Clinical Trial Protocol
Iranian Registry of Clinical Trials

08 Nov 2026

The role of stretching protocols in enhancing post-fatigue performance and flexibility in soccer

Protocol summary

Study aim

The study compares the effects of static stretching, slow dynamic stretching, and fast dynamic stretching on performance recovery, flexibility, balance, speed, and agility after a functional fatigue protocol in football players. Additionally, it aims to identify the most effective stretching technique for maintaining or enhancing performance after fatigue in football players.

Design

The present study includes 40 participants. The participants will be randomly assigned to four groups—static stretching, fast dynamic stretching, slow dynamic stretching, and control—using simple randomization and the method of random assignment by drawing names from a ball.

Settings and conduct

In the present study, participants will perform the research interventions and the fatigue protocol at their training location.

Participants/Inclusion and exclusion criteria

Participants must have a body mass index (BMI) of 20-25 and no history of lower limb injury, trauma, or disease in the past six years, along with a limited range of motion. Additionally, they must have at least three years of regular training experience in football (three sessions per week) and should not be simultaneously participating in any other lower limb stretching program.

Intervention groups

The present study includes four groups: static stretching, fast dynamic stretching, slow dynamic stretching, and control. The first three groups perform their intervention program in a single session following a functional fatigue protocol, while the control group does not receive any intervention after fatigue.

Main outcome variables

The outcome variables of the present study are improvement in balance, flexibility, agility, and vertical jump performance.

General information

Reason for update

Since this study was conducted in a single-blind manner, the blinding procedure section has been updated.

Acronym

IRCT registration information

IRCT registration number: **IRCT20230612058457N5**
Registration date: **2025-03-07, 1403/12/17**
Registration timing: **prospective**

Last update: **2025-08-29, 1404/06/07**
Update count: **2**

Registration date

2025-03-07, 1403/12/17

Registrant information

Name
Mohammad Alimoradi
Name of organization / entity
Shahid Bahonar University
Country
Iran (Islamic Republic of)
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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2025-03-24, 1404/01/04

Expected recruitment end date

2025-04-02, 1404/01/13

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title
The role of stretching protocols in enhancing post-fatigue performance and flexibility in soccer

Public title
Comparison of three stretching protocols after fatigue in football players

Purpose
Prevention

Inclusion/Exclusion criteria

Inclusion criteria:
Body Mass Index (BMI) 20-25 No history of lower limb injury, trauma, or disease in the past six years, with limited range of motion. Participants must have at least three years of regular training experience in football (three sessions per week). No participation in a lower limb stretching program. Participants should be aged between 18-25 years old.

Exclusion criteria:

Age
From **18 years** old to **25 years** old

Gender
Male

Phase
N/A

Groups that have been masked

- Outcome assessor

Sample size
Target sample size: **40**

Randomization (investigator's opinion)
Randomized

Randomization description
In the present study, participants are randomly assigned to four groups—static, slow dynamic, fast dynamic, and control—using a lottery draw method by pulling names from a ball.

Blinding (investigator's opinion)
Single blinded

Blinding description
After assigning participants to each group, the outcome assessor was unaware of (or: was blinded to) the group allocation.

Placebo
Not used

Assignment
Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee
Ethics committee of Bu-Ali Sina University, Hamedan

Street address
Bu-Ali Sina University, Chaharbagh-e Shahid Mostafa Ahmadi Roshan, Hamedan

City
Hamedan

Province
Hamadan

Postal code
۶۵۱۷۸۳۸۶۹۵

Approval date
2025-02-17, 1403/11/29

Ethics committee reference number
IR.BASU.REC.1403.064

Health conditions studied

1

Description of health condition studied
Comparison of three types of stretching protocols pre and post of functional fatigue in soccer players

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description
In the present study, flexibility is being examined.

Timepoint
Before and after the application of the fatigue protocol.

Method of measurement
Flexibility is assessed using the modified Thomas test and PKET.

2

Description
In the present study, balance is being investigated.

Timepoint
Before and after the application of the fatigue protocol.

Method of measurement
Balance is measured using the Y Balance Test.

3

Description
In the present study, agility is being investigated.

Timepoint
Before and after the application of the fatigue protocol.

Method of measurement
Agility is evaluated using the Illinois Agility Test

4

Description
In the present study, speed is being examined.

Timepoint
Before and after the application of the fatigue protocol.

Method of measurement
Speed is assessed using the 20-meter sprint test.

5

Description
In the present study, vertical jump is being examined.
Timepoint
Before and after the application of the fatigue protocol.
Method of measurement
Vertical jump is assessed using the countermovement jump test.

Secondary outcomes

empty

Intervention groups

1

Description
Intervention group: Static stretching of the hamstrings and quadriceps will include standing hamstring stretches (standing with feet hip-width apart and knees straight, participants bend forward while lowering their heads and wrapping their hands around the calf of one leg) followed by calf raises (from an initial standing position with knees straight, participants raise one leg upward while bending at the hip). Quadriceps stretching will be performed using a standing quadriceps stretch (participants stand on one leg while bending the opposite knee and holding it behind them with one hand for balance) followed by lunges (participants position one foot forward and one foot back while bending the front knee). Each stretch will be held for 30 seconds with two repetitions (once for each leg).
Category
Prevention

2

Description
Intervention group: The fast dynamic group will perform the stretches like the static group, with the only difference being that each movement will be done at 100 beats per minute.
Category
Prevention

3

Description
Intervention group: The fast dynamic group will perform the stretches like the static group, with the only difference being that each movement will be done at 50 beats per minute.
Category
Prevention

4

Description
Control group: The control group will engage in 5 minutes of active rest in the form of walking.
Category
Prevention

Recruitment centers

1

Recruitment center
Name of recruitment center
Śhahin Football Club
Full name of responsible person
Mohammad Alimoradi
Street address
Unit 6, Yekta Complex, 12th Alley, Fathali Shahi Street.
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malimoradi@sport.uk.ac.ir

Sponsors / Funding sources

1

Sponsor
Name of organization / entity
The University of Bu-Ali Sina
Full name of responsible person
Arash Ghorbani
Street address
The University of Bu-Ali, Shahid Fahmideh St, Hamedan
City
Hamedan
Province
Hamadan
Postal code
6517838695
Phone
+98 81 3140 5555
Email
a.ghorbani@yahoo.com
Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
Yes
Title of funding source
The University of Bu-Ali Sina
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

Shahid Bahonar University

Full name of responsible person

Mohammad Alimoradi

Position

Graduated Student

Latest degree

Master

Other areas of specialty/work

Sport Medicine

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Person responsible for scientific inquiries

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Full name of responsible person

Mohammad Alimoradi

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Person responsible for updating data

Contact

Name of organization / entity

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Full name of responsible person

Mohammad Alimoradi

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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

No - There is not a plan to make this available

Analytic Code

Yes - There is a plan to make this available

Data Dictionary

Yes - There is a plan to make this available

Title and more details about the data/document

All data will be shared after anonymizing individuals, ensuring their non-identifiability.

When the data will become available and for how long

The data access period will start immeduately after the results are printed.

To whom data/document is available

The data will be made available to researchers, organizations, and institutions related to the field of football and also for publication in accessible journals.

Under which criteria data/document could be used

In order to assist scientific research and promote the implementation of executive goals with a focus on reducing musculoskeletal injuries and enhancing the performance of football players in the field,

From where data/document is obtainable

Mohammad Alimoradi/malimoradi@sport.uk.ac.ir

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

Requests for access to data will be answered within a week

Comments