Clinical Trial Protocol
Iranian Registry of Clinical Trials

16 Sep 2026

Investigation of the relationship between vertical stiffness and time to stability index during landing

Protocol summary

Study aim
Determining the relationship between vertical stiffness and the variable of time to achieve stability in three directions: vertical, anterior-posterior and medio-lateral

Design
From the statistical population of this study, including active male physical education students of Kharazmi University, 20 people participated voluntarily in this study.

Settings and conduct
data collection was performed in Movafaqian Laboratory Motion Analysis Laboratory. the subjects performed the hopping test in the form of 15 consecutive hop on the force plate bilaterally and unilaterally with three strategies (preferred, control and maximal). After performing the hopping tests, A platform with a height of 35 cm was placed at a distance of 10 cm from the force plate. The subject was asked to stand on the platform , barefoot, and on the non-dominant leg, and to jump by landing on the dominant leg in the center of the force plate and as soon as he landed, he would balance in the same position for about 20 seconds.

Participants/Inclusion and exclusion criteria
20 active male physical education students of Kharazmi University Inclusion criteria: Subjects had at least two sessions per week and at least one hour of exercise per session. Exclusion criteria: not having any abnormalities and injuries in the lower extremities during the last six months

Intervention groups
Intervention group: Healthy, active males physical education students. The subjects performed unilaterally and bilaterally hopping tests with three strategies of maximal, control and preferred and then performed landing test on the force plate from a 30 cm height. Finally, the relationship between the vertical stiffness calculated during hopping tests and the time to stability during landing was determined.

Main outcome variables
Vertical stiffness; vertical Time to stability ;anterior-posterior Time to stability ; medio-lateral Time to stability

General information

Reason for update

Acronym

IRCT registration information
IRCT registration number: **IRCT20201206049627N1**
Registration date: **2021-01-01, 1399/10/12**
Registration timing: **registered_while_recruiting**

Last update: **2021-01-01, 1399/10/12**
Update count: **0**

Registration date
2021-01-01, 1399/10/12

Registrant information

Name
Mohammadamin Mohammadian

Name of organization / entity
The University of Kharazmi

Country
Iran (Islamic Republic of)

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Recruitment status
Recruitment complete

Funding source

Expected recruitment start date
2020-12-23, 1399/10/03

Expected recruitment end date
2021-01-20, 1399/11/01

Actual recruitment start date
empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Investigation of the relationship between vertical stiffness and time to stability index during landing

Public title

Investigation of the relationship between vertical stiffness and time to stability index during landing

Purpose

Other

Inclusion/Exclusion criteria

Inclusion criteria:

Subjects had at least two sessions per week and at least one hour of exercise per session.

Exclusion criteria:

Any anomalies or injuries during the last six months

Age

From **24 years** old to **28 years** old

Gender

Male

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **20**

Randomization (investigator's opinion)

N/A

Randomization description

Blinding (investigator's opinion)

Not blinded

Blinding description

Placebo

Not used

Assignment

Single

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Ethics Committee of the Institute of Physical Education and Sports Sciences

Street address

No. 3. 5th alley, Miremad Street, Motahary Ave

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tehran

Province

Tehran

Postal code

1587958711

Approval date

2017-11-26, 1396/09/05

Ethics committee reference number

IR.SSRI.REC.1396.126

Health conditions studied

1

Description of health condition studied

non

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description

vertical stiffness

Timepoint

just one visit

Method of measurement

force plate

2

Description

time to stability

Timepoint

just one visit in lab

Method of measurement

force plate

Secondary outcomes

empty

Intervention groups

1

Description

intervention group: Twenty healthy, active males of physical education and sport sciences of Kharazmi University . Each subject performed 15 consecutive hopping jumps bilaterally, unilaterally on dominant leg and unilaterally on non-dominant leg (nine variations in total) with three preferred, maximum and control strategies on the force plate and a single-legged landing test from a 30 cm platform on the force plate with three repetitions. Each subject in just one session in the laboratory performed 15 consecutive hopping jumps bilaterally and unilaterally with three preferred, maximum and control strategies barefoot and hand on waist on the force plate and then performed one-leg landing test on the force plate from a 30 cm platform with three repetitions.

Category

N/A

Recruitment centers

1

Recruitment center

Name of recruitment center
Kharazmi Unuiversity
Full name of responsible person
Mohammadamin Mohammadian
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Sponsors / Funding sources

1

Sponsor

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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
The University of Kharazmi

Proportion provided by this source
80

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
The University of Kharazmi
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Person responsible for updating data

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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
No - There is not 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