

Clinical Trial Protocol

Iranian Registry of Clinical Trials

16 Sep 2026

Consumption effects of conjugated linoleic acid (CLA) supplementation on oxidative stress and matrix metalloproteinases 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 metalloproteinases (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 $25 < \text{BMI} < 18.5$ (body mass index) Kg/m^2 ; 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

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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 metalloproteinases after exhaustive training in young healthy males men	
Public title	Consumption effects of conjugated linoleic acid (CLA) supplementation on oxidative stress and matrix metalloproteinases following exercise in young healthy males
Purpose	Basic science
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	
<u>1</u>	
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	
<u>1</u>	
Description of health condition studied	Healthy trained individuals
ICD-10 code	Z02.5
ICD-10 code description	Examination for participation in sport
Primary outcomes	
<u>1</u>	
Description	Exhaustion time
Timepoint	At the end of once training
Method of measurement	The signs and symptoms related to the complete exhaustion
Secondary outcomes	
<u>1</u>	
Description	Oral Paraffin
Timepoint	Two week
Method of measurement	Gram
<u>2</u>	
Description	Height
Timepoint	At the beginning of intervention
Method of measurement	Stadiometers
<u>3</u>	
Description	Weight
Timepoint	At the beginning of intervention
Method of measurement	Digital scales
<u>4</u>	
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 sugar
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

Sedyashar Alamolhoda

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Biochemistry Dept, Faculty of Medicine, Ardabil University of Medical Sciences, Daneshgah Avenue, Ardabil, Iran.

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Sponsors / Funding sources**1****Sponsor****Name of organization / entity**

Vice Chancellor for Research Ardabil University of Medical Sciences

Full name of responsible person

Hadi Peeri

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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****Contact****Name of organization / entity**

Ardabil University of Medical Sciences

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Web page address<http://www.arums.ac.ir>**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