

Clinical Trial Protocol

Iranian Registry of Clinical Trials

11 Sep 2026

Comparing the immediate effects of kinesio taping alone and in combination with dynamic stretching on the dynamic balance and functional performance of male athletes with anterior cruciate ligament reconstruction: A randomized clinical trial

Protocol summary

Study aim

Comparison of the immediate effects of kinesio taping alone and in combination with dynamic stretching on dynamic balance and functional performance in male athletes with anterior cruciate ligament reconstruction.

Design

A single-blind clinical trial, 42 people will be randomly assigned to one of the two groups of kinesio tape, and kinesio tape with dynamic stretching. Randomization will be done by block method.

Settings and conduct

Place of study: Musculoskeletal Rehabilitation Research Center, Faculty of Rehabilitation, Ahvaz University of Medical Sciences; study population; Recreational athletes with anterior cruciate ligament reconstruction; Type of blinding: single blind; Method of blinding: The evaluator will be unaware of which intervention the participants are receiving. A physical therapist with a master's degree will perform the assessments and a master's student in sports physical therapy will perform the interventions. Assessment and treatment will be done in two separate rooms.

Participants/Inclusion and exclusion criteria

Inclusion criteria: male recreational athletes; aged 18 to 45 years; who have passed at least 6 months of anterior cruciate ligament surgery; Exclusion criteria: having pain; swelling and limited movement in the knees; dizziness and involvement of the vestibular system; history of cardiovascular or respiratory diseases and sensitivity to kinesio tape.

Intervention groups

Intervention group: they will receive facilitatory kinesio tape on the quadriceps muscle and immediately perform dynamic stretching of the hamstring muscle. Control group: they will receive facilitatory kinesio tape on the quadriceps muscle.

Main outcome variables

Modified star excursion balance test score; single leg hop test score; jumping performance test score

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20230730058979N1**

Registration date: **2023-08-28, 1402/06/06**

Registration timing: **prospective**

Last update: **2023-08-28, 1402/06/06**

Update count: **0**

Registration date

2023-08-28, 1402/06/06

Registrant information

Name

Gholamhossain nassadj

Name of organization / entity

Country

Iran (Islamic Republic of)

Phone

+98 61 3374 3101

Email address

nassadj-gh@ajums.ac.ir

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2023-09-06, 1402/06/15

Expected recruitment end date

2023-12-22, 1402/10/01

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Comparing the immediate effects of kinesiо taping alone and in combination with dynamic stretching on the dynamic balance and functional performance of male athletes with anterior cruciate ligament reconstruction: A randomized clinical trial

Public title

The effect of kinesiо taping and dynamic stretching in persons with anterior cruciate ligament reconstruction

Purpose

Treatment

Inclusion/Exclusion criteria**Inclusion criteria:**

Males 18- 45 years Tegner questionnaire scores 5-7 6 month after ACL reconstruction Recreationally active participants Hamstring tendon graft technique were performed on them Knee range of motion greater than 90° flexion and complete extension

Exclusion criteria:

Pain, swelling and range of motion limitation in the knees Dizziness and involvement of vestibular system History of cardiovascular or respiratory disease History of neurological problems in lower extremities History of musculoskeletal disorders of the lower extremities during the last 12 months History of previous surgery in the lower extremity and difference in leg's length Skin sensitivity to kinesiо tape

Age

From **18 years** old to **45 years** old

Gender

Male

Phase

N/A

Groups that have been masked

- Outcome assessor

Sample size

Target sample size: **42**

Randomization (investigator's opinion)

Randomized

Randomization description

Randomization will be done by block method. In this way, quadruple blocks will be considered, in which the number of treatments is equal in each block, and we will display the two treatment groups as letters A and B, and we will write their different permutations on cards. 6 permutations are obtained, which will be written on 6 cards (AABB- BBAA- ABAB-ABBA-BABA-BAAB). And for the first time, when we randomly remove one of these cards from the envelope, the treatment group of the first to fourth person will be determined. We will put the card in the envelope again and use these cards until the sample size is completed.

Blinding (investigator's opinion)

Single blinded

Blinding description

The evaluator will be unaware of which intervention the participants are receiving. A physical therapist with a master's degree will perform the assessments and a master's student in sports physical therapy will perform the interventions. Assessment and treatment will be done in two separate rooms.

Placebo

Not used

Assignment

Parallel

Other design features**Secondary Ids**

empty

Ethics committees**1****Ethics committee****Name of ethics committee**

Ethics Committee of Jundi Shapur Ahvaz University of Medical Sciences

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Golestan highway

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Postal code

61357-15794

Approval date

2023-07-24, 1402/05/02

Ethics committee reference number

IR.AJUMS.REC.1402.252

Health conditions studied**1****Description of health condition studied**

Dynamic balance, performance

ICD-10 code**ICD-10 code description****Primary outcomes****1****Description**

Modified star excursion balance test score

Timepoint

before and 15 minutes after intervention

Method of measurement

By measuring the distance traveled in the modified star excursion balance test using a tape measure

2

Description

Single leg hop test score

Timepoint

before and 15 minutes after intervention

Method of measurement

By measuring the distance traveled during jumping with one leg using a tape measure

3

Description

Jumping performance test score

Timepoint

before and 15 minutes after intervention

Method of measurement

By measuring the height during the vertical jump using a tape measure

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group: Kinesio tape with a width of 5 cm will be applied on the skin on the quadriceps muscle using the facilitation technique. Before the intervention, the skin sensitivity of the patients will be tested using a small piece of kinesio tape in a 24-hour period, and a few hours after shaving the area, the kinesio tape will be applied. For this purpose, the person will be asked to lie down in the supine position with the leg hanging from the bed, while the knee is in 90 degrees of flexion. Then the kinesio tape will be applied with 50% elongation from the origin to the insertion of the quadriceps muscle, and then to the two parts on both sides of the patella. Then, in order to modify the knee movements and stimulate the surface receptors, an I-shaped kinesio tape piece will be used as the distance between the tibial tuberosity and 5 cm above the femoral condyles. It will be used in such a way that the knee is bent 80 to 90 degrees, open the tape in the middle and stick it on the tibial tuberosity with maximum tension. Then we will reduce the elongation of the two ends to 50% and attach them to the femoral condyles. Before and 15 minutes after the application of the kinesio tape, the dynamic balance and functional performance of the people will be evaluated.

Category

Rehabilitation

2

Description

Intervention group: at first, Kinesio tape with a width of 5 cm will be applied on the skin on the quadriceps muscle using the facilitation technique. Before the intervention, the skin sensitivity of the patients will be tested using a small piece of kinesio tape in a 24-hour period, and a few

hours after shaving the area, the kinesio tape will be applied. For this purpose, the person will be asked to lie down in the supine position with the leg hanging from the bed, while the knee is in 90 degrees of flexion. Then the kinesio tape will be applied with 50% elongation from the origin to the insertion of the quadriceps muscle, and then to the two parts on both sides of the patella. Then, in order to modify the knee movements and stimulate the surface receptors, an I-shaped kinesio tape piece will be used as the distance between the tibial tuberosity and 5 cm above the femoral condyles. It will be used in such a way that the knee is bent 80 to 90 degrees, open the tape in the middle and stick it on the tibial tuberosity with maximum tension. Then we will reduce the elongation of the two ends to 50% and attach them to the femoral condyles. Immediately after application of the kinesio tape, dynamic stretching will be performed. To perform dynamic stretching according to Nelson et al.'s method, persons will be instructed to lie supine, while the intact lower limb is fully extended, a 3 foot long piece of black Theraband (0.91 m) hold around the heel of the operated lower limb with both hands. The exercise will begin with the operated knee locked in full extension and the hip in zero degree extension. Then the person will take the hip into flexion by pulling the theraband with his hands and he will be asked when he feels a gentle stretch, to take the hip to zero degree extension without stopping and repeat this 6 times alternately. Dynamic stretching will be done for a total stretch of 30 seconds .Before and 15 minutes after intervention the dynamic balance and functional performance of the people will be evaluated.

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center

Musculoskeletal Research Center, Faculty of Rehabilitation, Jundishapur University of Medical Scienc

Full name of responsible person

Gholam Hossain Nassadj

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Ahvaz University of Medical Sciences

Full name of responsible person

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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

Ahvaz University of Medical Sciences

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**

Ahvaz University of Medical Sciences

Full name of responsible person

Gholam Hossain Nassadj

Position

Assistant professor

Latest degree

Ph.D.

Other areas of specialty/work

Physiotherapy

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Person responsible for scientific inquiries

Contact**Name of organization / entity**

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Full name of responsible person

Gholam Hossain Nassadj

Position

Assistant professor

Latest degree

Ph.D.

Other areas of specialty/work

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Person responsible for updating data

Contact**Name of organization / entity**

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Full name of responsible person

Fatemeh Bakhshizadeh

Position

Master's student in sports physiotherapy

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Bachelor

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Sharing plan

Deidentified Individual Participant Data Set (IPD)

Yes - There is a plan to make this available

Study Protocol

Yes - There is a plan to make this available

Statistical Analysis Plan

Yes - There is a plan to make this available

Informed Consent Form

Yes - There is a plan to make this available	
Clinical Study Report	
Yes - There is 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	
Title and more details about the data/document	
All data is potentially shareable after de-identifying individuals	
When the data will become available and for how long	6 months after the results are published
	To whom data/document is available
	Researchers working in academic institutions
	Under which criteria data/document could be used
	If someone wants to do a similar research project
	From where data/document is obtainable
	Gholam hossain nassadj
	What processes are involved for a request to access data/document
	By email, stating the reason and purpose
	Comments