

Clinical Trial Protocol

Iranian Registry of Clinical Trials

19 Sep 2026

Comparison of maximum angles of varus and knee flexion in the stance phase of walking on a treadmill with different inclinations between female athletes with Genu valgum and healthy knees

Protocol summary

Study aim

The aim of this study was to investigate the maximum angles of varus and flexion while walking on positive, negative and zero slopes.

Design

Clinical trial with control group, grouping based on measuring the distance of intermalleolar by goniometer

Settings and conduct

Data recording using motion analysis system in the laboratory of the Faculty of Physical Education and Sports Sciences, Bahonar University of Kerman

Participants/Inclusion and exclusion criteria

Individuals exercised regularly at least three times a week and had no history of lower limb fractures or surgery

Intervention groups

Treadmill gradient in both knock-knee and control groups

Main outcome variables

The kinematic factor while walking: Maximum change in knee valgus angle during the stance phase of walking (compared to static test)

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20200721048165N1**

Registration date: **2020-07-29, 1399/05/08**

Registration timing: **prospective**

Last update: **2020-07-29, 1399/05/08**

Update count: **0**

Registration date

2020-07-29, 1399/05/08

Registrant information

Name

Katayoon Gilani

Name of organization / entity

Faculty of physical education and sport science,
Shahid Bahonar university of Kerman, Iran

Country

Iran (Islamic Republic of)

Phone

+98 34 3252 9580

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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2020-08-09, 1399/05/19

Expected recruitment end date

2020-09-20, 1399/06/30

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Comparison of maximum angles of varus and knee flexion in the stance phase of walking on a treadmill with different inclinations between female athletes with Genu valgum and healthy knees

Public title

investigating the different angles of the knee while walking on different slopes of the treadmill

Purpose

Prevention

Inclusion/Exclusion criteria

Inclusion criteria:

Subjects were 18 to 28 years old. No history of fracture or lower limb surgery People practiced at least three sessions a week on a regular basis. The gender of all subjects was female. In the genu valgum group, the intermalleolar distance was between 5 and 7.5 cm (grade 3) or more than 7.5 cm (grade 4).

Exclusion criteria:

Have a history of lower limb injury or surgery, especially in the knee, over the past six months Inability to attend and perform all stages of research People with a history of neuromusculoskeletal disorders History of ankle sprains Observation of lower limb deformity including genu varum and genu recurvatum Flat feet, especially in control group pes cavus deformity

Age

From **18 years** old to **28 years** old

Gender

Female

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **30**

Randomization (investigator's opinion)

Not randomized

Randomization description

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

Ethics Committee in Research, Faculty of Veterinary Medicine, Shahid Bahonar University of Kerman

Street address

No. 12, 35th Alley, North Malek Ashtar St.

City

kerman

Province

Kerman

Postal code

761777883

Approval date

2019-08-14, 1398/05/23

Ethics committee reference number

IR.UK.VETMED.REC.1398.016

Health conditions studied

1

Description of health condition studied

genu valgum or knock-knee

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description

Knee angles in frontal and sagittal plane

Timepoint

Continuously during testing

Method of measurement

Motion analysis system and Matlab software

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group: Genu valgum, positive and negative slope of ten and zero percent of the treadmill while walking

Category

Rehabilitation

2

Description

Control group: Positive and negative slope of ten and zero percent of the treadmill while walking

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center

Kerman Shahid Bahonar University

Full name of responsible person

Katayoon Gilani

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Sponsors / Funding sources**1****Sponsor****Name of organization / entity**Faculty of Physical Education and Sports Sciences,
Shahid Bahonar University of Kerman**Full name of responsible person**

Esmaeil Sharifiyan

Street addressImam Khomeini Highway, Research Square, Shahid
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chancellor@uk.ac.ir

Web page address<https://uk.ac.ir/>**Grant name****Grant code / Reference number****Is the source of funding the same sponsor organization/entity?**

Yes

Title of funding sourceFaculty of Physical Education and Sports Sciences,
Shahid Bahonar University of Kerman**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**Faculty of physical education and sport science,
Shahid Bahonar university of Kerman, Iran**Full name of responsible person**

Katayoon Gilani

Position

Student

Latest degree

Bachelor

Other areas of specialty/work

Sport Biomechanics

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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

Undecided - It is not yet known if there will be 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

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

Clinical Study Report

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

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