

Clinical Trial Protocol

Iranian Registry of Clinical Trials

10 Jun 2026

The effect of carbohydrate meals with high or low glycemic index on blood glucose concentration following prolonged strenuous exercise

Protocol summary

Summary

Background: The glycemic index (GI) is a system for the classification of carbohydrate-containing foods that is based on their blood-glucose-raising potential. In addition, Carbohydrate ingestion following prolonged strenuous exercise attenuates the suppression of immune system by maintaining plasma glucose concentration and minimizing stress hormone and inflammatory cytokines responses that is the most important factor in reduction of inflammation in paralyzed athletes. Purpose: The purpose of this study was to determine the effect of pre-exercise high carbohydrate meals with high or low glycemic index on glucose profile pre, immediately post and 1 hour after subsequent endurance exercise. Method: in a semi-empirical double-blind trial, 12 male athletes was purposefully selected to be titled triable and then divided in 2 groups of high (HGI=94) and low glycemic index (LGI=40), in amount of 1 gram per kilogram of body weight. Afterwards, they performed two 90-min running on a treadmill at 70% VO₂max for 2 hours Within 7 days. Blood samples were collected before, immediately after and 1 hour after run for measure of blood glucose concentrations.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT201201048617N1**
Registration date: **2012-01-16, 1390/10/26**
Registration timing: **retrospective**

Last update:

Update count: **0**

Registration date

2012-01-16, 1390/10/26

Registrant information

Name

Seyyed javad Zaolhagh

Name of organization / entity

Islamic Azad University, Shahrood Branch, Physical Education Faculty, Shahrood, Iran

Country

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javadzia@gmail.com

Recruitment status

Recruitment complete

Funding source

Tehran University

Expected recruitment start date

2008-12-21, 1387/10/01

Expected recruitment end date

2009-01-20, 1387/11/01

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

The effect of carbohydrate meals with high or low glycemic index on blood glucose concentration following prolonged strenuous exercise

Public title

Effect of glycemic index on immune system after endurance training

Purpose

Basic scienece

Inclusion/Exclusion criteria

Inclusion criteria: having athletic background; not having inflamatory deseases; age between 20 to 25 years; body

fat percentage 9-14%; vo2max 4-5 and BMI between 19.5 to 25. Exclusion criterion: unsuccessful training test condition

Age

From **20 years** old to **25 years** old

Gender

Male

Phase

1

Groups that have been masked

No information

Sample size

Target sample size: **12**

Randomization (investigator's opinion)

Randomized

Randomization description

Blinding (investigator's opinion)

Double blinded

Blinding description

Placebo

Not used

Assignment

Parallel

Other design features

12 subjects selected and divided to 2 group randomly

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Tehran University

Street address

iran-tehran-amirabad15th-physical education faculty of university of tehran

City

Tehran

Postal code

Approval date

2008-06-01, 1387/03/12

Ethics committee reference number

26972/6/3

Health conditions studied

1

Description of health condition studied

effect of glycemic index regimen on immune system after strenuous endurance exercise

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description

Blood glucose

Timepoint

Before, immediately after and 1 hour after intervention

Method of measurement

Laboratory test

Secondary outcomes

empty

Intervention groups

1

Description

Glycemic index regimen

Category

Treatment - Other

2

Description

Endurance exercise with 70 percent of maximal heart rate in 90minutes

Category

Treatment - Other

Recruitment centers

1

Recruitment center

Name of recruitment center

Tehran University dormitory

Full name of responsible person

Seyed Javad Zeiaolhagh

Street address

No 54.1, Sadaf 11 alley, Sadaf blv., Mashad

City

Mashad

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Tehran University of

Full name of responsible person

Mrs. Mohammadi

Street address

Amir abad 15th str., Tehran, Iran

City

Tehran

Grant name

Grant code / Reference number

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

Yes

Title of funding source
Tehran University of
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

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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