Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 2026

The effect of core stability exercises on balance, endurance of trunk muscles and sports performance of taekwondo poomsae athletes with trunk defect

Protocol summary

Study aim
Investigation of the Effect of Core Stability Training on Balance, Trunk Muscle Endurance, and Athletic Performance of Poomsae Taekwondo Athletes with Trunk Impairment

Design
A controlled clinical trial with parallel groups, single-blind, randomized, phase II, conducted on 30 participants. Randomization will be performed using the RAND function in Excel.

Settings and conduct
All tests are conducted once before the intervention (training protocol) and once again after the intervention, and the results are recorded for each participant. Following the pre-tests, an eight-week core stability training program is implemented, consisting of three sessions per week, totaling 24 sessions. Each session lasts 60 minutes (10 minutes of warm-up and cool-down, 40 minutes of training program) and is conducted in groups at the Barzegari Taekwondo Academy.

Participants/Inclusion and exclusion criteria
Inclusion criteria: Male athletes active in Poomsae who regularly participate in sports activities. Age range between 18 and 25 years. Athletes' sports experience of at least 5 years and a maximum of 10 years. Athletes with trunk impairment are identified using the Tuck Jump Test. Exclusion criteria: Absence from two consecutive training sessions; presence of obvious dislocations or fractures in any part of the body; having other neurological disorders that may affect balance and muscle strength; having bone disorders or non-specific low back pain; sustaining a fracture or injury during training.

Intervention groups
ntervention group: Performs core stability exercises. Control group: Receives no intervention and only continues their daily activities.

Main outcome variables
Balance, trunk muscle endurance, and athletic performance

General information

Reason for update

Acronym

IRCT registration information
IRCT registration number: **IRCT20251216068361N1**
Registration date: **2025-12-20, 1404/09/29**
Registration timing: **prospective**

Last update: **2025-12-20, 1404/09/29**
Update count: **0**

Registration date
2025-12-20, 1404/09/29

Registrant information

Name
Mehrdad Mohammadzadeh

Name of organization / entity
The University of Guilan

Country
Iran (Islamic Republic of)

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mohammadzadeh79@webmail.guilan.ac.ir

Recruitment status
Recruitment complete

Funding source

Expected recruitment start date
2025-12-22, 1404/10/01

Expected recruitment end date
2026-03-01, 1404/12/10

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

The effect of core stability exercises on balance, endurance of trunk muscles and sports performance of taekwondo poomsae athletes with trunk defect

Public title

The Effect of Core Stability Training on Functional Components in Poomsae Taekwondo Athletes

Purpose

Supportive

Inclusion/Exclusion criteria

Inclusion criteria:

Male athletes active in the poomsae discipline who regularly engage in their sports activities. They should be within the age range of 18 to 25 years. The athletes have a minimum of 5 years and a maximum of 10 years of sports experience. Athletes with trunk impairment are identified using the Tuck Jump Test.

Exclusion criteria:

They should not have been absent from two consecutive training sessions. They should not have any apparent dislocations or fractures. They should not have any other neurological diseases that might affect balance and muscle strength. They should not have bone diseases or non-specific low back pain (without a clear and specific cause). They should not sustain a fracture or injury during training.

Age

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

Gender

Male

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **30**

Randomization (investigator's opinion)

Randomized

Randomization description

The individuals will be randomly placed in one of the two study groups with the help of a random number table and will receive the corresponding intervention.

Blinding (investigator's opinion)

Single blinded

Blinding description

Participants will be kept blind and will not be informed about how they are allocated to the study groups.

Placebo

Not used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Ethics committee in biomedical research of Guilan university

Street address

5th kilometer of Persian Gulf Highway, Rasht, Guilan Province, Iran

City

Rasht

Province

Guilan

Postal code

4199613776

Approval date

2024-10-21, 1403/07/30

Ethics committee reference number

IR.GUILAN.REC.1403.145

Health conditions studied

1

Description of health condition studied

Taekwondo athletes with neuromuscular deficits in the trunk

ICD-10 code

M62.9

ICD-10 code description

Disorder of muscle, unspecified

Primary outcomes

1

Description

Balance

Timepoint

Measurement of balance tests before and after an eight week study

Method of measurement

Stork Balance Test and Star Excursion Balance Test

2

Description

Trunk Muscle Endurance

Timepoint

Measurement of trunk muscle endurance tests before and after an eight week study

Method of measurement

Trunk flexion test at 60°, Biering–Sorensen test, Right and left side bridge tests, Plank test

3

Description
Sport Performance
Timepoint
Measurement of Sport performance tests before and after an eight week study
Method of measurement
Taekwondo kick test series

Secondary outcomes

empty

Intervention groups

1

Description
Intervention group: Core stability exercises for eight weeks, three days per week, 60 minutes per session
Category
Rehabilitation

2

Description
Control group: During the eight weeks, the control group performed their regular Taekwondo training three days per week.
Category
Rehabilitation

Recruitment centers

1

Recruitment center
Name of recruitment center
Barzegari Taekwondo Academy
Full name of responsible person
Ali Barzegari
Street address
Shahid Beheshti Street, Foroughi Esfahani Street, Hafez and Saadi Towers
City
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Postal code
3153833862
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+98 26 3226 1353
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Sponsors / Funding sources

1

Sponsor
Name of organization / entity
University of Guilan
Full name of responsible person
Dr. Ali Bani
Street address
5th kilometer of Persian Gulf Highway, Rasht, Guilan Province, Iran
City
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4199613776
Phone
+98 13 3332 8845
Email
bani@guilan.ac.ir
Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
No
Title of funding source
University of Guilan
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
University of Guilan
Full name of responsible person
Mehrdad Mohammadzadeh
Position
Student
Latest degree
Bachelor
Other areas of specialty/work
Corrective Exercises – Adapted Physical Education and Para-sports
Street address
5th kilometer of Persian Gulf Highway, Rasht, Guilan Province, Iran
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Other areas of specialty/work
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Person responsible for updating data

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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
Yes - There is 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 of the measured variables can be shared after de-identifying the participants.

When the data will become available and for how long
Data access begins from 2026

To whom data/document is available
Only for researchers affiliated with academic and scientific institutions.

Under which criteria data/document could be used
Scientific use for improvement and comparison with other studies is permitted.

From where data/document is obtainable
Email address for correspondence with the researcher to obtain necessary information: mehrdadnft1579@gmail.com

What processes are involved for a request to access data/document
The applicant must send the reason for using the documents via email, and after being reviewed by the researcher, a response will be provided as soon as possible. mehrdadnft1579@gmail.com

Comments