

# 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**

Fateme azimi behmand

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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**

The university of Shahid beheshti

**Full name of responsible person**

Fariborz hovanloo

**Position**

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**

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**Latest degree**

Bachelor

**Other areas of specialty/work**

Others

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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**