Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 2026

Comparing The Effect Of Cold Water Immersion And Contrast Water Therapy On Recovery Indices After A Soccer Match In Adolescent Male Soccer Players

Protocol summary

Study aim
The aim of this study is to compare the effects of cold water immersion and contrast water therapy on recovery indices in adolescent male football players following a football match

Design
The trial has two parallel intervention groups. After playing a friendly football game (including all players), the subjects will be divided into cold water immersion (players of one team) and contrast water therapy (players of the opposite team) groups in parallel.

Settings and conduct
This study will be conducted with the aim of improving recovery and athletic performance, reducing delayed onset muscle soreness, and preventing injury and overreaching in football players. After checking the eligibility, subject will engage in friendly football match and then they will undergo recovery process which includes cold water immersion (15 degrees) and contrast water therapy (15 and 38 degrees) in Opal hydrotherapy and rehabilitation complex. The dependent variables will be monitored and evaluated before the match and at one, 24 and 48 hours after the recovery protocol.

Participants/Inclusion and exclusion criteria
Male adolescent football players aged 15 to 18 years, with no medical contraindications to participating in exercise training and sport, who have engaged in regular exercise training for at least one year, are in good health, with no history of chronic disease or any clinical conditions that could impair athletic performance, will be selected. The exclusion criteria: having any musculoskeletal problem or injury or fear of water or heart and hemodynamic conditions.

Intervention groups
The intervention groups include two groups: cold water immersion and contrast water therapy, who will implement the specified protocol

Main outcome variables
Delayed onset muscle soreness, static lower body strength, lower body muscular power, flexibility, and speed.

General information

Reason for update

Acronym

IRCT registration information
IRCT registration number: **IRCT20200408046997N4**
Registration date: **2024-11-28, 1403/09/08**
Registration timing: **registered_while_recruiting**

Last update: **2024-11-28, 1403/09/08**
Update count: **0**

Registration date
2024-11-28, 1403/09/08

Registrant information
Name
Ali Samadi
Name of organization / entity
Country
Iran (Islamic Republic of)
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+98 21 5121 2456
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a.samadi@shahed.ac.ir

Recruitment status
Recruitment complete

Funding source

Expected recruitment start date
2024-11-28, 1403/09/08

Expected recruitment end date
2024-12-10, 1403/09/20

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Comparing The Effect Of Cold Water Immersion And Contrast Water Therapy On Recovery Indices After A Soccer Match In Adolescent Male Soccer Players

Public title

Effects of cold ware immersion and contrast hydrotherapy on the recovery of teenage soccer players

Purpose

Other

Inclusion/Exclusion criteria

Inclusion criteria:

Adolescent boys aged 15 to 18 No medical contraindication for engaging in exercise and training Regular participation in sports trainings for at least one year

Exclusion criteria:

Using any kind of supplement or medicine which can affect muscular pain and soreness Having any kind of musculoskeletal pain or damage at the beginning of the study

Age

From **15 years** old to **18 years** old

Gender

Male

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **22**

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 Shahed University

Street address

Shahed university, opposite to the Holy shrine of Imam Khomeini, Khalij Fars Expressway

City

Tehran

Province

Tehran

Postal code

3319118651

Approval date

2024-02-07, 1402/11/18

Ethics committee reference number

IR.SHAHED.REC.1403.065

Health conditions studied

1

Description of health condition studied

Recovery indices of teenage football players

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description

Delayed Onset Muscle Soreness (DOMS)

Timepoint

Before and after

Method of measurement

Visual Analogue Scale (VAS)

2

Description

static lower body strength

Timepoint

Before and after

Method of measurement

Dynamometer

3

Description

lower body muscular power

Timepoint

Before and after

Method of measurement

Countermovement Jump

4

Description

Flexibility

Timepoint

Before and after

Method of measurement

Sit and Reach Test

5

Description

Sprint

Timepoint

Before and after

Method of measurement

Chronometer

Secondary outcomes

empty

Intervention groups

1

Description

First intervention group: First, pre-test measurements will be conducted on all subjects, which include delayed onset muscle soreness, lower body strength, flexibility, lower body static strength, and speed. Then, the subjects will play a friendly soccer match in the form of two teams in compliance with all FIFA standards in two 45-minute halves with a 15-minute break between the halves. After the competition, the subjects will be divided into two groups of cold-water immersion and contrast water therapy to implement recovery protocols. The cold-water immersion group will completely immerse in 15°C water without moving for 15 minutes from the neck to the soles of the feet. After that, the post-test measurements will be performed in the same conditions as the pre-test in 1, 24 and 48 hours after the recovery protocol.

Category

Rehabilitation

2

Description

Intervention group: After the completion of the match, the other half of the subject will receive the contrast water therapy intervention. The intervention includes immersion in hot water, 38°C, for 2 minutes and then immersion in cold water, 15°C, for two minutes alternatively and the process will be repeated 4 times with 1 min rest in between. After that, the post-test measurements will be performed in the same conditions as the pre-test in 1, 24 and 48 hours after the recovery protocol.

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center

Opal Hydrotherapy and Rehabilitation Complex

Full name of responsible person

Mahdi Soltanian

Street address

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3561854593

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Shahed University

Full name of responsible person

Shahriar Bijani

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Shahed University, opposite the Holy shrine of Imam Khomeini, Persian Gulf Expressway, Tehran, Iran

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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

Shahed University

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

Shahed University

Full name of responsible person

Alireza Belghadr

Position

MSc student

Latest degree

Bachelor

Other areas of specialty/work
Exercise Physiology

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Person responsible for scientific inquiries

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Position
Associate professor

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Other areas of specialty/work
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Other areas of specialty/work
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Sharing plan

Deidentified Individual Participant Data Set (IPD)
No - There is not a plan to make this available

Justification/reason for indecision/not sharing IPD
No further information.

Study Protocol
Undecided - It is not yet known if there will be a plan to make this available

Statistical Analysis Plan
Undecided - It is not yet known if there will be a plan to make this available

Informed Consent Form
No - There is not a plan to make this available

Clinical Study Report
Not applicable

Analytic Code
Undecided - It is not yet known if there will be a plan to make this available

Data Dictionary
Not applicable