atomic absorption spectrophotometry

29

Description
Iron (Fe)
Timepoint
At the beginning of intervention, previous and after exercise

Method of measurement
Spectrophotometry

30

Description
Magnesium(Mg)
Timepoint
At the beginning of intervention, previous and after exercise
Method of measurement
spectrophotometry

31

Description
Ceruloplasmin(Cp)
Timepoint
At the beginning of intervention, previous and after exercise
Method of measurement
Spectrophotometry

32

Description
Phosphorus
Timepoint
At the beginning of intervention, previous and after of exercise
Method of measurement
Spectrophotometry

33

Description
Leptin
Timepoint
At the beginning of intervention, previous and after of exercise
Method of measurement
ELISA

34

Description
Total Cholesterol
Timepoint
At the beginning of intervention, previous and after of exercise
Method of measurement
Spectrophotometry

35

Description
Total protein
Timepoint
At the beginning of intervention, previous and after of exercise
Method of measurement
Spectrophotometry

36

Description
Creatine phosphokinase(CK)
Timepoint
At the beginning of intervention, previous and after of exercise
Method of measurement
Spectrophotometry

37

Description
Parathormone(PTH)
Timepoint
At the beginning of intervention, previous and after exercise
Method of measurement
ELISA

Intervention groups

1

Description
Given 5.6 gram/day CLA for14 days and once exhaustive exercise for intervention group.
Category
Other

2

Description
Giving 5.6 gram oral Paraffin to control group for 14 days and once exhausting exercise
Category
Placebo

Recruitment centers

1

Recruitment center
Name of recruitment center
Ardabil University of Medical Sciences
Full name of responsible person
Seyedyashar Alamolhoda
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Ardabil

Sponsors / Funding sources

1

Sponsor
Name of organization / entity
Vice Chancellor for Research Ardabil University of Medical Sciences

Full name of responsible person
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City
Ardabil
Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
Yes
Title of funding source
Vice Chancellor for Research Ardabil University of Medical Sciences
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