Clinical Trial Protocol
Iranian Registry of Clinical Trials

09 Jun 2026

The effect of specific training on ground reaction forces charactrestics during landing and gait in individuals with genu valgum

Protocol summary

Summary

The aim of this study is to identify the effects of the correction exercise program on gait and landing ground reaction force characteristics in individuals with genu valgus. An experimental study with a randomized controlled trial design will be used. Twenty six subjects with genu valgus will be classified in two groups: the experimental group (n=13) and the control group (n=13). The experimental group will conduct correction exercise program for 35-40 minutes at each session, 3 times a week, for 16 weeks, while the control group did not perform any exercise. Two Kistler force plates (Kistler AG, Winterthur, Switzerland) will be used to record the GRF components during bilateral drop landing abd gait with sampling rate of 1000Hz.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT2016110230657N1**
Registration date: **2016-11-18, 1395/08/28**
Registration timing: **registered_while_recruiting**

Last update:
Update count: **0**

Registration date

2016-11-18, 1395/08/28

Registrant information

Name

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Name of organization / entity

Mohaghegh Ardabili University

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Recruitment status

Recruitment complete

Funding source

Mohaghegh Ardabily university

Expected recruitment start date

2016-11-08, 1395/08/18

Expected recruitment end date

2017-03-08, 1395/12/18

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

The effect of specific training on ground reaction forces charactrestics during landing and gait in individuals with genu valgum

Public title

The effect of specific training on ground reaction forces charactrestics during landing in individuals with genu valgum

Purpose

Prevention

Inclusion/Exclusion criteria

Inclusion criteria: Age range between 60-70 years; Q angle greater than 18 degree; Medial malleolus distance greater than 6 cm. Exclusion criteria: History of lower limbs injury; History of lower limbs surgery; Body Mass Index greater than 30.

Age

From **60 years** old to **70 years** old

Gender

Male

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **26**

Randomization (investigator's opinion)

Randomized

Randomization description

Blinding (investigator's opinion)

Single blinded

Blinding description

Placebo

Not used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Ardabil university of medical sciences

Street address

Ardabil province- Ardabil city-Ardabil university of medical sciences

City

Ardabil

Postal code

Approval date

2016-11-03, 1395/08/13

Ethics committee reference number

IR.ARUMAS.REC.1395.77

Health conditions studied

1

Description of health condition studied

Genu valgum

ICD-10 code

Q74.1

ICD-10 code description

Genu valgum

Primary outcomes

1

Description

Ground reaction forces

Timepoint

before and after 16 weeks

Method of measurement

Forceplatform

Secondary outcomes

1

Description

Q angle

Timepoint

before and after 16 weeks

Method of measurement

Goniameter

Intervention groups

1

Description

Intervention group: Elastic tubing (Thera-Band, Akron, Ohio, US) ranging from very low to very high resistance (yellow, red, green, blue, black and silver) will be used. The Intervention group will be performed stretch training protocol (first two weeks) for the hip adductor, biceps femoris and tensor fascia latae muscles consisted of static stretching performed in four sets of 30s for each movement. After stretch training protocols, the experimental group wil be performed resistance thera-band exercises at three times per week for fourteen weeks (i.e., 42 strength training sessions). The participants will be familiarized with the training techniques prior to training. Each exercise session will be consisted of a general warm-up of 10 minutes, followed by a resistance training session (35- 40 minutes) and was completed by a cool-down routine. Exercises were preceded by warm-up sets, while all thera-band training was closely will be supervised and the participants will be received consistent verbal instructions. Following an adaptation phase of four weeks using low external resistance (yellow Thera-Band®, 1 set of 14 repetitions per exercise with a higher resistance only if the subject was obviously unchallenged) exercise intensity was progressively increased by adapting the resistance of the elastic band (based on the Thera-Band® force-elongation table) from yellow to red and further to black. In addition, the exercise volume will be extended by increasing the number of sets from one to two. Rate of progression will be based on individual improvements (band colour will be changed if participant would have been able to perform two more repetitions in the second set) .

Category

Rehabilitation

2

Description

Control group: The control group did not perform any strengthening or stretching exercises and their participants were re-evaluated after 16 weeks.

Category

N/A

Recruitment centers

1

Recruitment center
Name of recruitment center
Rehabilitation centers of Hamadan city
Full name of responsible person
Street address
City
Hamadan

Sponsors / Funding sources

1

Sponsor
Name of organization / entity
Mohaghegh Ardabili University
Full name of responsible person
Mohsen Barghamadi
Street address
Department of Physical Education and Sport Sciences, Mohaghegh Ardabili University, Ardabil city, Ardabil province, Iran.
City
Ardabil
Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
Yes
Title of funding source
Mohaghegh Ardabili University
Proportion provided by this source
100
Public or private sector
empty
Domestic or foreign origin
empty
Category of foreign source of funding
empty
Country of origin
Type of organization providing the funding
empty

Person responsible for general inquiries

Contact
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Sharing plan

Deidentified Individual Participant Data Set (IPD)
empty
Study Protocol
empty
Statistical Analysis Plan
empty
Informed Consent Form
empty
Clinical Study Report
empty
Analytic Code
empty
Data Dictionary
empty