Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 2026

Comparison of the immediate effect of self-release, static stretching and Graston technique in the Iliotibial band and tibialis anterior muscle on the range of motion and proprioception of the neck of athletes

Protocol summary

Study aim
Evaluation of the immediate effect of myofascial release interventions of the iliotibial band and tibialis anterior muscle on the proprioception and range of motion of the neck

Design
Clinical trial with control group, with parallel groups, No blinding, randomized, on 100 people, lottery was used for randomization.

Settings and conduct
Place of study: Faculty of Physical Education, University of Tehran; Study population: athletes; Type of blinding: without blinding

Participants/Inclusion and exclusion criteria
Inclusion criteria: male; age range from 18 to 40 years; People who want to take the test and complete the consent form; No history of musculoskeletal pain in the last two weeks Exclusion criteria: hypermobility; Using flexibility and yoga exercise programs for more than 6 months; severe orthopedic problem; 6 months history of back pain, neck pain and soft tissue damage; Fibromyalgia and other psychological problems

Intervention groups
Intervention group 1: including release with the help of a foam roller and massage ball of the anterior calf muscle and iliotibial band by the person himself; Intervention group 2: static stretching of anterior calf muscle and iliotibial band by the researcher; Intervention group 3: Graston technique of anterior calf muscle and iliotibial band by the researcher; Control group: doing ten minutes stationary bike

Main outcome variables
Neck range of motion; Neck proprioception

General information

Reason for update

Acronym

IRCT registration information
IRCT registration number: **IRCT20240521061862N1**
Registration date: **2024-07-02, 1403/04/12**
Registration timing: **prospective**

Last update: **2024-07-02, 1403/04/12**
Update count: **0**

Registration date
2024-07-02, 1403/04/12

Registrant information

Name
Behrouz Jafari
Name of organization / entity
The university of Tehran
Country
Iran (Islamic Republic of)
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Recruitment status
Recruitment complete

Funding source

Expected recruitment start date
2024-07-20, 1403/04/30

Expected recruitment end date
2024-08-20, 1403/05/30

Actual recruitment start date
empty

Actual recruitment end date
empty

Trial completion date
empty

Scientific title

Comparison of the immediate effect of self-release, static stretching and Graston technique in the Iliotibial band and tibialis anterior muscle on the range of motion and proprioception of the neck of athletes

Public title
Immediate effect of self-release on neck range of motion and proprioception

Purpose
Prevention

Inclusion/Exclusion criteria

Inclusion criteria:
Being male Age range from 18 to 40 years People who want to take the test and complete the consent form.

Exclusion criteria:
Hypermobility (Beton test score 4 and more) Using flexibility and yoga exercise programs for more than 6 months Severe orthopedic problem 6 months history of back pain, neck pain and soft tissue damage Fibromyalgia and other mental problems (using the GHQ-12 general health questionnaire) Having a history of surgery History of musculoskeletal pain in the last two weeks

Age
From **18 years** old to **40 years** old

Gender
Male

Phase
2-3

Groups that have been masked
No information

Sample size
Target sample size: **100**

Randomization (investigator's opinion)
Randomized

Randomization description
After identifying the people to participate in the research, a simple randomization method was used. In such a way that the selection of participants was completely based on chance and probability and every participant had the same chance to enter the sample. The main factor for us was that each participant had an equal chance of being placed in each group. Then, with the lottery method, the names of the people were written on paper and placed in a container, and someone other than the researchers randomly picked the names, and the names that were the first to leave the intervention group and the rest of the control group. In the randomization process, the researchers had no involvement and this work was done by an uninformed person.

Blinding (investigator's opinion)
Not blinded

Blinding description

Placebo
Used

Assignment
Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee
Ethics committee in Research, Faculty of Sports and Health Sciences, University of Tehran

Street address
No. 195, Valiasr alley, Ghari street, Heydari street, Sabalan

City
Tehran

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Tehran

Postal code
1636818665

Approval date
2024-03-03, 1402/12/13

Ethics committee reference number
IR.UT.SPORT.REC.1402.129

Health conditions studied

1

Description of health condition studied
Limitation of neck range of motion

ICD-10 code
M54.2

ICD-10 code description
Cervicalgia

Primary outcomes

1

Description
Neck range of motion including flexion, extension, lateral flexion and rotation

Timepoint
Before and immediately after intervention

Method of measurement
Using the Measure Angles Bubble Level protractor and protractor version 3.99.92 application on the iPhone 13 Pro Max smartphone

2

Description
Neck proprioception

Timepoint
Before and immediately after intervention

Method of measurement
Angle reconstruction error method to check the proprioceptive condition using laser pen and graduated plate

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group 1: self-release of the tibialis anterior muscle and iliotibial band using a foam roller and a massage ball by the person himself in such a way that the person, while sitting on the floor, places the ball under the anterior part of the leg of one of the legs and puts pressure on the leg with the opposite hand. Slowly move the leg up and down and release the muscle and finally do the opposite side. To release the iliotibial band, the person is asked to lie on his side and place the foam roller under the outer part of the femur of the lower leg, in the path of the iliotibial band, and transfer his weight to the elbow and the point of contact with the foam roller, and place both legs in stick together in a completely flat position and slowly move up and down, if the person is unable to perform this movement due to pain, a modified method is used in such a way that the person puts the upper leg on the sole of the foot while doing it. The ground rests in front of the body and transfers some of its weight on it. In this study, release is done for each member for 2 minutes

Category

Prevention

2

Description

Intervention group 2: static stretching of the tibialis anterior muscle and iliotibial band will be done passively by the researcher, to stretch the tibialis anterior muscle, the person is asked to lie on the bed, the researcher takes the person's ankle to plantar flexion and places his palm on the participant finger and presses down with the ankle, pauses for 40 seconds, and after 10 seconds rest, repeats this three times. To stretch the iliotibial band, the person is asked to lie on his side next to the edge of the bed and bring his upper leg back a little, and the researcher slowly, without allowing the knee flexion and the lumbar spine to move out of the normal position, put the leg to the person, take the side down and stretch the iliotibial band for 3 sets of 40 seconds, stretching exercises for both sides

Category

Prevention

3

Description

Intervention group 3: The Graston technique on the tibialis anterior muscle and the iliotibial band will be performed by the researcher who has been trained in this method in the offline courses of the rehabilitation site and has three years of experience working with this tool. The method of execution is that the person lies on the bed with shorts or a bathing suit on his side, bends his knees at a 90 degree angle, and the examiner with the Graston metal after sliding the outer part of the thigh at an angle of 30 degrees from the proximal part to the distal part will perform the release. To release the anterior calf muscle, the person lies on the bed in the supine position and stretches the legs, and the tester slides the surface at an angle of 30 degrees from the proximal to the distal direction. The release time for each part will be 2 minutes. The technique is performed in 8 minutes for each person

Category

Prevention

4

Description

Control group: ride a stationary bike at a speed of 6-8 for ten minutes.

Category

Prevention

Recruitment centers

1

Recruitment center

Name of recruitment center

Tehran University

Full name of responsible person

Behrouz Jafari

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Faculty of Physical Education, University of Tehran

Full name of responsible person

Reza Rajabi

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Grant name

Grant code / Reference number

Is the source of funding the same sponsor organization/entity?
No

Title of funding source
Faculty of Physical Education, University of Tehran

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, University of Tehran

Full name of responsible person
Behrouz Jafari

Position
Doctoral student

Latest degree
Master

Other areas of specialty/work
Sport Injuries & Corrective Exercises

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Latest degree
Master

Other areas of specialty/work
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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
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