

Clinical Trial Protocol

Iranian Registry of Clinical Trials

11 Sep 2026

The effect of PRI and Osar core stability exercises with using breathing approach on reducing the risk of lower extremity injuries in female futsal player

Protocol summary

Study aim

To investigate the effect of PRI- and OSAR-based core stability exercises on reducing lower-extremity injury risk factors in female futsal players.

Design

Randomized clinical trial (RCT) with pretest-posttest and control group.

Settings and conduct

The study will be conducted in selected sports clubs in Tehran without blinding.

Participants/Inclusion and exclusion criteria

39 female players (16-25 yrs) with ≥ 6 months futsal training, core deficiency (McGill), no prior lower-limb injury/surgery. Exclusion: absence ≥ 2 consecutive sessions or any injury.

Intervention groups

PRI Group (Core stability exercises using PRI method): Participants performed specific exercises for 8 weeks, 3 sessions per week, aimed at improving postural alignment, trunk and pelvic control, and correcting breathing patterns. The main emphasis was on activating deep core muscles and guided diaphragmatic breathing. Exercises included: 90/90 Hip Lift with Balloon, 90/90 Hemi bridge with Balloon, breathing exercises in various positions, etc. Each session included 5–10 minutes of warm-up and cool-down. OSAR Group (Core stability exercises using OSAR method): This group also performed 8 weeks, 3 sessions per week of exercises designed to improve neuromuscular control, trunk-pelvis-thigh coordination, and correct lower extremity movement patterns. Exercises were primarily bodyweight without specialized equipment, including: squat, forward lunge, hip hinge, pelvic tilt, modified wall plank with hip flexion, pull-over, etc. Emphasis was on movement control in correct patterns and coordination of breathing with movement. Control Group: The control group received no intervention other than their routine

team training.

Main outcome variables

LESS score (landing quality), TJA indices (dynamic knee valgus), and Functional Popliteal Angle (FPA).

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20221231056996N1**

Registration date: **2026-06-03, 1405/03/13**

Registration timing: **prospective**

Last update: **2026-06-03, 1405/03/13**

Update count: **0**

Registration date

2026-06-03, 1405/03/13

Registrant information

Name

Mohammadreza Seyedi

Name of organization / entity

Sport Sciences Research Institute

Country

Iran (Islamic Republic of)

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Email address

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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2026-06-10, 1405/03/20

Expected recruitment end date

2026-08-11, 1405/05/20

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

The effect of PRI and Osar core stability exercises with using breathing approach on reducing the risk of lower extremity injuries in female futsal player

Public title

The effect of PRI and Osar core stability exercises with using breathing approach on reducing the risk of lower extremity injuries in female futsal player

Purpose

Supportive

Inclusion/Exclusion criteria**Inclusion criteria:**

Age range between 16–25 years At least 6 months of regular futsal training experience Participants with core stability deficiency according to the McGill test assessment Participants must have no previous or chronic lower extremity injuries Participants must have no history of surgery in the lower extremity joints

Exclusion criteria:

Absence from 2 consecutive sessions or 3 sessions during the entire protocol implementation period Occurrence of injury in any of the participants during the research period, as reported by the individual or the coach

AgeFrom **16 years** old to **25 years** old**Gender**

Female

Phase

N/A

Groups that have been masked*No information***Sample size**Target sample size: **39****Randomization (investigator's opinion)**

Randomized

Randomization description

In this three-group study, eligible participants after meeting inclusion criteria will be assigned to three groups (two experimental groups and one control group) using simple randomization via online random number generation software (e.g., Random Allocation Software or Sealed Envelope). To ensure allocation concealment, the randomization results will be placed in opaque sealed envelopes, and both the researcher and participants will remain blinded to group allocation until the start of the intervention.

Blinding (investigator's opinion)

Not blinded

Blinding description**Placebo**

Not used

Assignment

Parallel

Other design features**Secondary Ids**

empty

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

Research Ethics Committee of the Sport Sciences Research Institute

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Motahhari st. MirEmad 5th

City

Tehran

Province

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Postal code

1587958711

Approval date

2025-09-22, 1404/06/31

Ethics committee reference number

IR.SSRC.REC.1404.092

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

The participants had no acute or chronic diseases or lower extremity injuries. The only identified problem was core stability deficiency (weakness in deep trunk muscle endurance) based on the McGill test.

ICD-10 code

M.62.8

ICD-10 code description

M62.8

Primary outcomes**1****Description**

Landing Error Scoring System (LESS) score as an indicator of landing quality

Timepoint

pre and post test evaluation

Method of measurement

video capture and questionnaire

Secondary outcomes

empty

Intervention groups**1****Description**

Control group: The control group received no intervention other than their routine team training.

Category

Rehabilitation

2

Description

PRI Group (Core stability exercises using PRI method): Participants performed specific exercises for 8 weeks, 3 sessions per week, aimed at improving postural alignment, trunk and pelvic control, and correcting breathing patterns. The main emphasis was on activating deep core muscles and guided diaphragmatic breathing. Exercises included: 90/90 Hip Lift with Balloon, 90/90 Hemi bridge with Balloon, breathing exercises in various positions, etc. Each session included 5-10 minutes of warm-up and cool-down.

Category

Rehabilitation

3

Description

Intervention group: OSAR Group (Core stability exercises using OSAR method): This group also performed 8 weeks, 3 sessions per week of exercises designed to improve neuromuscular control, trunk-pelvis-thigh coordination, and correct lower extremity movement patterns. Exercises were primarily bodyweight without specialized equipment, including: squat, forward lunge, hip hinge, pelvic tilt, modified wall plank with hip flexion, pull-over, etc. Emphasis was on movement control in correct patterns and coordination of breathing with movement.

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center

Mahtab

Full name of responsible person

Farzaneh Jalilvand

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Islamic Azad University

Full name of responsible person

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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

Islamic Azad University

Proportion provided by this source

100

Public or private sector

Private

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

Sport sciences research Institute

Full name of responsible person

Mohammadreza Seyedi

Position

Assistant professor

Latest degree

Ph.D.

Other areas of specialty/work

Sport Medicine

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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

Data information will be published only in the form of articles and statistical results.

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