

Clinical Trial Protocol

Iranian Registry of Clinical Trials

04 Aug 2026

Investigating the effects of adding kinesio taping to diaphragm strengthening exercise on pain, function and balance in women athletes with chronic non-specific low back pain

Protocol summary

Study aim

The aim of this study is to investigate the effect of adding taping to diaphragm strengthening exercises on pain, function and balance of women athletes with non-specific chronic low back pain compared to the control group.

Design

A randomized clinical trial with parallel, controlled, single blind groups, single phase on 32 patients, Online randomizer software and permutation method will be used for randomization.

Settings and conduct

In this study, 32 female athletes with non-specific chronic low back pain who refer to the physiotherapy clinic of Shiraz Rehabilitation Faculty from clubs scattered throughout the city will be randomly divided into two groups. The first group will receive tapping along with diaphragm strengthening exercises and the second group will receive only diaphragm strengthening exercises.

Participants/Inclusion and exclusion criteria

This study was conducted on female recreational athletes (30-50 years old) in the profession of bodybuilding with chronic non-specific low back pain. People who have a history of lung diseases or who are prohibited from using taping, are excluded from the study.

Intervention groups

Diaphragm strengthening exercises group: people with non-specific chronic low back pain who only receive diaphragm strengthening exercises. The considered strengthening breathing exercises are performed 2 times a day and at least 5 days a week for 4 weeks. Diaphragm strengthening exercises group with taping: People with non-specific chronic back pain who, in addition to strengthening breathing exercises according to the control group, received diaphragm muscle tapping every

4 days for 4 weeks. Samples from fitness clubs scattered throughout the city are included in the study.

Main outcome variables

Pain, function and balance level

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20190909044734N5**

Registration date: **2023-09-05, 1402/06/14**

Registration timing: **prospective**

Last update: **2023-09-05, 1402/06/14**

Update count: **0**

Registration date

2023-09-05, 1402/06/14

Registrant information

Name

Leila Abbasi

Name of organization / entity

Country

Iran (Islamic Republic of)

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+98 71 3627 1551

Email address

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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2023-10-07, 1402/07/15

Expected recruitment end date

2024-01-05, 1402/10/15

Actual recruitment start date

empty

Actual recruitment end date
empty

Trial completion date
empty

Scientific title
Investigating the effects of adding kinesio taping to diaphragm strengthening exercise on pain, function and balance in women athletes with chronic non-specific low back pain

Public title
The effects of adding diaphragm kinesio taping to strengthening exercise on pain, function and balance in women athletes with chronic non-specific low back pain

Purpose
Treatment

Inclusion/Exclusion criteria
Inclusion criteria:
 Having informed consent Female gender Recreational bodybuilding athletes who exercise between 4-6 hours a week Age range from 30 to 50 years old The numerical score of the pain scale at the time of entering the study and the average of 1 week should be between 3-7 Disability score of 50 or less based on ODI questionnaire Pain in the lower back for at least 3 months (12 weeks) or more
Exclusion criteria:
 History of known lung diseases History of cardiovascular surgery Chronic bronchitis Lung cancer Spondylolisthesis, fracture of the spine or history of its surgery Radicular low back pain Inflammatory backaches Neuropathy and myopathy History of rib fracture Surgery or thoracic fracture and abdominal surgery Cognitive and psychological change Patients with musculoskeletal abnormalities Pregnancy Spinal canal stenosis and previous spinal surgery People with cough and upper respiratory symptoms starting in the last few days Infection and inflammation in the thoracic region diabetes

Age
From **30 years** old to **50 years** old

Gender
Female

Phase
N/A

Groups that have been masked

- Outcome assessor
- Data analyser

Sample size
Target sample size: **32**

Randomization (investigator's opinion)
Randomized

Randomization description
In order to perform a random sequence with the help of randomizer software, permutation randomization method is used, in which 4 blocks (8 blocks) are prepared based on the total number of participants. In order to hide the random allocation by using non-transparent sealed envelopes which are prepared in advance according to

the number of the sample size of the study and keeping the random sequence, in the meeting when the person enters the study to collect data, one is taken and By opening that block and the desired group of the person is determined.

Blinding (investigator's opinion)

Single blinded

Blinding description

The person who will evaluate the patients and analyze the data is completely unaware of details of the patient grouping and the treatments performed.

Placebo

Not used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Ethics Committee in Research, Shiraz Faculty of Rehabilitation Sciences

Street address

Abiverdi Street 1, Chamran Blvd

City

Shiraz

Province

Fars

Postal code

71345- 1733

Approval date

2023-07-26, 1402/05/04

Ethics committee reference number

IR.SUMS.REHAB.REC.1402.013

Health conditions studied

1

Description of health condition studied

Non-specific chronic low back pain

ICD-10 code

M54.5

ICD-10 code description

Low back pain

Primary outcomes

1

Description

Pain

Timepoint

Before the intervention, immediately after the end of the treatment (end of the fourth week) and two weeks after

the end of the treatment as a follow-up.

Method of measurement

Numeric pain rating scale

2

Description

Function

Timepoint

Before the intervention, immediately after the end of the treatment (end of the fourth week) and two weeks after the end of the treatment as a follow-up.

Method of measurement

Oswestry disability questionnaire/Athletes disability index

3

Description

Static balance

Timepoint

Before the intervention, immediately after the end of the treatment (end of the fourth week) and two weeks after the end of the treatment as a follow-up.

Method of measurement

Single leg stance

4

Description

Dynamic balance

Timepoint

Before the intervention, immediately after the end of the treatment (end of the fourth week) and two weeks after the end of the treatment as a follow-up.

Method of measurement

Y balance test

5

Description

Core muscle endurance

Timepoint

Before the intervention, immediately after the end of the treatment (end of the fourth week) and two weeks after the end of the treatment as a follow-up.

Method of measurement

Prone plank test/Lateral plank test/Unilateral hip bridge test/Feet elevated side support test

6

Description

Agility of athletes

Timepoint

Before the intervention, immediately after the end of the treatment (end of the fourth week) and two weeks after the end of the treatment as a follow-up.

Method of measurement

Illinois agility test

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group: Strengthening exercises with diaphragm tapping: People with non-specific chronic low back pain who in addition to diaphragm strengthening exercises according to the control group, receive diaphragm tapping every 4 days for 4 weeks.

Category

Rehabilitation

2

Description

Control group: Diaphragm strengthening exercises group: People with non-specific chronic low back pain who receive diaphragm strengthening exercises as 2 exercises per week for 4 weeks that according to the weekly schedule, they do each for 5 minutes, 2 times a day and 5 days a week.

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center

Shiraz School of Rehabilitation

Full name of responsible person

Leila Abbasi

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Shiraz University of Medical Sciences

Full name of responsible person

Younes Ghasemi

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Research Deputy, Central building of Shiraz University of Medical Sciences, Opposite Palestine St, Zand St.

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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

Shiraz University of Medical Sciences

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

Shiraz University of Medical Sciences

Full name of responsible person

Leila Abbasi

Position

Assistant Professor

Latest degree

Ph.D.

Other areas of specialty/work

Physiotherapy

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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

No more information

Study Protocol

No - There is not a plan to make this available

Statistical Analysis Plan

No - There is not a plan to make this available

Informed Consent Form

No - There is not a plan to make this available

Clinical Study Report

No - There is not a plan to make this available

Analytic Code

No - There is not a plan to make this available

Data Dictionary

No - There is not a plan to make this available