Clinical Trial Protocol
Iranian Registry of Clinical Trials

17 Sep 2026

The effect of feeding state on some metabolic indices following a single bout of selected Crossfit and high intensity interval exercise in active females

Protocol summary

Study aim
The aim of this study is to survey the metabolic response to a single bout of high intensity interval and/or functional exercise in fasting and feeding.

Design
Randomised parallel clinical trial with control group, not blinded

Settings and conduct
Trial location: Faculty of physical education, University of Guilan Subjects will be asked to complete a 72 h food record before the trail session and avoid to consume caffeine. In the test day, fed groups will have the regular breakfast and others will stay fasted. 1 h later the participate even in HIIT or Crossfit exercise or nothing. Both protocol lasts 53 min and OMNI scale will be used for the intensity assessment. Right after the session completion, blood samples will be collected and transferred to the lab for analysis.

Participants/Inclusion and exclusion criteria
Female physical education students who are dorm resident, 17-20 years old, healthy, no drug and supplement consumption

Intervention groups
fasted and fed groups that each group will be divided in 3 subgroups: high intensity interval training, Crossfit training and control

Main outcome variables
Lactate, PDK, CPT-1, UFFA and glucose will be measured

General information

Reason for update

Acronym

IRCT registration information
IRCT registration number: **IRCT20190213042702N1**
Registration date: **2019-09-15, 1398/06/24**
Registration timing: **retrospective**
Last update: **2019-09-15, 1398/06/24**
Update count: **0**

Registration date
2019-09-15, 1398/06/24

Registrant information

Name
Maryam Ebrahimi

Name of organization / entity
Faculty of physical education and sport sciences, University of Guilan

Country
Iran (Islamic Republic of)

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Recruitment status
Recruitment complete

Funding source

Expected recruitment start date
2019-04-20, 1398/01/31

Expected recruitment end date
2019-04-24, 1398/02/04

Actual recruitment start date
empty

Actual recruitment end date
empty

Trial completion date
empty

Scientific title
The effect of feeding state on some metabolic indices following a single bout of selected Crossfit and high intensity interval exercise in active females

Public title
Effect of feeding state on exercise metabolism

Purpose
Basic scienece
Inclusion/Exclusion criteria
Inclusion criteria:
Physical education students Dorm resident
Exclusion criteria:
Metabolic disorders BMI more than 27 or less than 19
Abnormal PAR-Q Questionnaire musculoskeletal injuries
Drug or sport supplements consumption Menstrual cycle
Age
From **17 years** old to **20 years** old
Gender
Female

Phase
N/A
Groups that have been masked
No information
Sample size
Target sample size: **36**
Randomization (investigator's opinion)
Randomized
Randomization description
Simple
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 Guilan University of medical sciences
Street address
Deputy of research and technology, Siadati St, Namjoo St, Rasht/Iran
City
Rasht
Province
Guilan
Postal code
4199843653
Approval date
2019-03-15, 1397/12/24
Ethics committee reference number
IR.GUMS.REC.1398.002

Health conditions studied

1

Description of health condition studied
Healthy
ICD-10 code
ICD-10 code description

Primary outcomes

1

Description
PDK
Timepoint
Right after the exercise session
Method of measurement
ELISA

Secondary outcomes

empty

Intervention groups

1

Description
Control group: fasted untrained subjects
Category
Treatment - Other

2

Description
Intervention group 1: fed untrained subjects
Category
Treatment - Other

3

Description
Intervention group 2: 20 minutes of Crossfit exercise including 3 sections, Cardio, Gymnastics and resistance training in fasting state
Category
Treatment - Other

4

Description
Intervention group 3: 20 minutes of Crossfit exercise including 3 sections, Cardio, Gymnastics and resistance training in fed state
Category
Treatment - Other

5

Description
Intervention group 4: 20 minutes of HIIT including 1 min running and 4 min rest periods in fasting state
Category
Treatment - Other

6

Description
Intervention group 5: 20 minutes of HIIT including 1 min running and 4 min rest periods in fed state
Category
Treatment - Other

Recruitment centers

1

Recruitment center
Name of recruitment center
Faculty of physical education and sport sciences
Full name of responsible person
Maryam Ebrahimi
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Sponsors / Funding sources

1

Sponsor
Name of organization / entity
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Full name of responsible person
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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 Guilan
Proportion provided by this source
100
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 Guilan, Faculty of physical education and sport sciences
Full name of responsible person
Maryam Ebrahimi
Position
Assistant professor
Latest degree
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Other areas of specialty/work
Exercise biochemistry and metabolism
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Person responsible for updating data

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Sharing plan

Deidentified Individual Participant Data Set (IPD)
No - There is not a plan to make this available
Justification/reason for indecision/not sharing IPD
There is no further information
Study Protocol
No - There is not a plan to make this available
Statistical Analysis Plan
No - There is not a plan to make this available
Informed Consent Form
No - There is not a plan to make this available
Clinical Study Report
No - There is not 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