

Clinical Trial Protocol

Iranian Registry of Clinical Trials

11 Sep 2026

Comparison between the different type of corrective exercises along with Diet on Anterior Pelvic Tilt in obesity Impacting Low Back Pain Patients

Protocol summary

Study aim

To find out the evidence about the improvement in body weight and its impact on the biomechanical changes of pelvis and lumbar spine after Dieting alone, Diet +Soft tissue release, Diet +Strength exercise, Diet +Aerobic exercise as well as comparing the biomechanical characteristics between these groups to find out the best method for the management of low back pain.

Design

This is a single blind randomized clinical trial study. 80 participants will be randomly allocated into 4 groups and total 6 weeks interventions would be given consisting of 5 sessions per week (30 sessions) for exercises and soft tissue release group along with continuous dieting.

Settings and conduct

Data would be collected randomly from Karachi, Pakistan population referred to physiotherapy clinic. Before and after 6 weeks interventions, outcome measurements will be assessed in each group.

Participants/Inclusion and exclusion criteria

Non specific low back pain; age between 25 to 40years; Anterior pelvic more than 13.5 degree; Grade I and II obesity without Current dermatological or inflammatory illness,Recent fracture, Congenital lower extremity abnormalities, Breathing difficulties,Cardiovascular, pulmonary, hepatic, renal, and hematological disorders

Intervention groups

The participants aged between 25-40 years will be assigned in four groups according to their BMI. A comprehensive Rehabilitation plan would be formulated after assessment, incorporating diet only as control group, diet +soft tissue release, diet +strengthening exercise group and diet +aerobic exercise group, all following 500 kcal diet deficit in their daily caloric requirement.

Main outcome variables

Pain; disability; Quality of life; pelvic tilt; body fat percentage; muscle strength; muscle thickness; aerobic fitness,waist hip ratio; muscle length for rectus femoris

and Iliopsoas

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20130121012210N10**

Registration date: **2023-03-14, 1401/12/23**

Registration timing: **prospective**

Last update: **2023-03-14, 1401/12/23**

Update count: **0**

Registration date

2023-03-14, 1401/12/23

Registrant information

Name

Azadeh Shadmehr

Name of organization / entity

Tehran University of Medical Sciences

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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2023-03-21, 1402/01/01

Expected recruitment end date

2023-06-22, 1402/04/01

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Comparison between the different type of corrective exercises along with Diet on Anterior Pelvic Tilt in obesity Impacting Low Back Pain Patients

Public title

Comparison between the different corrective exercises along with Diet on improvement of Low Back Pain Patients

Purpose

Treatment

Inclusion/Exclusion criteria**Inclusion criteria:**

Subjects with NSLBP Age between 25 to 40years Anterior pelvic tilt more than 13.5 degree Grade I and II obesity

Exclusion criteria:

Dermatological or inflammatory illness Recent fractures Congenital lower extremity abnormalities Cardiovascular, pulmonary, renal and hematological disorders

Age

From **25 years** old to **40 years** old

Gender

Both

Phase

N/A

Groups that have been masked

- Outcome assessor

Sample size

Target sample size: **80**

Randomization (investigator's opinion)

Randomized

Randomization description

Subjects in this study are randomly placed in one of the three study groups based on random number table and receive the intervention related to the same group.

Blinding (investigator's opinion)

Single blinded

Blinding description

assessor is blind regarding to the groups and interventions.

Placebo

Not used

Assignment

Parallel

Other design features**Secondary Ids**

empty

Ethics committees**1****Ethics committee****Name of ethics committee**

Ethics commetee of Tehran University of Medical sciences

Street address

Central building of TUMS,Ghods Street, Keshavarz Blvd

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Tehran

Postal code

1417613151

Approval date

2023-01-18, 1401/10/28

Ethics committee reference number

IR.TUMS.FNM.REC.1401.144

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

low back pain

ICD-10 code

S30.0

ICD-10 code description

Contusion of lower back and pelvis

Primary outcomes**1****Description**

pain

Timepoint

before treatment, at the end of treatment (after the 6th week)

Method of measurement

according to the Visual analog scale

2**Description**

Disability

Timepoint

before treatment, at the end of treatment (after the 6th week)

Method of measurement

Oswestry Disability Index questionnaire

3**Description**

Quality of life

Timepoint

before treatment, at the end of treatment (after the 6th week)

Method of measurement

SF-36 questionnaire

4**Description**

Pelvic Tilt

Timepoint

before treatment, at the end of treatment (after the 6th week)
Method of measurement
photogrammetry

5

Description

body composition

Timepoint

before treatment, at the end of treatment (after the 6th week)

Method of measurement

Bioelectrical impedance analysis

6

Description

Muscle strength

Timepoint

before treatment, at the end of treatment (after the 6th week)

Method of measurement

Dynamometer

7

Description

Muscle thickness

Timepoint

before treatment, at the end of treatment (after the 6th week)

Method of measurement

Ultrasounography

8

Description

Aerobic Fitness

Timepoint

before treatment, at the end of treatment (after the 6th week)

Method of measurement

Bruce Protocol

9

Description

Waist-Hip Ratio

Timepoint

before treatment, at the end of treatment (after the 6th week)

Method of measurement

circumference of the waist to that of the hips by tape

10

Description

muscle length

Timepoint

before treatment, at the end of treatment (after the 6th week)

Method of measurement

Thomas Test

Secondary outcomes

empty

Intervention groups

1

Description

Control group: The participants would be assessed by a nutritionist and their basal metabolic rate (BMR) would be calculated and finally Recommended Caloric Requirement (RCR) calculation. In RCR 500 kcal deficit would be given which is equivalent to one pound of fat which contains 3500 kcal in week. The participants will follow the regimen for 6 weeks.

Category

Rehabilitation

2

Description

Intervention group: Diet + Soft tissue release Group, This group would follow the same diet of control group. In Addition soft tissue release for Iliopsoas and Rectus femoris would be given for 6 weeks, 5 times per week (30 sessions)

Category

Rehabilitation

3

Description

Intervention group: Diet + Strengthening exercise Group, The same protocol for diet would be given. In addition strengthening training for Pectoralis major , Lattismus Dorsi , Deltoid , Trapezius , Biceps, Triceps, Quadriceps , Hamstrings, Rectus abdominus , Erector spinae and Gastrocnemius soleus would be formulated and supervised for 6 weeks, 5 sessions per week (30 sessions).

Category

Rehabilitation

4

Description

Intervention group: Diet + Aerobic exercise Group, The same protocol for diet would be given. In addition aerobic training which will be apply by exercise between 70% to 75% of Max Heart Rate for 40 minutes per session for 5 days per week for 6 weeks (30 sessions).

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center

School of Rehabilitation
Full name of responsible person
Azadeh Shadmehr
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Sponsors / Funding sources

1

Sponsor

Name of organization / entity
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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

Tehran 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
Tehran University of Medical Sciences
Full name of responsible person

Muhammad Sarfraz
Position
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Person responsible for updating data

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Sharing plan**Deidentified Individual Participant Data Set (IPD)**

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

Study Protocol

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

Statistical Analysis Plan

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

Informed Consent Form

No - There is not a plan to make this available

Clinical Study Report

Undecided - It is not yet known if there will be 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

No - There is not a plan to make this available