Clinical Trial Protocol
Iranian Registry of Clinical Trials

27 Jun 2026

The Effect of Protective Knee Brace on Ankle and Knee Joint Co-contractions in People with Genu Valgum During Jumping and Landing

Protocol summary

Study aim
The aim of this study was to investigate the effect of short-term use of protective knee brace on ankle and knee joint co-contractions in people with genu valgum during jumping and landing.

Design
Clinical trial with control group with parallel groups on 20 subjects.

Settings and conduct
The place of study was Mohaghegh Ardabili University Health Center. Subjects were purposefully divided into two groups of 10 people.

Participants/Inclusion and exclusion criteria
1. People with genu valgum 2. The severity of the deformity is 1 degree, the distance between the inner ankles of the foot is between 3-5 cm. The conditions of non-payment are also: 1. History of surgery Injury to the lower limbs Abnormalities in the trunk Reluctance to cooperate

Intervention groups
The effect of BeActive knee brace model 1031 was applied to the experimental group. while the control group had no intervention.

Main outcome variables
The Effect of Protective Knee Brace on Ankle and Knee Joint Co-contractions in People with Genu Valgum During Jumping and Landing

General information

Reason for update

Acronym

IRCT registration information
IRCT registration number: **IRCT20190302042881N4**
Registration date: **2023-06-04, 1402/03/14**
Registration timing: **prospective**

Last update: **2023-06-04, 1402/03/14**
Update count: **0**

Registration date
2023-06-04, 1402/03/14

Registrant information

Name
Mohsen Barghamadi

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Recruitment status
Recruitment complete

Funding source

Expected recruitment start date
2023-07-07, 1402/04/16

Expected recruitment end date
2023-09-07, 1402/06/16

Actual recruitment start date
empty

Actual recruitment end date
empty

Trial completion date
empty

Scientific title
The Effect of Protective Knee Brace on Ankle and Knee Joint Co-contractions in People with Genu Valgum During Jumping and Landing

Public title
The Effect of Protective Knee Brace on Ankle and Knee Joint Co-contractions in People with Genu Valgum During Jumping and Landing

Purpose
Supportive

Inclusion/Exclusion criteria

Inclusion criteria:
People with first degree Genu Valgum The distance between the inner ankles of the foot is between 3-5 cm
Exclusion criteria:
History of surgery Injury to the lower limbs Abnormalities in the trunk Reluctance to cooperate

Age
From **21 years** old to **23 years** old

Gender
Male

Phase
N/A

Groups that have been masked
No information

Sample size
Target sample size: **30**

Randomization (investigator's opinion)
Randomized

Randomization description
The method of randomization was flip the coin. This method is usually used to create a random sequence in two-group experiments, in such a way that one of the study groups is considered a lion and the other group is a line, and based on the desired sample size, the same number of coins are tossed. And people are randomly assigned to two groups.

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
University of Mohaghegh Ardabili

Street address
University of Mohaghegh Ardabili, Daneshgah st, Ardabil, Iran

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Approval date
2022-11-07, 1401/08/16

Ethics committee reference number
IR.UMA.REC.1401.063

2

Ethics committee

Name of ethics committee
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Approval date
2019-07-20, 1398/04/29

Ethics committee reference number
IR.ARUMS.REC.1398.198

Health conditions studied

1

Description of health condition studied
Genu Valgum

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description
The Effect of Protective Knee Brace on Ankle and Knee Joint Co-contractions

Timepoint
The current research was carried out in two stages: pre-test and post-test. In this way, first, all the subjects were justified in terms of information about the research, the benefits of using the knee brace, the risks of cross knee development and secondary injuries. Then, before starting the test, the subjects warmed up their joints and muscles for 15 minutes. Subjects were placed behind the specified location, which was marked on the floor with colored tape. Subjects were asked to jump as high as they could and land with both feet on the marked spot. Then the jump and landing test was repeated three times by the subjects. A correct effort was considered when the subjects maintained their balance, and the software correctly recorded the electrical activity data of the muscles. If the subjects lost their balance or their electrical activity was not recorded, the attempt was repeated. In the post-test phase, the subjects were asked to tie the studied knee brace to the knee of their superior leg. Then, jumping and landing using a knee brace was repeated as in the pre-test phase in three attempts. At the end, the subjects were busy cooling down to prevent possible injuries after performing the efforts. The brace used in this study was the BeActive model 1031 knee brace. This brace is a flexible type without arm and strap for adjustment. The subjects of both the crossed knee group and the healthy group used this type of brace.

Method of measurement
The variables were measured using an electromyography device.

Secondary outcomes

empty

Intervention groups

1

Description
Intervention group: There were 10 boys with crossed knees in the experimental group. The knee brace used was BeActive model 1031. The electrical activity of selected muscles was recorded by an electromyography device (Biometrics ltd, UK). In this research, the electrical activity of the lower limb muscles during jumping and landing (immediate effect) was measured.
Category
Rehabilitation

2

Description
Control group: 10 healthy boys who did not have any disorders in the lower limbs were selected as the control group. The electrical activity of selected muscles was recorded by an electromyography device (Biometrics ltd, UK). In this research, the electrical activity of the lower limb muscles during jumping and landing (immediate effect) was measured.
Category
Rehabilitation

Recruitment centers

1

Recruitment center
Name of recruitment center
University of Mohaghegh Ardabili Health Center
Full name of responsible person
Mohsen Barghamadi
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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
University of Mohaghegh Ardabili
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
University of Mohaghegh Ardabili
Full name of responsible person
Mohsen Barghamadi
Position
Associate proffesor
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Person responsible for scientific inquiries

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Person responsible for updating data

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Sharing plan

Deidentified Individual Participant Data Set (IPD)
Yes - There is a plan to make this available
Study Protocol
Yes - There is a plan to make this available
Statistical Analysis Plan
Not applicable
Informed Consent Form
Yes - There is a plan to make this available
Clinical Study Report
Not applicable
Analytic Code
Not applicable
Data Dictionary
Not applicable
Title and more details about the data/document
Twenty male students of University of Mohaghegh Ardabili were participated.
When the data will become available and for how long
6 months after publication
To whom data/document is available
Researcher in Sport science
Under which criteria data/document could be used
There is no specific condition
From where data/document is obtainable
barghamadi@uma.ac.ir
What processes are involved for a request to access data/document
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Comments