

Clinical Trial Protocol

Iranian Registry of Clinical Trials

03 Jul 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
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Fatemeh Izaddoust
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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