

Clinical Trial Protocol

Iranian Registry of Clinical Trials

10 Jun 2026

Comparison of the effect of two combined Pilates protocols on the level of pain, balance, range of motion and proprioception in young people with non-specific chronic low back pain

Protocol summary

Study aim

A comparative study of the effects of two combined Pilates protocols on pain, balance, range of motion, and proprioception in young people aged 20 to 30 years with chronic non-specific low back pain

Design

Dividing 30 people into 3 groups of 10 people, semi-experimental, applied and comparative study

Settings and conduct

Intervention in Hamedan city, using VAS questionnaire to assess pain, Stork test for static balance, Y test for dynamic balance, meter to assess lumbar range of motion and goniometer to measure lumbar proprioception

Participants/Inclusion and exclusion criteria

Inclusion criteria: 1) No respiratory problems 2) Age between 20 and 30 years 3) Normal body mass index (19 to 25) 4) No pathological problems, spinal stenosis, and disc herniation 5) Pain due to muscle weakness 6) History of back pain for more than three months 7) No abnormalities in the spine and lower limbs 8) No history of surgery in the spine and lower limbs 9) Self-reported pain 4 to 6 VAS index Inclusion criteria: 1) Feeling pain and disability during the training period 2) Absence in more than 2 sessions of the entire training program 3) Unwillingness of the subject to continue the research 4) Not participating in training sessions regularly

Intervention groups

Pilates exercises with walking group Pilates exercises with stretching exercises group Control group

Main outcome variables

Pain, static and dynamic balance, lumbar range of motion, lumbar proprioception

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20250920067295N1**
Registration date: **2026-02-14, 1404/11/25**
Registration timing: **prospective**

Last update: **2026-02-14, 1404/11/25**

Update count: **0**

Registration date

2026-02-14, 1404/11/25

Registrant information

Name

Fateme Azimi behmand

Name of organization / entity

The university of Shahid beheshti

Country

Iran (Islamic Republic of)

Phone

+98 81 3251 5205

Email address

fatemeazimibehmand5193@gmail.com

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2026-02-18, 1404/11/29

Expected recruitment end date

2026-03-19, 1404/12/28

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Comparison of the effect of two combined Pilates protocols on the level of pain, balance, range of motion and proprioception in young people with non-specific chronic low back pain

Public title

combined Pilates exercises

Purpose

Supportive

Inclusion/Exclusion criteria**Inclusion criteria:**

No respiratory problems Age between 20 and 30 years Normal body mass index (19 to 25) No pathological problems, spinal stenosis, or herniated discs Pain due to muscle weakness History of back pain for more than three months No abnormalities in the spine and lower extremities No history of surgery in the spine and lower extremities Self-reported pain 4 to 6 VAS index

Exclusion criteria:

Feeling pain and disability during the training period Absence from more than 2 sessions of the entire training program Unwillingness of the subject to continue the research Not participating in training sessions regularly

Age

From **20 years** old to **30 years** old

Gender

Both

Phase

3

Groups that have been masked

- Participant

Sample size

Target sample size: **30**

Randomization (investigator's opinion)

Randomized

Randomization description

Selecting 30 people by simple randomization using dice numbered from 1 to 30 for one of three groups of 10 people.

Blinding (investigator's opinion)

Single blinded

Blinding description

Informing participants about the general process of conducting the study and not being aware of things that could distort the test results.

Placebo

Not used

Assignment

Factorial

Other design features**Secondary Ids**

empty

Ethics committees**1****Ethics committee**

Name of ethics committee

Ethics Committee of Shahid Beheshti University

Street address

No. 33, Roshan Alley, Takhti Street

City

Hamedan

Province

Hamadan

Postal code

6514697358

Approval date

2024-10-14, 1403/07/23

Ethics committee reference number

IR.SBU.REC.1403.099

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

Chronic non-specific low back pain

ICD-10 code**ICD-10 code description****Primary outcomes****1****Description**

Plyometric Combination Protocol

Timepoint

Before the intervention, 8 weeks after the intervention

Method of measurement

VAS index questionnaire for pain assessment, stork test for static balance, Y test for dynamic balance, tape measure for lumbar range of motion, goniometer for pelvic proprioception

Secondary outcomes

empty

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

Intervention group: pilates with walking

Category

Rehabilitation

2**Description**

Intervention group: Pilates with stretching exercises

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center

Omid gym

Full name of responsible person

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

the university of shahid beheshti

Full name of responsible person

Deputy Director of Research and Technology

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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

the university of shahid beheshti

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

The university of Shahid beheshti

Full name of responsible person

Fateme azimi behmand

Position

Student

Latest degree

Bachelor

Other areas of specialty/work

Others

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Person responsible for scientific inquiries

Contact

Name of organization / entity

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Full name of responsible person

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Assistant professor

Latest degree

Ph.D.

Other areas of specialty/work

Rehabilitation management

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Person responsible for updating data

Contact

Name of organization / entity

Shahid Beheshti University

Full name of responsible person

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Position

Student

Latest degree

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Other areas of specialty/work

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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

Because the data is not in a form that can be used by others.

Study Protocol

Yes - There is a plan to make this available

Statistical Analysis Plan

No - There is not 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

No - There is not a plan to make this available

Data Dictionary

Not applicable

Title and more details about the data/document

Only part of the information that includes the result is published

When the data will become available and for how long

Access period starts 6 months after results are published

To whom data/document is available

Nobody

Under which criteria data/document could be used

Not applicable and not accessible

From where data/document is obtainable

Not accessible.

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

Not accessible.

Comments