

Clinical Trial Protocol

Iranian Registry of Clinical Trials

20 Jun 2026

Comparison of the effect of 6 weeks of balance & strength and hopping exercises on the kinematics of lower extremities in patients with functional ankle instability and Ankle-Sprain Copers Detected by Questionnaire (IdFAI)

Protocol summary

Study aim

The purpose of this study was to compare the effects of balance training and hopping on lower extremity kinematics in athletes with functional ankle instability and Cooper ankle sprain.

Design

Clinical trial with control group, with factorial groups, not blind, Stratified randomization

Settings and conduct

The study was carried out in the biomechanics laboratory of Yazd University, and the subjects were assigned to the laboratory on designated days and were photographed with cameras while running. Marking was also done. They were divided into five groups to practice the exercise protocol and were trained on different days and the groups did not know about each other's exercises.

Participants/Inclusion and exclusion criteria

Inclusion criteria: 1- Athlete who exercises regularly at least three times a week. 2- Exercise at least once in the last 12 months of ankle sprain which has undergone its medical procedures. 4- Physiotherapist's approval On the functional instability of the athlete's ankle Exclusion criteria: 1) having neurological disorders 2) having lower extremity injury or ankle sprain last month

Intervention groups

Balance training group with functional ankle instability. Balance training group with Coper ankle sprain. Hopping exercises group with Coper ankle sprain. Group of Hopping Exercises with Functional Ankle Instability. Functional ankle instability group and coper ankle sprain without any exercise

Main outcome variables

Ankle joint kinematics; Knee joint kinematics; Hip kinematics.

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20190627044039N1**

Registration date: **2019-10-12, 1398/07/20**

Registration timing: **retrospective**

Last update: **2019-10-12, 1398/07/20**

Update count: **0**

Registration date

2019-10-12, 1398/07/20

Registrant information

Name

Mohammad Hasan Kordi Ashkezari

Name of organization / entity

Shahid Bahonar University of Kerman

Country

Iran (Islamic Republic of)

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+98 35 3272 2139

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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2019-05-22, 1398/03/01

Expected recruitment end date

2019-06-10, 1398/03/20

Actual recruitment start date

2019-05-31, 1398/03/10

Actual recruitment end date

2019-06-21, 1398/03/31

Trial completion date

2019-09-06, 1398/06/15

Scientific title

Comparison of the effect of 6 weeks of balance & strength and hopping exercises on the kinematics of lower extremities in patients with functional ankle instability and Ankle-Sprain Copers Detected by Questionnaire (IdFAI)

Public title

Comparison of the effect of balance & strength and hopping exercises on the kinematics of lower extremities in patients with functional ankle instability and Ankle-Sprain Copers Detected by Questionnaire (IdFAI)

Purpose

Treatment

Inclusion/Exclusion criteria**Inclusion criteria:**

An athlete who exercises regularly at least three times a week. He has experienced at least one external ankle sprain in the past 12 months, having undergone treatment. Physiotherapist's confirmation of functional instability of the athlete's ankle Age range from 16 to 40 years

Exclusion criteria:

Having neurological disorders Having a lower limb injury or ankle sprain last month

Age

From **16 years** old to **40 years** old

Gender

Male

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **55**

Actual sample size reached: **55**

Randomization (investigator's opinion)

Randomized

Randomization description

Randomization is limited in this study. The method of implementing it is classified randomization, which is used to balance the number of random samples assigned within groups. This method is used to ensure sample size equilibrium between groups over time. After determining the block size by the researcher, the number of groups must also be specified. Then the number of people with the special code is put in the envelope. Mail envelopes will be merged and an envelope will be merged and re-merged. The first envelope falls into group 1, the second envelope in group 2, the third envelope in group 3, the fourth envelope in group 4, and the fifth in group 5. To hide the random assignment, the non-transparent wax seal envelope method will be used with a random sequence. After the random sequence based on the sample size, a number of packages will be prepared and each random sequence generated on the card will be recorded and the cards recorded. The envelopes are inserted in sequence in order to maintain a random sequence at the outer surface of the envelope,

numbering is done in the same order and pasted into envelopes. At the beginning of the registration, one of the envelopes will be opened based on the participants' entry and the group will be announced.

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**

veterinary faculty of shahid bahonar university of kerman

Street address

Veterinary Medicine faculty, shahid bahonar university, emen khomeini highway, kerman

City

kerman

Province

Kerman

Postal code

7616914111

Approval date

2019-05-27, 1398/03/06

Ethics committee reference number

IR.UK.VETMED.REC.1398.008

Health conditions studied**1****Description of health condition studied**

functional ankle instability

ICD-10 code

S93.4

ICD-10 code description

Sprain of ankle

Primary outcomes**1****Description**

kinematic of lower extremity

Timepoint

before of intervention and after six week intervention

Method of measurement

questionnaire and optitrack camera

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group: Hoping Exercises: These exercises also come from the latest resources available for ankle joint rehabilitation. These exercises will last for 6 weeks and 3 weekly 45 minute sessions. These 45 minutes include 10 minutes warm-up 30 minutes core exercises and 5 minutes cool down. The tools used in this exercise are paper glues to show the direction of movement.

Category

Rehabilitation

2

Description

Control group: The group performs its daily activities and sports activities

Category

N/A

3

Description

Intervention group: Balance strengthening exercises: These are traditional exercises based on previous studies used for ankle sprain rehabilitation. These exercises will last for 6 weeks and 3 weekly 45 minute sessions. These 45 minutes include 10 minutes warm-up 30 minutes core exercises and 5 minutes cool down. The tools used in these exercises include a balance board and free weights and steppes.

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center

Yazd University

Full name of responsible person

Farzad Feizi

Street address

Pejuhesh Ave., Daneshgah Blvd

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2

Recruitment center

Name of recruitment center

Yazd Vaspur Club

Full name of responsible person

Mojtaba Zarenejad

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22 Bahman Gym, Emam Ave, Emam Reza Sq, Ashkezar

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8941684398

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Shahid bahonar university

Full name of responsible person

Mansur Sahebozamani

Street address

Emam khomeini

City

Kerman

Province

Kerman

Postal code

7616913439

Phone

+98 34 3132 3177

Email

sahebozamani@yahoo.com

Grant name

Grant code / Reference number

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

Yes

Title of funding source

Shahid bahonar university

Proportion provided by this source

50

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

Yazd University

Full name of responsible person

Mohammad Hasan Kordi Ashkezari

Position

PhD student

Latest degree

Master

Other areas of specialty/work

sport injury and corrective exercise

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Latest degree

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Person responsible for updating data

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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

The data is confidential

Study Protocol

Yes - There is 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

Yes - There is a plan to make this available

Clinical Study Report

Yes - There is a plan to make this available

Analytic Code

Not applicable

Data Dictionary

Not applicable

Title and more details about the data/document

Can be used after non-identifying people

When the data will become available and for how long

3 months after publishing its articles

To whom data/document is available

People working in institutions and people in the industry

Under which criteria data/document could be used

To check the accuracy of work and research

From where data/document is obtainable

editor: Mohammad Hasan Kordi Ashkezari

email:kordi.sport@gmail.com

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

The applicant can correspond by e-mail and after completing and publishing their service papers

Comments