Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 2026

Comparison of the effects of modified exercise protocols based on self-natural posture exercises (SNPE) and dynamic neuromuscular stabilization (DNS) on posture, profile fitness mapping back questionnaire and lumbar kinematic in female employees with lower crossed syndrome.

Protocol summary

Study aim

Comparison of the effects of modified exercise protocols based on self-natural posture exercises (SNPE) and dynamic neuromuscular stabilization (DNS) on posture, profile fitness mapping back questionnaire and lumbar kinematic in female employees with lower crossed syndrome.

Design

42 female employees with LCS who are divided into three groups using the cluster method. two groups are the experimental and the other group is the control. Using GPower software and considering an effect size of 0.45, alpha of 0.05, and power of 0.80, 13 people were calculated for each group, and with an added margin of safety, 14 people in each group, totaling 42 people, will be considered as the research sample.

Settings and conduct

After identifying employees with lower crossed syndrome and having the consent form by volunteers, they attended the Vaght Zendegi sport club at specified hours and performed exercise sessions under the supervision of the respective trainer.

Participants/Inclusion and exclusion criteria

Entry Criteria: Being female, Lower cross syndrome, Having a history of mild to moderate low back pain, Absence of serious musculoskeletal diseases, Having an office job and sitting at a desk

Intervention groups

After dividing the participants into 3 equal groups using the cluster method, the first experimental group is given DNS exercises according to a specific protocol, 3 days a week for 8 weeks. The second group is also given modified SNPE according to a specified protocol, 3 days a week for 8 weeks, and for the control group, all ethical considerations will be taken into account after the completion of the study.

Main outcome variables

the measurement of lumbar lordosis (measured by a flexible ruler) and pelvic tilt (tilt meter) and the Matthias test; the PFM questionnaire; lumbar region kinematics from the sagittal view (squat movement) are all examined as pre-test and post-test.

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20260607069685N1**
Registration date: **2026-06-18, 1405/03/28**
Registration timing: **prospective**

Last update: **2026-06-18, 1405/03/28**
Update count: **0**

Registration date

2026-06-18, 1405/03/28

Registrant information

Name

Samin Aliakbari

Name of organization / entity

Country

Iran (Islamic Republic of)

Phone

+98 21 2624 7162

Email address

s.aliakbari@iau.ir

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date
2026-07-03, 1405/04/12
Expected recruitment end date
2026-08-28, 1405/06/06
Actual recruitment start date
empty
Actual recruitment end date
empty
Trial completion date
empty

Scientific title
Comparison of the effects of modified exercise protocols based on self-natural posture exercises (SNPE) and dynamic neuromuscular stabilization (DNS) on posture, profile fitness mapping back questionnaire and lumbar kinematic in female employees with lower crossed syndrome.

Public title
Comparison of the effects of two exersice protocols on posture, profile fitness mapping back questionnaire and lumbar kinematic.
Purpose
Supportive
Inclusion/Exclusion criteria
Inclusion criteria:
being a woman lower crossed syndrome Having a history of mild to moderate low back pain Having an office job and sedentary work
Exclusion criteria:
serious musculoskeletal diseases
Age
No age limit
Gender
Female

Phase
N/A
Groups that have been masked
No information
Sample size
Target sample size: **42**
Randomization (investigator's opinion)
Randomized
Randomization description
First, participants will be selected using a cluster sampling method. Then, 42 eligible female employees will be randomly allocated in a 1:1:1 ratio to the SNPE, DNS, and control groups using a random number table. The randomization sequence will be generated by a researcher not involved in participant assessment, and group allocation will be concealed using sealed, numbered envelopes.
Blinding (investigator's opinion)
Not blinded
Blinding description
Placebo
Not used
Assignment
Other

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee
Name of ethics committee
کمیته اخلاق پژوهشگاه تربیت بدنی
Street address
No 3, Fifth alley, Miremad Ave, Motahari st.
City
Tehran
Province
Tehran
Postal code
1587958711
Approval date
2026-02-17, 1404/11/28
Ethics committee reference number
IR.SSRC.REC.1404.140

Health conditions studied

1

Description of health condition studied
lower crossed syndrome
ICD-10 code
ICD-10 code description

Primary outcomes

1

Description
lumbar pasture
Timepoint
Before intervention and immediately after the 8-week intervention
Method of measurement
Lumbar lordosis angle using a flexible ruler and pelvic tilt using a tilt meter and the Matias test

2

Description
Profile Fitness Mapping Back Questionnaire Score
Timepoint
Before intervention and immediately after the 8-week intervention
Method of measurement
Functional readiness will be assessed using the Profile Fitness Mapping BackQuestionnaire.

3

Description

Lumbar kinematic from the sagittal view

Timepoint

Before intervention and immediately after the 8-week intervention

Method of measurement

squat test

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group: Participants will perform a modified SNPE exercise program for 8 weeks, 3sessions per week, 60 minutes per session. Exercises include corrective,stretching, strengthening and syndrome-specific movements.

Category

Rehabilitation

2

Description

Intervention group:Participants will perform a DNS exercise program for 8 weeks, 3 sessions perweek, 60 minutes per session. The program includes developmental movementpatterns, core activation and neuromuscular stabilization exercises.

Category

Rehabilitation

3

Description

Control group:Participants in the control group will continue their routine daily activities and willnot receive any specific exercise intervention

Category

N/A

Recruitment centers

1

Recruitment center

Name of recruitment center

Islamic Azad University, Sciences and Research

Full name of responsible person

Educational Assistant

Street address

Islamic Azad University, Science and Research Branch,Shohadayeh Hesarak Boulevard, Daneshgah Square

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Islamic Azad University

Full name of responsible person

Educational Assistant

Street address

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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

Private - Samin Aliakbari (student)

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

Persons

Person responsible for general inquiries

Contact

Name of organization / entity

Islamic Azad University

Full name of responsible person

Samin Aliakbari

Position

student

Latest degree

Master

Other areas of specialty/work

Sport Medicine

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Person responsible for scientific 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
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Person responsible for updating data

Contact

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Full name of responsible person
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Position
student

Latest degree
Master

Other areas of specialty/work
Sport Medicine

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Email
samin11379aliakbari@yahoo.com

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
Undecided - It is not yet known if there will be a plan to make this available

Clinical Study Report
Yes - There is 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

Title and more details about the data/document
Processed Data Related to the Effects of SNPE and DNS Exercises on Posture, Functional Readiness and Lumbar Kinematics

When the data will become available and for how long
After publication of study results

To whom data/document is available
Qualified Researchers

Under which criteria data/document could be used
Data will be available for scientific and research purposes only while maintaining participant confidentiality.

From where data/document is obtainable
Formal request via email to the principal investigator.

What processes are involved for a request to access data/document
Interested researchers should submit a formal request by email to the principal investigator. The request will be reviewed by the research team. If approved and compliant with ethical requirements, de-identified data/documents will be shared.

Comments