

Clinical Trial Protocol

Iranian Registry of Clinical Trials

27 Jun 2026

Effects of prophylactic ankle supports on electromyographic activity of selected muscles, ground reaction force, balance and perception of stability during landing in female college athletes before and after fatigue

Protocol summary

Study aim

This study was performed on athletes with chronic ankle instability at both pre and post-fatigue times. The aim of this study was to determine the effect of kinesiotape and ankle braces on the electromyographic activity of selected muscles, parameters related to the vertical ground reaction force and balance in participants and compare it at both time before and after fatigue.

Design

Before after clinical trial (in one group), single blinded, not randomized on 15 participants.

Settings and conduct

Research site: Sports Rehabilitation Research Laboratory of Bu Ali Sina University Blinding: Single blinded, The data analyzer. Data coded without details such as names of individuals and intervention will be provided to the analyzer.

Participants/Inclusion and exclusion criteria

The inclusion criteria: More than two incidences of ankle sprains or a greater need for medical treatment of the condition, Feelings of fear or instability of the ankle function, No history of ankle or knee injury in the past 3 months, No history of surgery or fractures of the lower extremities; The non-inclusion criteria: Chronic diseases, such as patellofemoral pain syndrome.

Intervention groups

Intervention group 1: Intervention with kinesiotape: After the kinesiotape with basket weaving method in the ankle, the participants perform a landing maneuver. Then the Bruce fatigue protocol used to apply fatigue, and after fatigue, the landing maneuver is performed again with kinesiotape. Intervention group 2: Intervention with brace: Participants first perform the landing maneuver by wearing braces on the ankle. Then the Bruce fatigue protocol used to apply fatigue, and after fatigue, the landing maneuver is performed again with brace.

Main outcome variables

The electromyographic activity of selected muscles; time to stabilization; peak vertical ground reaction force; time to peak vertical ground reaction force; perceived stability

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20200204046368N3**

Registration date: **2021-02-02, 1399/11/14**

Registration timing: **prospective**

Last update: **2021-02-02, 1399/11/14**

Update count: **0**

Registration date

2021-02-02, 1399/11/14

Registrant information

Name

Zahra Raeisi

Name of organization / entity

Arak University

Country

Iran (Islamic Republic of)

Phone

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Email address

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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2021-02-08, 1399/11/20

Expected recruitment end date

2021-02-18, 1399/11/30

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Effects of prophylactic ankle supports on electromyographic activity of selected muscles, ground reaction force, balance and perception of stability during landing in female college athletes before and after fatigue

Public title

Prophylactic ankle supports and female athletes

Purpose

Prevention

Inclusion/Exclusion criteria**Inclusion criteria:**

More than two incidences of ankle sprains with need for medical treatment Feelings of fear and instability in ankle function A score of ≤ 24 in the CAIT The confirmation of CAI via anterior drawer and talar tilt tests performed by an experienced physician

Exclusion criteria:

Chronic diseases such as patellofemoral pain syndrome in lower extremity Any problems affecting postural control and balance History of ankle or knee injury, surgery or fractures of the lower extremities in the past 3 months Apparent foot deformities, such as flat foot or high arch

AgeFrom **18 years** old to **30 years** old**Gender**

Female

Phase

N/A

Groups that have been masked

- Data analyser

Sample sizeTarget sample size: **15****Randomization (investigator's opinion)**

N/A

Randomization description**Blinding (investigator's opinion)**

Single blinded

Blinding description

The data analyzer will not know the details of the data. The coded data will be provided to the analyzer without details such as the names of the individuals and the intervention.

Placebo

Not used

Assignment

Single

Other design features**Secondary Ids**

empty

Ethics committees**1****Ethics committee****Name of ethics committee**

Ethics committee in research of Bu Ali Sina uUniversity

Street address

Shahid Mostafa Ahmadi Roshan street

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Postal code

6517838695

Approval date

2021-01-03, 1399/10/14

Ethics committee reference number

IR.BASU.REC.1399.027

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

Sprain of ankle

ICD-10 code

S93.4

ICD-10 code description

Sprain of ankle

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

Electromyography of the selected muscles

Timepoint

Before and after fatigue

Method of measurement

Biomonitor ME6000

2**Description**

Time to stabilization

Timepoint

Before and after fatigue

Method of measurement

Plantar pressure platform

3**Description**

Ground reaction force

Timepoint

Before and after fatigue

Method of measurement

Plantar pressure platform

4**Description**

Perceived stability

Timepoint

Before and after fatigue

Method of measurement

Questionnaire

Secondary outcomes

empty

Intervention groups**1****Description**

Intervention group: Bruce's general fatigue protocol is used to apply fatigue. The kinesiotape in a closed basket weave pattern and lace-up ankle brace are used on the ankle. All of the participants will perform landing tasks on the test limb under the three aforementioned (with Kinesiotape, lace-up brace and without prophylactic ankle support or control) conditions before and after fatigue while wear the same type of shoes (Air Max, Nike).

Category

Prevention

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

Bu-ali Sina University

Full name of responsible person

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Sponsors / Funding sources**1****Sponsor**

Name of organization / entity

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Full name of responsible person

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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

Arak 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**

Arak University

Full name of responsible person

Zahra Raeisi

Position

Assistant professor

Latest degree

Ph.D.

Other areas of specialty/work

Sport Medicine

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Person responsible for updating data

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Latest degree

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Other areas of specialty/work

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Sharing plan

Deidentified Individual Participant Data Set (IPD)

Undecided - It is not yet known if there will be 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

Not applicable

Analytic Code

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

Data Dictionary

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

Title and more details about the data/document

Part of the data on the time to stabilization vertical ground reaction force can be shared.

When the data will become available and for how long

One year after the publication of the study results.

To whom data/document is available

Researchers that working in academic institutions.

Under which criteria data/document could be used

Some information obtained after analysis will be possible only for researcher that experts in this field.

From where data/document is obtainable

Zahra Raeisi

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

The information will be available one year after the results are published.

Comments