

Clinical Trial Protocol

Iranian Registry of Clinical Trials

02 Jul 2026

comparing effect of traditional continuous training and high intensity interval training on cardiac hypertrophic indexes, PI3k gene expression and cardiac function

Protocol summary

Summary

The aim of this study is to investigate possible heart hypertrophy, as a result of training (Traditional and HIT) based on the path defined for clinical observed (echocardiography), measuring proteins associated with hypertrophy (IGF-I and PI3K) as well as measuring gene expression in leukocytes p110 δ is the genomic level. Design Randomized controlled quasi-experimental study that was conducted on 36 students. inclusion criteria is male gender, and having age between 20-30years and being in the normal range of body mass index and exclusion criteria of the research history of professional sports as well as the current regular exercise, no smoking, no disease cardiovascular, pulmonary, metabolic and musculoskeletal as well as any injury that impair the implementation of physical activity.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT201603039460N2**

Registration date: **2016-03-31, 1395/01/12**

Registration timing: **retrospective**

Last update:

Update count: **0**

Registration date

2016-03-31, 1395/01/12

Registrant information

Name

Arash Saadatnia

Name of organization / entity

Shahid Beheshti university

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Iran (Islamic Republic of)

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+98 21 2990 2940

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a_saadatnia@sbu.ac.ir

Recruitment status

Recruitment complete

Funding source

Investigator

Expected recruitment start date

2014-09-21, 1393/06/30

Expected recruitment end date

2014-10-07, 1393/07/15

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

comparing effect of traditional continuous training and high intensity interval training on cardiac hypertrophic indexes, PI3k gene expression and cardiac function

Public title

comparing effect of traditional continuous training and high intensity interval training on cardiac morphology and function

Purpose

Prevention

Inclusion/Exclusion criteria

inclusion criteria include age between-30, male gender and being in BMI normal range. Exclusion criteria include professional athletics history as well as the current regular exercise, smoking, cardiovascular and metabolic disease or any complication that disrupt the implementation of exercise

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: **36**

Randomization (investigator's opinion)
Randomized

Randomization description

Blinding (investigator's opinion)
Not blinded

Blinding description

Placebo
Not used

Assignment
Parallel

Other design features
we use random numbers table to assigning subjects into three groups randomly

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Ethics committee of Ferdowsi University of Mashhad,
Mashhad, Iran

Street address

Azadi ave

City

mashhad

Postal code

978646342

Approval date

2013-09-21, 1392/06/30

Ethics committee reference number

19868

Health conditions studied

1

Description of health condition studied

healthy subjects which participate in physical activity

ICD-10 code

Z00.8

ICD-10 code description

Health examination in population surveys

Primary outcomes

1

Description

VO2max

Timepoint

pre intervention- post intervention

Method of measurement

Bruce treadmill test

2

Description

Stroke Volume

Timepoint

pre intervention- post intervention

Method of measurement

echocardiography

3

Description

ejection Fraction

Timepoint

pre intervention- post intervention

Method of measurement

echocardiography

4

Description

Left ventricle volume

Timepoint

pre intervention- post intervention

Method of measurement

echocardiography

5

Description

End of systolic volume

Timepoint

pre intervention- post intervention

Method of measurement

echocardiography

6

Description

End of diastolic volume

Timepoint

pre intervention- post intervention

Method of measurement

echocardiography

7

Description

inter ventricular septum

Timepoint

pre intervention- post intervention

Method of measurement

echocardiography

8

Description

plasma IGF-I levels

Timepoint

pre intervention- post intervention

Method of measurement

ELISA Kit

9

Description

PI3K activity

Timepoint

pre intervention- post intervention

Method of measurement

ELISA Kit

10

Description

p110δ Gene expression in leukocytes

Timepoint

pre intervention- post intervention

Method of measurement

PCR

Secondary outcomes

empty

Intervention groups

1

Description

Intervention 1: HIT group Exercises included warm up, HIT training, cool down. Subjects warmed up by stretching and easy walking for 5 minutes. The HIT interventions consisted of four 30 s maximal effort (“all-out”) shuttle run bouts (from cone-1 to cone-2 ,20 meter sweep) separated by 1.5 min passive rest each . HIT protocol began with 4 cycles/session and every two weeks added one cycle. Finally it was 8 cycles/session in tenth week that lasted 16 minutes. Cooling Down also included 5 min of walking and stretching. During the HIT interventions all subjects were vocally encouraged to maintain Maximal effort.

Category

Other

2

Description

Intervention 2: consists of 20 minutes of running continuously at heart rate of approximately 140 continuously that started three sessions per week for fourth weeks and gradually increased in tenth week to 40 minutes.

Category

Other

3

Description

control: Control group asked to be sedentary in this period.

Category

Other

Recruitment centers

1

Recruitment center

Name of recruitment center

Ferdowsi University of Mashhad

Full name of responsible person

Arash Saadatnia

Street address

Azadi ave

City

mashhad

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Shahid beheshti university

Full name of responsible person

Dr arsh saadatnia

Street address

velenjak

City

tehran

Grant name

Grant code / Reference number

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

Yes

Title of funding source

Shahid beheshti 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

Shahid Beheshti University

Full name of responsible person

arash saadatnia

Position

PHD

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