

Clinical Trial Protocol

Iranian Registry of Clinical Trials

20 Jun 2026

The effect of exercise in a cold environment, warm and natural on the number of leukocytes and platelets in healthy young athletes

Protocol summary

Summary

Introduction & Objective: Both exercise and unnatural environments causes alter in immune system function. The aim of this study was to compare the effect of exercise on the total numbers of blood Leukocytes, and platelets of the athletes in temperature conditions cold, warm and normal. Materials & Methods: This clinical trial study was conducted at Tehran University in 2011. Ten young male endurance athletes, conducted the same exercise(treadmill running) for an hour at the intensity of %60VO₂max in three temperature conditions of normal (22±1°C, 50±5RH), cold (3±1°C, 50±2) and warm (35±1°C, 50±5). Blood samples were collected before, immediately after exercise and two hours later(during recovery) Inclusion criteria included; having a history of at least 3 years of continuous and 8 hours per week of exercise endurance; maximal oxygen consumption 50 ml kg min; the absence of any disease of the immune system; vascular Kvrnr and infection in the past month; such as influenza; to colds; respiratory infections Hungarian; or symptoms such as fever; sore throat; runny nose; cough and other infectious diseases. The use of doping substances such as vitamins; dietary supplements; herbs or medications that affect the immune system are effective; Smoking and alcohol 48 hours before the test; Participate in heavy exercise; exposure to adverse environmental conditions; temperature; disease and viral infection during the plan period; were exclusion criteria. Interventions:Exercise Primary outcome measure:Leukocyte, platelet

General information

Acronym

Not have

IRCT registration information

IRCT registration number: **IRCT201108077255N1**

Registration date: **2011-08-24, 1390/06/02**

Registration timing: **retrospective**

Last update:

Update count: **0**

Registration date

2011-08-24, 1390/06/02

Registrant information

Name

Sadegh Satarifard

Name of organization / entity

Tehran University

Country

Iran (Islamic Republic of)

Phone

+98 21 8863 3866

Email address

satarifard@ut.ac.ir

Recruitment status

Recruitment complete

Funding source

Investigator

Expected recruitment start date

2011-05-10, 1390/02/20

Expected recruitment end date

2011-06-19, 1390/03/29

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

The effect of exercise in a cold environment, warm and natural on the number of leukocytes and platelets in healthy young athletes

Public title

Exercise and immune change

Purpose

Basic science

Inclusion/Exclusion criteria

Inclusion criteria included; having a history of at least 3 years of continuous and 8 hours per week of exercise endurance; maximal oxygen consumption 50 ml kg min; the absence of any disease of the immune system; vascular Kvrnr and infection in the past month; such as influenza; to colds; respiratory infections Hungarian; or symptoms such as fever; sore throat; runny nose; cough and other infectious diseases. The use of doping substances such as vitamins; dietary supplements; herbs or medications that affect the immune system are effective; Smoking and alcohol 48 hours before the test; Participate in heavy exercise; exposure to adverse environmental conditions; temperature; disease and viral infection during the plan period; were exclusion criteria.

Age

From **20 years** old to **30 years** old

Gender

Male

Phase

2-3

Groups that have been masked

No information

Sample size

Target sample size: **10**

Randomization (investigator's opinion)

N/A

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 Tehran University, Department of Physical Education

Street address

Department of Physical Education of Tehran University, Kargrshmary Street, Tehran

City

Tehran

Postal code

Approval date

2011-05-04, 1390/02/14

Ethics committee reference number

28

Health conditions studied

1

Description of health condition studied

Not Patient- Healthy subjects, young athletes

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description

Numbers of Leukocytes, and platelets

Timepoint

Before, immediately after and 2 h after exercise

Method of measurement

1 cc of blood sample collected in three stages and the numbers of Leukocytes Using Sysmks Nyhun Japan were measured in the laboratory

Secondary outcomes

1

Description

Not have

Timepoint

Not have

Method of measurement

Not have

Intervention groups

1

Description

One hour of exercise (running on a treadmill) with 60% of vo2max, in normal environment(22°c)

Category

Other

2

Description

One hour of exercise (running on a treadmill) with 60% of vo2max, in normal environment(35°c)

Category

Other

3

Description

One hour of exercise (running on a treadmill) with 60% of vo2max, in normal environment(4°c)

Category

Other

Recruitment centers

1

Recruitment center

Name of recruitment center

Yasuj

Full name of responsible person

Satarifard

Street address

Tehran University School of Physical Education,
Kargrshmary Street, Tehran

City

Tehran

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Investigator

Full name of responsible person

Satarifard Sadegh

Street address

Tehran University School of Physical Education,
Kargrshmary Street, Tehran

City

Tehran

Grant name

Grant code / Reference number

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

Yes

Title of funding source

Investigator

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

Tehran University

Full name of responsible person

Satarifard Sadegh

Position

MSc student

Other areas of specialty/work

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Web page address

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