

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

Name

Mohammad Ali Sanjari

Name of organization / entity

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Iran (Islamic Republic of)

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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 field 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

Street address

School of Rehabilitation Sciences, Madadkaran St, Shahnazari St, Madar Sq, Mirdamad Blvd

City

Tehran

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

Street address

Iran University of Medical Sciences, Hemmat highway

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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

Contact

Name of organization / entity

School of Rehabilitation Sciences, Iran University of Medical Sciences

Full name of responsible person

Dr. Mohammad Ali Sanjari

Position

PhD in Biomechanics/ Associate professor

Other areas of specialty/work

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Full name of responsible person

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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