

# Clinical Trial Protocol

## Iranian Registry of Clinical Trials

09 Jun 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)

##### Phone

+98 21 8602 0153

##### Email address

jaffari\_behroz@yahoo.com

##### 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

##### Province

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

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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

##### Street address

Faculty of Physical Education and Sport Sciences, between 15th and 16th St., North Kargar st., Tehran, Islamic Republic

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##### Province

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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  
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## Person responsible for scientific inquiries

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## Person responsible for updating data

### Contact

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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