# Clinical Trial Protocol
# Iranian Registry of Clinical Trials

09 Nov 2026

## The effect of soccer-specific fatigue on two-dimensional trunk and lower limb kinematics during single-leg landing in soccer players

### Protocol summary

**Study aim**
The aim of this study is to investigate the effect of soccer-specific fatigue on two-dimensional trunk and lower extremity kinematics during single-leg landing in male soccer players aged 18–25 years

**Design**
This study is a single-group quasi-experimental pretest–posttest trial involving 20 male soccer players aged 18–25 years. Participants will be recruited through purposive sampling and will undergo a soccer-specific fatigue protocol. Trunk and lower extremity kinematic variables will be assessed before and immediately after the intervention. The study does not include randomization or blinding and will be conducted as a single-center trial.

**Settings and conduct**
The desired tests will be taken at the Sports Rehabilitation Laboratory of Bu-Ali Sina University, Hamadan, by specialists in this field.

**Participants/Inclusion and exclusion criteria**
Inclusion Criteria: Male soccer players aged 18–25 years who are in good general health, regularly participate in soccer training and competition, and provide written informed consent after receiving a full explanation of the study procedures will be eligible for inclusion. Exclusion Criteria: Inability or unwillingness to complete the soccer-specific fatigue protocol, occurrence of any injury or discomfort during testing, presence of musculoskeletal abnormalities of the pelvis or lower extremities, history of fracture, surgery, joint disorders, or neuromuscular conditions affecting movement performance, pathological signs involving the spine, shoulder girdle, or pelvic girdle, and withdrawal from the study at any stage will be considered exclusion criteria.

**Intervention groups**
Soccer-Specific Fatigue Group

**Main outcome variables**
Two-dimensional trunk and lower extremity kinematics during single-leg landing.

### General information

**Reason for update**
Edit the date of registration of the code of ethics

**Acronym**

**IRCT registration information**
IRCT registration number: **IRCT20260620069887N1**
Registration date: **2026-06-26, 1405/04/05**
Registration timing: **prospective**

Last update: **2026-06-28, 1405/04/07**
Update count: **1**

**Registration date**
2026-06-26, 1405/04/05

**Registrant information**

**Name**
Raziyeh Taheri

**Name of organization / entity**
Bu-ali sina-hamedan

**Country**
Iran (Islamic Republic of)

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+98 81 3323 2831

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**Recruitment status**
**Recruitment complete**

**Funding source**

**Expected recruitment start date**
2026-07-04, 1405/04/13

**Expected recruitment end date**
2026-08-01, 1405/05/10

**Actual recruitment start date**
empty

**Actual recruitment end date**
empty

**Trial completion date**
empty

**Scientific title**
The effect of soccer-specific fatigue on two-dimensional trunk and lower limb kinematics during single-leg landing in soccer players

**Public title**
Effects of Fatigue on Trunk and Lower Extremity Kinematics During Landing Tasks in Soccer Players

**Purpose**
Treatment

**Inclusion/Exclusion criteria**

**Inclusion criteria:**
Male soccer players aged 18–25 years At least 3 years of regular soccer participation Regular participation in soccer training Willingness to participate and provision of written informed consent No lower-extremity musculoskeletal injury during the previous 6 months

**Exclusion criteria:**
History of surgery involving the lower extremities, pelvis, or spine History of fracture or severe injury involving the lower extremities, pelvis, or spine Structural or functional abnormalities of the pelvis or lower extremities Neurological, musculoskeletal, or balance disorders affecting motor performance Use of medications affecting balance or neuromuscular function

**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: **20**

**Randomization (investigator's opinion)**
Randomized

**Randomization description**
eligible participants were randomly allocated to the study groups. Randomization was performed using the Random Number Generator software. A random number was assigned to each participant, and group allocation was determined according to the generated random sequence.

**Blinding (investigator's opinion)**
Single blinded

**Blinding description**
The outcome assessor was blinded to participants' group allocation throughout data collection and analysis

**Placebo**
Not used

**Assignment**
Parallel

**Other design features**

## Secondary Ids

empty

## Ethics committees

### 1

**Ethics committee**

**Name of ethics committee**
Eyhics committee of Bu Ali Sina University

**Street address**
Hamadan, Modares Town, Abu Taleb Street, Bu Ali Sina University

**City**
hamedan

**Province**
Hamadan

**Postal code**
3869565178

**Approval date**
2026-04-18, 1405/01/29

**Ethics committee reference number**
IR.BASU.REC.1405.010

## Health conditions studied

### 1

**Description of health condition studied**
assessment of trunk and lower extremity kinematic changes following soccer-specific fatigue and lower extremity injury risk factors

**ICD-10 code**
Z13.8

**ICD-10 code description**
Encounter for screening for other specified diseases and disorders

## Primary outcomes

### 1

**Description**
Trunk flexion/extension angle, knee flexion angle, dynamic knee valgus angle, and ankle dorsiflexion/plantarflexion angle during single-leg landing

**Timepoint**
Before the intervention begins, One day after the end of the intervention

**Method of measurement**
Trunk and lower extremity kinematic variables during single-leg landing will be measured using two-dimensional video recording and analyzed with Kinovea software. Joint and trunk angles will be calculated in degrees and assessed before and immediately after the soccer-specific fatigue protocol.

## Secondary outcomes

empty

## Intervention groups

**1**

**Description**
Intervention group: Soccer-Specific Fatigue Group
**Category**
Prevention

## Recruitment centers

**1**

**Recruitment center**
**Name of recruitment center**
Hamadan Province Sports Directorate
**Full name of responsible person**
heidar aldalimi
**Street address**
Hamadan, Modares Town, Abu Taleb Street, Bu Ali Sina University
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## Sponsors / Funding sources

**1**

**Sponsor**
**Name of organization / entity**
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Farzane saki
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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**
Bu Ali Sina University
**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**
Bu Ali Sina University
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heidar aldalimi
**Position**
student
**Latest degree**
Bachelor
**Other areas of specialty/work**
Sport Rehabilitation
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## Person responsible for updating data

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**Latest degree**
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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