Clinical Trial Protocol
Iranian Registry of Clinical Trials

18 Sep 2026

Comparing the effect of eight-weeks parallel exercise (submaximal interval and continuous) and HIT swimming training on Omentin-1, Chemerin serum level and VO2max in young men with overweight

Protocol summary

Summary

The purpose of the present study was to compare the effect of 8 weeks of parallel training (continuous and interval sub-maximal) and high-intensity swimming exercises on changes in serum levels of omentin-1, chamarin and maximum oxygen uptake in overweight young men. The sample population included 24 male subjects with 18 and 18 years old, with a body mass index greater than 25. Inclusion criteria included: having a body mass index of over 25 who was exposed to overweight and obesity; have capability to perform chest crawl swimming (without a history of championship); ability to perform exercise protocols. Exclusion criteria include: having a history of cardiovascular disease; high blood pressure; diabetes; kidney and liver disease; addiction to any drug; smoking; alcohol and hookah consumption; consuming any type of drug. Group A performed 8 weeks of swimming training with a 60% to 67% heart rate, and group (B) performed 8 weeks of swimming training, which included severe swimming, with an intensity of 80% to 90% of maximum heart rate. Before exercise and 24 hours after 8 weeks of exercise, 5 cc of blood was taken from the median vein of the subjects and the amentin-1 and chamarin blood levels; body weight, body mass index, waist to hip ratio, fat percentage and maximum Oxygen consumption was measured.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT2017090823612N1**
Registration date: **2017-11-14, 1396/08/23**
Registration timing: **retrospective**

Last update:
Update count: **0**

Registration date

2017-11-14, 1396/08/23

Registrant information

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Recruitment status

Recruitment complete

Funding source

BU-Ali Sina University

Expected recruitment start date

2016-06-16, 1395/03/27

Expected recruitment end date

2016-07-20, 1395/04/30

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Comparing the effect of eight-weeks parallel exercise (submaximal interval and continuous) and HIT swimming training on Omentin-1, Chemerin serum level and VO2max in young men with overweight

Public title

The effect of swimming exercises on overweight indexes

Purpose
Health service research
Inclusion/Exclusion criteria
Inclusion criteria: Body mass index of over 25 who were exposed to overweight and obesity; have capability to perform chest crawl swimming (without a history of championship); ability to perform exercise protocols.
Exclusion criteria: Have history of cardiovascular disease; High blood pressure; diabetes; kidney and liver disease; addiction to any drug; smoking; alcohol and hookah consumption; use of any type of drug.
Age
From **18 years** old to **24 years** old
Gender
Male

Phase
N/A
Groups that have been masked
No information
Sample size
Target sample size: **24**
Randomization (investigator's opinion)
Randomized
Randomization description
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
Hamedan University of Medical Sciences
Street address
Hamadan University of Medical Sciences, Research & Technology Department, Ethics Committee for Research, Shahid Fahmideh Blvd,
City
Hamedan
Postal code
65178
Approval date
2016-06-16, 1395/03/27
Ethics committee reference number
IR.UMSHA.REC.1395.141

Health conditions studied

1

Description of health condition studied
overweight
ICD-10 code
E66.9
ICD-10 code description
Obesity, unspecified

Primary outcomes

1

Description
Omentin-1
Timepoint
One day before the swim, eight-week swimming training, 24 hours after swim practice
Method of measurement
After taking some blood samples from the volunteers by the centrifuge (about 20 minutes with 3000 rounds in a minutes). The Omentin–1 measured based on the Elisa method with the Omentin–1 kits with 1.03 Nano gram sensitivity level on Liter. This experimental equipments is an American – Chines products from the Hangzhou Eastbiopharm production. Of course the results findings was measured by Austrian Autoanalysor of Anthous 2020,

2

Description
Chamerin
Timepoint
One day before the swim, eight-week swimming training, 24 hours after swim practice
Method of measurement
Chamerin compound was measured based on the Elisa method with the human kits of a Chinese company of Cusa Biotech, Wuhan, China.

Secondary outcomes

1

Description
Height
Timepoint
One day before the beginning of training and 24 hours after training
Method of measurement
Measuring the height was done based on the SECA model of Germany with 1 mm sensitivity scale.

2

Description
weight
Timepoint
One day before the beginning of training and 24 hours after training
Method of measurement
The weight scale was done based on the digital ws 80

made of Switzerland. The weight measured based on the kilogram by the 0/1 kilogram accuracy level.

3

Description
BMI
Timepoint
One day before the beginning of training and 24 hours after training
Method of measurement
The volunteers BMI scale was taken from the dividing the body weight (kg) upon the height square (m).

4

Description
body fat percentage
Timepoint
One day before the beginning of training and 24 hours after training
Method of measurement
The Lipids level of the volunteers measured from calculating the under skin Lipid in the chest , abdominal and crurul body parts by using the Caliper la fight made of Germany. Then the mental statues of these volunteers measured by using the nomogram (1981).

5

Description
maximum oxygen usage
Timepoint
One day before the beginning of training and 24 hours after training
Method of measurement
Estimating the maximum oxygen usage of the volunteers based on the hypothesis of direct relation of the heat beats and the oxygen usage. The UMCA Ergometer below maximum protocol used indirectly. This protocol performed based on the Monark Bicycle Ergometer of E894 model.

Intervention groups

1

Description
The control group performed only their daily activities.
Category
Lifestyle

2

Description
The exercising timetable for about 8 weeks performed in a 45 to 60 minutes sessions in every 3 days a week. Continuous periods parallel exercises below the maximum: The group A exercised 60% to 67% heart beat (HRR). The researcher done that by determining the volunteers heartbeat by using the polar Beaconometer for controllable exercise intensity. The first level of this group is continuous and in other group all the exercises performed based on the rest time break. About 100 meter were added to the exercise scales for performing the additional and original exercises. The HIT swimming practices:
Category
Lifestyle

3

Description
The group B performed the aerobics exercises by the high intensity pressure which composed of hard trudgen strokes by the difficult rest time break. Their rest time are more than the below the maximum exercises with the maximum heart beats about 80 % to 90%.
Category
Lifestyle

Recruitment centers

1

Recruitment center
Name of recruitment center
Bu-Ali Sina University
Full name of responsible person
Mohammad Ali Samavati Sharif, Associate professor of sports physiology
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Sponsors / Funding sources

1

Sponsor
Name of organization / entity
Bu-Ali Sina University
Full name of responsible person
Dr Gholam Hossein Majzoobi
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Hamedan Chaharbagh shahid Ahmadi Roshan Bu-Ali Sina University Research Deputy
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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
Bu-Ali Sina University
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

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Position

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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