

Clinical Trial Protocol

Iranian Registry of Clinical Trials

08 Jul 2026

Comparison of the effect of resistance and aerobic training on the expression of microRNA-192 and serum levels of GLP-1, GABA, Pentraxin3 and HbA1c in children with type 1 diabetes

Protocol summary

Study aim

Evaluation of the effect of exercise training on effective biomarkers in type 1 diabetes

Design

The clinical trial consists of four groups of 15 volunteers to compare the effect of the two training methods.

Settings and conduct

Exercises will be done at home under the supervision of a exercise physiologist. At the beginning and end of the eight-week training period, blood samples and physiological measurements will be performed to evaluate the effect of exercise.

Participants/Inclusion and exclusion criteria

Having type 1 diabetes; Lack of regular exercise in the last year; No physical injury or limited mobility

Intervention groups

Regular exercise for eight weeks

Main outcome variables

Helping patients with type 1 diabetes recover by recognizing the beneficial effects of exercise

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20200326046861N2**

Registration date: **2022-05-14, 1401/02/24**

Registration timing: **prospective**

Last update: **2022-05-14, 1401/02/24**

Update count: **0**

Registration date

2022-05-14, 1401/02/24

Registrant information

Name

Vazgen Minasian

Name of organization / entity

University of Isfahan

Country

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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2022-07-06, 1401/04/15

Expected recruitment end date

2022-09-06, 1401/06/15

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Comparison of the effect of resistance and aerobic training on the expression of microRNA-192 and serum levels of GLP-1, GABA, Pentraxin3 and HbA1c in children with type 1 diabetes

Public title

Effect of exercise on some serum factors in children with type 1 diabetes

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria:

Type 1 diabetes at least one year after diagnosis

Exclusion criteria:

Diseases that prevent people from participating in exercising activities.

Age

To **18 years** old

Gender

Both

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **60**

Randomization (investigator's opinion)

Not 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

Ethics committee of Isfahan University

Street address

University of Isfahan, Azadi square, Isfahan

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Province

Isfahan

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8174673441

Approval date

2022-03-14, 1400/12/23

Ethics committee reference number

IR.UI.REC.1400.115

Health conditions studied

1

Description of health condition studied

type 1 diabetes

ICD-10 code

E08

ICD-10 code description

Diabetes mellitus due to underlying condition

Primary outcomes

1

Description

Investigation of changes in microRNA-192

Timepoint

Before and after the eight-week period of exercise

Method of measurement

PCR

2

Description

Evaluation of changes in GLP-1 protein in serum

Timepoint

Before and after the eight-week period of exercise

Method of measurement

ELISA

3

Description

Evaluation of changes in GABA protein in serum

Timepoint

Before and after the eight-week period of exercise

Method of measurement

ELISA

4

Description

Evaluation of changes in Pentraxin3 protein in serum

Timepoint

Before and after the eight-week period of exercise

Method of measurement

ELISA

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group 1: It consists of a group of 15 members with a resistance exercise protocol (exercises at home, with minimal exercise equipment and involving different muscle groups in the body) which is performed for 8 weeks and 3 days a week for 1 hour. Subjects will not use any medications or dietary supplements during the eight weeks of exercise other than the medications prescribed by their physician.

Category

Lifestyle

2

Description

Intervention group 2: It consists of a group of 15 members with aerobic exercise protocol (exercises at

home, with minimal exercise equipment) which is performed for 8 weeks and 3 days a week for 1 hour. Subjects will not use any medications or dietary supplements during the eight weeks of exercise other than the medications prescribed by their physician.

Category

Lifestyle

Recruitment centers**1****Recruitment center****Name of recruitment center**

Imam Hossien Children's Hospital

Full name of responsible person

Silva Hovsepian

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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 Isfahan

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 Isfahan

Full name of responsible person

Maryam Nazari

Position

Postdoctoral researcher

Latest degree

Ph.D.

Other areas of specialty/work

Physiology

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Sharing plan

Deidentified Individual Participant Data Set (IPD)

Yes - There is a plan to make this available

Study Protocol

Yes - There is a plan to make this available

Statistical Analysis Plan

Yes - There is a plan to make this available

Informed Consent Form

Yes - There is a plan to make this available

Clinical Study Report

Yes - There is a plan to make this available

Analytic Code

Yes - There is a plan to make this available

Data Dictionary

Yes - There is a plan to make this available

Title and more details about the data/document

All blood and physiological data of individuals can be shared after they were made anonymous.

When the data will become available and for how long

The start of the access period will be 6 months after the publication of the results.

To whom data/document is available

For researchers and scientific journals

Under which criteria data/document could be used

Researchers and scientific journals can access the data if they make their reports in coordination with us and mention the names of the main authors of this study in their report.

From where data/document is obtainable

Applicants can contact the corresponding or other authors via email.

What processes are involved for a request to access data/document

Applicants can submit their application via email.

Information will be provided to them in case of authors' agreement.

Comments