

# Clinical Trial Protocol

## Iranian Registry of Clinical Trials

10 Jun 2026

### The acute effect of dynamic stretching followed by foam roller and a vibration foam roller on the function of squash players

#### Protocol summary

##### Study aim

The aim of this study was to investigate the effect of dynamic stretching exercises and vibrating foam roller in the warm-up program on the function of squash players

##### Design

The clinical trial will be conducted in parallel groups, single-blinded, randomized, on 32 men, and sealed envelopes will be used for randomization by an anonymous person with research conditions.

##### Settings and conduct

The participants will be male athletes between the ages of 16 and 25 who will be selected from athletes with a history of playing squash. This research will be conducted in the Sports injury and Corrective exercise Laboratory of the Faculty of Physical Education, University of Guilan. After obtaining consent from the participants, they will be divided into two groups using sealed envelopes. The subjects will not be informed of the group in which the other subjects are present. The research process will be carried out within a week and assessments will be made.

##### Participants/Inclusion and exclusion criteria

participants will be in the age range of 16 to 25 years.  
participants in this study will be male squash players only.  
participants will complete the warm-up program.

##### Intervention groups

Intervention group 1: will receive dynamic stretching exercises along with exercises using a vibrating foam roller. Intervention group 2: will receive dynamic stretching exercises along with exercises using a foam roller.

##### Main outcome variables

Quadriceps and hamstring flexibility, agility and reaction time

#### General information

##### Reason for update

##### Acronym

#### IRCT registration information

IRCT registration number: **IRCT20250703066358N2**

Registration date: **2025-11-04, 1404/08/13**

Registration timing: **prospective**

Last update: **2025-11-04, 1404/08/13**

Update count: **0**

#### Registration date

2025-11-04, 1404/08/13

#### Registrant information

##### Name

Omid Shahani

##### Name of organization / entity

University of Guilan

##### Country

Iran (Islamic Republic of)

##### Phone

+98 13 3369 0255

##### Email address

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#### Recruitment status

**Recruitment complete**

#### Funding source

#### Expected recruitment start date

2025-11-07, 1404/08/16

#### Expected recruitment end date

2025-11-15, 1404/08/24

#### Actual recruitment start date

empty

#### Actual recruitment end date

empty

#### Trial completion date

empty

#### Scientific title

The acute effect of dynamic stretching followed by foam roller and a vibration foam roller on the function of squash players

**Public title**

The effect of stretching exercises combined with foam roller on the function of squash players

**Purpose**

Prevention

**Inclusion/Exclusion criteria****Inclusion criteria:**

The participant's were male and range in age from 16 to 25 years The participant's had a regular sports history in squash for at least three years

**Exclusion criteria:**

Unwillingness to participate in research Presence of musculoskeletal injuries

**Age**

From **16 years** old to **25 years** old

**Gender**

Male

**Phase**

N/A

**Groups that have been masked**

- Participant

**Sample size**

Target sample size: **32**

**Randomization (investigator's opinion)**

Randomized

**Randomization description**

Randomization of participant's into groups will be done using sealed envelopes. Inside the envelopes will be papers A and B. The participant's who chooses envelope A will be placed in the first group (stretching exercises with foam roller) and the participant's who chooses envelope B will be placed in the second group (stretching exercises with vibrating foam roller).

**Blinding (investigator's opinion)**

Single blinded

**Blinding description**

Blinding of participant's using sealed envelopes labeled A and B, indicating the training group of stretching exercises with vibrating foam roller (A) and stretching exercises with regular foam roller (B). participant's will randomly select an envelope and be assigned to the desired group. Participants will not be informed of the placement of other participant's in the groups.

**Placebo**

Not used

**Assignment**

Parallel

**Other design features****Secondary Ids**

empty

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

Research Ethics Committees of University of Guilan

**Street address**

Guilan University Complex, 5th km of Tehran Road, Persian Gulf Highway, Rasht.

**City**

Rasht

**Province**

Guilan

**Postal code**

4199613776

**Approval date**

2024-07-13, 1403/04/23

**Ethics committee reference number**

IR.GUILAN.REC.1403.067

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

The disease will not be investigated

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

Quadriceps flexibility

**Timepoint**

In two stages pre-test and after applying the desired intervention in the post-test

**Method of measurement**

The flexibility of the quadriceps will be measured with the Alley test. The participants will lie prone and the evaluator will place a plastic goniometer on the participants knee. The fixed arm of the ruler will be positioned in line with the greater trochanter of the femur, the movable arm will be positioned in line with the lateral ankle. The pelvis will be prevented from lifting off the floor while the knee is flexed. The average of the two measurements will be recorded as the standard.

**2****Description**

Hamstring flexibility

**Timepoint**

In two stages pre-test and after applying the desired intervention in the post-test

**Method of measurement**

The knee extension angle test is performed to measure hamstring flexibility with the participants lying on their back with both legs in full knee extension. The participants hip and knee are flexed to 90 degrees and the opposite leg is fixed to the bed. Clinically, the endpoint is reached when the examiner feels slight resistance or the subject reports a strong but tolerable stretch in the hamstring muscle. The goniometer is placed on the participants knee, with the fixed arm at maximum knee extension and the other arm in line with the lateral ankle.

### 3

#### **Description**

Agility

#### **Timepoint**

In two stages pre-test and after applying the desired intervention in the post-test

#### **Method of measurement**

The T-test is used to measure the agility of individuals. This test will be performed in such a way that four marks are placed on the ground in the form of a T and the participants will stand behind the initial mark. Then, with the whistle, he will run 10 yards towards the opposite mark and then change direction to the left and go 5 yards in a footbox manner towards the next mark. After reaching the next mark, he will go 10 yards to the right of the footbox and after touching the 5-yard mark, he will go to the left of the footbox and after reaching the next mark, he will run 10 yards back and after passing the initial mark, his time in seconds will be recorded as a measure for assessing agility.

### 4

#### **Description**

Reaction time

#### **Timepoint**

In two stages pre-test and after applying the desired intervention in the post-test

#### **Method of measurement**

Dropping a ruler is a method of estimating reaction time. The participants will be asked to place their dominant hand horizontally on a table in a resting position. The examiner will hang the ruler vertically so that the other end of the ruler is in line with the top of the participants open hand. When the examiner drops the ruler, the participants must pick it up as quickly as possible. The time will be recorded in seconds and will be used as a measure of reaction time.

## **Secondary outcomes**

empty

## **Intervention groups**

### 1

#### **Description**

First Intervention group : The participants will run for 3 minutes at a moderate pace (so that the person can talk easily). Then they will perform dynamic stretching exercises in the lower and upper limbs. After performing dynamic stretching exercises, the participants will perform vibrating foam roller exercises. These exercises include 5 movements in the hamstring, gastrocnemius, rotator cuff, quadriceps, and back and lumbar muscles, each lasting 20 seconds. The vibrating foam roller exercises will be performed at an intensity of 30HZ.

#### **Category**

Prevention

### 2

#### **Description**

Second Intervention group: The participants will run for 3 minutes at a moderate pace (so that the person can talk easily). Then they will perform dynamic stretching exercises in the lower and upper limbs. After performing dynamic stretching exercises, the participants will perform foam roller exercises. These exercises include 5 movements in the hamstrings, gastrocnemius, rotator cuff, quadriceps, and back and lumbar muscles, each lasting 20 seconds.

#### **Category**

Prevention

## **Recruitment centers**

### 1

#### **Recruitment center**

##### **Name of recruitment center**

Sports injuries and Corrective Exercise Laboratory,  
Faculty of Physical Education and Sport Science

##### **Full name of responsible person**

Ali Shamsi Majelan

##### **Street address**

Guilan University Complex, 5th km of Tehran Road,  
Persian Gulf Highway, Rasht.

##### **City**

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##### **Province**

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##### **Email**

alishamsim@yahoo.com

## **Sponsors / Funding sources**

### 1

#### **Sponsor**

##### **Name of organization / entity**

University of Guilan

##### **Full name of responsible person**

Dr Ali Bani

##### **Street address**

Guilan University Complex, 5th km of Tehran Road,  
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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**

Laboratory facilities

**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**

Persons

## Person responsible for general inquiries

**Contact**

**Name of organization / entity**

University of Guilan

**Full name of responsible person**

Ali Shamsi Majelan

**Position**

Associate professor

**Latest degree**

Ph.D.

**Other areas of specialty/work**

Sport injury and corrective exercise

**Street address**

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## Person responsible for scientific inquiries

**Contact**

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## Person responsible for updating data

**Contact**

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## Sharing plan

**Deidentified Individual Participant Data Set (IPD)**

No - There is not a plan to make this available

**Justification/reason for indecision/not sharing IPD**

There is no further information.

**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**

No - There is not a plan to make this available

**Data Dictionary**

No - There is not a plan to make this available

**Title and more details about the data/document**

The analyzed data from the research results will be used for publication in scientific studies and will be published in general.

**When the data will become available and for how long**

After the study is published in a reputable, international journal, the data resulting from the analysis that have been peer-reviewed will be made available in accordance with the journal's publication policies.

**To whom data/document is available**

In accordance with the publication's publishing policies, any person requesting to use the data in question must act in accordance with the same policies.

**Under which criteria data/document could be used**

Necessary measures must be taken in accordance with

the publication policies of the journal.

**From where data/document is obtainable**

The person in charge of this research is Dr. Ali Shamsi Majelan. Requests can be sent via the email address Alishamsim@yahoo.com

**What processes are involved for a request to access data/document**

Submitted requests will be reviewed and responded to within a maximum of 2 business days.

**Comments**