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

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Iran (Islamic Republic of)
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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
Age
From **18 years** old to **30 years** old
Gender
Female

Phase
N/A
Groups that have been masked

- Data analyser

Sample size
Target 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

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Sponsors / Funding sources

1

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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
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Zahra Raeisi
Position
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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