Clinical Trial Protocol
Iranian Registry of Clinical Trials

26 May 2026

Comparison of Gastrocnemius Kinesio Taping on Viscoelastic Characteristics and Performance of Musculoskeletal System during Vertical Jump Before and After Fatigue in Healthy Subjects Using Mass-Spring-Damper Model

Protocol summary

Summary

The main objective of this study is to evaluate the effect of kinesio tape on viscoelastic characteristics and performance of musculoskeletal system during vertical jump before and after fatigue in healthy subjects. In this study the kinesio tape will be applied on gastrocnemius muscle. This study is randomized non blinded clinical trial. Two groups of healthy men and women aged 18 to 35 years (25 subjects in each group) with no history of surgery or lasting injury or pain in the lower extremities during the test will participate in this study. All subjects will vertically jump in two conditions of before fatigue (with and without kinesio tape) and after (with and without kinesio tape) on the force plate. All of these steps will be conducted in a single session. The fatigue protocol of this study will include 5 sets of heel rise with active rest between each set. Finally different variables related to the jump performance and musculoskeletal viscoelasticity will be calculated through the analysis of the vertical component of ground reaction force and the mass-spring-damper model (mathematics calculation).

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT2016091928310N3**
Registration date: **2016-10-21, 1395/07/30**
Registration timing: **registered_while_recruiting**

Last update:
Update count: **0**

Registration date

2016-10-21, 1395/07/30

Registrant information

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Recruitment status

Recruitment complete

Funding source

Vice Chancellor for Research and Technology, Iran University of Medical Sciences

Expected recruitment start date

2016-02-20, 1394/12/01

Expected recruitment end date

2017-03-21, 1396/01/01

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Comparison of Gastrocnemius Kinesio Taping on Viscoelastic Characteristics and Performance of Musculoskeletal System during Vertical Jump Before and After Fatigue in Healthy Subjects Using Mass-Spring-Damper Model

Public title

Study of Kinesio Taping Effect on Various Characteristics and Performance of Musculoskeletal System during

Vertical Jump Before and After Fatiguing Condition

Purpose

Supportive

Inclusion/Exclusion criteria

Inclusion criteria: 18 to 35 years old men and women; healthy; non-athlete; active (which means doing a recreational sport activity for at least once a week)
Exclusion criteria: a history of any neurological or orthopedic injury sustained in the lower extremities or spine; leg length discrepancy of more than one centimeter; observable congenital deformities of the lower extremities; obesity (BMI greater than 30); lower limb or spine pain during the time of test

Age

From **18 years** old to **35 years** old

Gender

Both

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **50**

Randomization (investigator's opinion)

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

Iran University of Medical Sciences

Street address

Iran University of Medical Sciences, Hemmat Highway

City

Tehran

Postal code

Approval date

2015-05-23, 1394/03/02

Ethics committee reference number

IR.IUMS.REC.1394.9211342213

Health conditions studied

1

Description of health condition studied

Healthy subjects

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description

Jump height (One of the variables related to the jump performance)

Timepoint

Before fatigue (with and without kinesio tape on gastrocnemius muscle) and after fatigue (with and without kinesio tape on gastrocnemius muscle). In a single session.

Method of measurement

Force plate, Vertical component of ground reaction force

2

Description

Stiffness (One of the variables related to the viscoelastic characteristics of musculoskeletal system)

Timepoint

Before fatigue (with and without kinesio tape on gastrocnemius muscle) and after fatigue (with and without kinesio tape on gastrocnemius muscle). In a single session.

Method of measurement

Force plate, Mass-Spring-Damper Model

3

Description

Damping (One of the variables related to the viscoelastic characteristics of musculoskeletal system)

Timepoint

Before fatigue (with and without kinesio tape on gastrocnemius muscle) and after fatigue (with and without kinesio tape on gastrocnemius muscle). In a single session.

Method of measurement

Force plate, Mass-Spring-Damper Model

4

Description

Jump power (One of the variables related to the jump performance)

Timepoint

Before fatigue (with and without kinesio tape on gastrocnemius muscle) and after fatigue (with and without kinesio tape on gastrocnemius muscle). In a single session.

Method of measurement

Force plate, Vertical component of ground reaction force

Secondary outcomes

empty

Intervention groups

1

Description
Kinesio tape (Kinesio tape is one of the supportive-therapeutic modalities in the filed of physiotherapy and sport physiotherapy. Kinesio tape is a elastic fabric that will be applied on the skin.)
Category
Treatment - Other

2

Description
Fatigue status (The fatigue protocol will include 5 sets of heel rise to the rhythm of a metronome (40 beeps/min). Sets will be separated with a 20-second walk as an active rest.)
Category
Other

3

Description
Without kinesio tape
Category
N/A

4

Description
Fatigue free status
Category
N/A

Recruitment centers

1

Recruitment center
Name of recruitment center
School of Rehabilitation Sciences, Iran University of Medical Sciences
Full name of responsible person
Sahar Boozari
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School of Rehabilitation Sciences, Madadkaran St, Shahnazari St, Madar Sq, Mirdamad Blvd
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Sponsors / Funding sources

1

Sponsor
Name of organization / entity
Vice Chancellor for Research and Technology, Iran University of Medical Sciences
Full name of responsible person
Dr. Morteza Naserbakht
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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
Vice Chancellor for Research and Technology, Iran University of Medical Sciences
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

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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