Clinical Trial Protocol
Iranian Registry of Clinical Trials

10 Nov 2026

Effects of aerobic, resistance and concurrent training on Irisin, Myostatin, blood lipids, glucose homeostasis, Physical fitness and body composition in Inactive girls

Protocol summary

Summary

The purpose of this study is to evaluate the effects of three modes of training on serum level of irisin, myostatin, blood lipids, glucose homeostasis, physical fitness and body composition after 8 weeks of training in young girls. Inclusions criteria consist of 20-35 years normal and overweight inactivate girls and exclusion criteria will be include of absence for four sessions. In line with this, through the students of a faculty of Islamic Azad University of Rasht, 40 girls will be select and randomly assign into four groups and each group consist of 10 persons including: control, aerobic training, resistance training and concurrent training (aerobic-resistance). Subjects in the all training groups do exercise 3 times per week according to recommendations of American college of sport medicine. Fasting blood sample will be taken before and 24 hour after last training session, to evaluate Serum level of irisin, myostatin, blood lipids and glucose homeostasis concentration. Also, Subject's physical fitness and body composition will be measured before and after the end of training period. The study duration will be 8 weeks and it seems that doing an aerobic, resistance or concurrent training, all can be effective on circulating irisin and myostatin levels, but the effect size will be different in the various types of training.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT2016123125449N2**
Registration date: **2017-01-24, 1395/11/05**
Registration timing: **retrospective**

Last update:
Update count: **0**

Registration date

2017-01-24, 1395/11/05

Registrant information

Name
Fatemeh Izaddoust
Name of organization / entity
Islamic Azad University Rasht Branch
Country
Iran (Islamic Republic of)
Phone
-
Email address
izaddoust@iaurasht.ac.ir

Recruitment status

Recruitment complete

Funding source

personality, Researcher

Expected recruitment start date

2015-12-22, 1394/10/01

Expected recruitment end date

2016-03-15, 1394/12/25

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Effects of aerobic, resistance and concurrent training on Irisin, Myostatin, blood lipids, glucose homeostasis, Physical fitness and body composition in Inactive girls

Public title

The effect of exercise training on myokines and blood lipids

Purpose

Other

Inclusion/Exclusion criteria

Inclusion criteria: be girl; aged of 20-35 years; not have regular exercise training during last year; not have cardiovascular or orthopedic disease; have normal or overweight Exclusion criteria: absence for four sessions

Age

From **20 years** old to **35 years** old

Gender

Female

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **40**

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

Islamic Azad University Rasht Branch

Street address

Islamic Azad University Rasht Branch, Taleshan Bridge, Rasht

City

Rasht

Postal code

Approval date

2016-08-10, 1395/05/20

Ethics committee reference number

IR.IAU.RASHT.REC.1395.3

Health conditions studied

1

Description of health condition studied

healthy Inactive normal or overweight girls

ICD-10 code

Z72.3

ICD-10 code description

Lack of physical exercise

Primary outcomes

1

Description

myostatin

Timepoint

Before intervention and 24 hours after last training session

Method of measurement

serum levels using immunoassay method (ng/l)

2

Description

Irisin

Timepoint

Before intervention and 24 hours after last training session

Method of measurement

serum levels using immunoassay method (µg/ml)

3

Description

Cholesterol

Timepoint

Before intervention and 24 hours after last training session

Method of measurement

serum levels using photometric method (mg/dl)

4

Description

Triglyceride

Timepoint

Before intervention and 24 hours after last training session

Method of measurement

serum levels using photometric method (mg/dl)

5

Description

LDL

Timepoint

Before intervention and 24 hours after last training session

Method of measurement

serum levels using enzymatic method (mg/dl)

6

Description

HDL

Timepoint

Before intervention and 24 hours after last training session

Method of measurement

serum levels using enzymatic method (mg/dl)

7

Description
Added at 2017-01-24: Insulin resistance
Timepoint
Added at 2017-01-24: before and after training period
Method of measurement
Added at 2017-01-24: using HOMA method

8

Description
Added at 2017-02-26: Insulin
Timepoint
Added at 2017-02-26: Before intervention and 24 hours after last training session
Method of measurement
Added at 2017-02-26: serum levels using immunoassay method (pmol/l)

9

Description
Added at 2017-02-26: Fast blood Sugar
Timepoint
Added at 2017-02-26: Before intervention and 24 hours after last training session
Method of measurement
Added at 2017-02-26: serum levels using photometric method (mg/dl)

Secondary outcomes

1

Description
VO2max
Timepoint
Before and after training period
Method of measurement
using Bruce Treadmill test (ml/kg/min)

2

Description
steight
Timepoint
Before and after training period
Method of measurement
using 1RM test (kg)

3

Description
Added at 2017-01-24: Body composition
Timepoint
Added at 2017-01-24: before and after training period
Method of measurement
Added at 2017-01-24: using body mass index and waist to hip ratio

Intervention groups

1

Description
control group Continued their usual activities
Category
Other

2

Description
Aerobic training 8 weeks, 3 sessions per week, each session 65 min (10 min warm up, 50 min aerobic training and 5 min cool down), using 65-75 Percent of maximum heart rate (220-age)
Category
Other

3

Description
resistance training 8 weeks, 3 sessions per week, each session 65 min (10 min warm up, 50 min resistance training, 5 min cool down), using 65-75 percent of 1RM, 2-4 set, 9 training, 8-12 repetition with 30-60 min rest interval between sets, 2-3 min between movments
Category
Other

4

Description
concurrent training 8 weeks, 3 sessions per week, each session 65 min (10 min warm up, 25 min resistance training, 25 min aerobic training and 5 min cool down)
Category
Other

Recruitment centers

1

Recruitment center
Name of recruitment center
Islamic Azad University Rasht branch
Full name of responsible person
Street address
City
Rasht

Sponsors / Funding sources

1

Sponsor
Name of organization / entity
Islamic Azad University Rasht Branch
Full name of responsible person
Fatemeh Izaddoust
Street address
Islamic Azad University Rasht Branch, Taleshan

Bredge

City

Rasht

Grant name

Grant code / Reference number

Is the source of funding the same sponsor organization/entity?

Yes

Title of funding source

Islamic Azad University Rasht Branch

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

Islamic Azad University Rasht Branch

Full name of responsible person

Fatemeh Izaddoust

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Other areas of specialty/work

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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