Clinical Trial Protocol
Iranian Registry of Clinical Trials

17 Sep 2026

Acute effect of circuit training on blood hematological factors and Hepcidin before and after 12 weeks compound set training in active male

Protocol summary

Study aim
The purpose of this study will be determination of the acute effect of circuit exercise on hematological indices and blood hepcidin before and after twelve weeks of compound set training in active men

Design
Twenty healthy resistance trained men will be randomly divided into two 10 people in experimental and control groups

Settings and conduct
The exercises and blood sampling are done in the gym by an experienced trainer and by the nurse respectively.Subjects perform a circular training session before and after 12 weeks of resistance compound set training and blood sampling is taken before and after this one session.

Participants/Inclusion and exclusion criteria
Subjects are resistance trained men who have no cardiovascular and musculoskeletal diseases

Intervention groups
The experimental group will perform a circular exercise session. 48 hours after this session, the 12-week training period begins and ends. They then repeat the circular exercise. The control group will perform the same circular exercise before and after 12 weeks as the experimental group but with no exercise in these 12 weeks.

Main outcome variables
Hepcidin; Fe; Ferritin; red blood cells; white blood cells; Platelet; hemoglobin

General information

Reason for update

Acronym

IRCT registration information
IRCT registration number: **IRCT20190927044893N1**
Registration date: **2020-03-22, 1399/01/03**
Registration timing: **retrospective**
Last update: **2020-03-22, 1399/01/03**
Update count: **0**

Registration date
2020-03-22, 1399/01/03

Registrant information

Name
Roghayyeh Afroundeh

Name of organization / entity
University of Mohaghegh Ardabili

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Iran (Islamic Republic of)

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Recruitment status
Recruitment complete

Funding source

Expected recruitment start date
2019-08-23, 1398/06/01

Expected recruitment end date
2019-11-21, 1398/08/30

Actual recruitment start date
empty

Actual recruitment end date
empty

Trial completion date
empty

Scientific title
Acute effect of circuit training on blood hematological factors and Hepcidin before and after 12 weeks compound set training in active male

Public title
Effect of one session and a period of resistance training on blood hematological factors

Purpose
Basic scienece

Inclusion/Exclusion criteria

Inclusion criteria:

resistance trained male

Exclusion criteria:

having any musculoskeletal injuries using any drugs or supplements Levels of blood variables such as iron, ferritin and hepcidin in abnormal range

Age

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

Gender

Male

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **20**

Randomization (investigator's opinion)

Randomized

Randomization description

The random number table will be used for simple randomization to assign subjects to the group. To use Random Number Tables, the researcher must first determine direction for reading numbers in table (for example, up, down, left or right).The second step for researcher is considering numbers for different groups (eg, even numbers for intervention A and odd numbers for intervention B).The researcher then selects one number and moves in one of the predetermined directions, records the numbers and assigning them to different groups.

Blinding (investigator's opinion)

Not blinded

Blinding description

Placebo

Not used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Ethics committee of Ardabil University of Medical Sciences

Street address

Ardabil, University of Mohaghegh Ardabili, Department of sport science

City

Ardabil

Province

Ardabil

Postal code

5619911367

Approval date

2019-07-21, 1398/04/30

Ethics committee reference number

IR.ARUMS.REC.1398.197

Health conditions studied

1

Description of health condition studied

iron metabolism in athletes

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description

Hepcidin

Timepoint

pre and post of the circular exercise before the 12 weeks of compounding exercise and again pre and post of the circular exercise after completing the 12 weeks of compounding exercise

Method of measurement

Hepcidin by Elisa reader

2

Description

Fe

Timepoint

pre and post of the circular exercise before the 12 weeks of compounding exercise and again pre and post of the circular exercise after completing the 12 weeks of compounding exercise

Method of measurement

Fe by auto analyzer

3

Description

Ferritin

Timepoint

pre and post of the circular exercise before the 12 weeks of compounding exercise and again pre and post of the circular exercise after completing the 12 weeks of compounding exercise

Method of measurement

Ferritin by Gama counter

4

Description

Blood cells count

Timepoint

pre and post of the circular exercise before the 12 weeks of compounding exercise and again pre and post of the circular exercise after completing the 12 weeks of compounding exercise

Method of measurement

Automated cell counter

5

Description
Hemoglobin
Timepoint
pre and post of the circular exercise before the 12 weeks of compounding exercise and again pre and post of the circular exercise after completing the 12 weeks of compounding exercise
Method of measurement
Auto cell counter

Secondary outcomes

empty

Intervention groups

1

Description
Intervention group: Subjects in this group will perform one circuit training session consisting of 10 resistance training stations with 40 to 60% of one maximal repetition. Then they will participate in a 12 weeks of resistance compound set training protocol. After this period, they will repeat a circuit training session.
Category
Diagnosis

2

Description
Control group: Subjects in this group will perform one circuit training session consisting of 10 resistance training stations with 40 to 60% of one maximal repetition. they will not participate in any activity during 12 weeks and after this period they will repeat a circuit training session.
Category
Diagnosis

Recruitment centers

1

Recruitment center
Name of recruitment center
University of Mohaghegh Ardabili
Full name of responsible person
Roghayyeh Afroundeh
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Sponsors / Funding sources

1

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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
University of Mohaghegh Ardabili
Proportion provided by this source
50
Public or private sector
Public
Domestic or foreign origin
Domestic
Category of foreign source of funding
empty
Country of origin
Type of organization providing the funding
Academic

Person responsible for general inquiries

Contact
Name of organization / entity
University of Mohaghegh Ardabili
Full name of responsible person
Roghayyeh Afroundeh
Position
Faculty member
Latest degree
Ph.D.
Other areas of specialty/work
exercise physiology
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Person responsible for updating data

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Sharing plan

Deidentified Individual Participant Data Set (IPD)
Yes - There is a plan to make this available
Study Protocol
Yes - There is a plan to make this available
Statistical Analysis Plan
No - There is not a plan to make this available
Informed Consent Form
Yes - There is a plan to make this available
Clinical Study Report
Yes - There is a plan to make this available
Analytic Code
No - There is not a plan to make this available
Data Dictionary
No - There is not a plan to make this available
Title and more details about the data/document
There is possibility to share results and statistical information
When the data will become available and for how long
Start of access period 4 months after the results
To whom data/document is available
Academic Researchers and sport coaches
Under which criteria data/document could be used
For use in projects and sports fields
From where data/document is obtainable
Roghayyeh Afroundeh, afroundeh@gmail.com, 0989141532136
What processes are involved for a request to access data/document
by email
Comments