

# Clinical Trial Protocol

## Iranian Registry of Clinical Trials

10 Jun 2026

### Comparison of immediate effects following postro-anterior mobilization technique and Mulligan sustained natural apophyseal glide on chronic nonspecific low back pain

#### Protocol summary

##### Study aim

Comparison of immediate effect of sustained natural apophyseal glide and posterior-anterior techniques in non-specific chronic low back pain

##### Design

A concealed, randomized, double-blinded, multi-center, sham controlled clinical trial with a parallel group design of 45 patients

##### Settings and conduct

Three physiotherapy centers selected for sampling and 45 patients included to study after receiving informed consent. Each patient were entered to one of three groups (SNAG, PA Mobilization & sham) by block balanced randomization and received intervention by an expert manual therapist. All patients were assessed before and immediately after the intervention by another researcher who was blinded to patients allocation. Also all patients were blinded to groups because sham intervention was similar to SNAG technique.

##### Participants/Inclusion and exclusion criteria

Patients were included with localized chronic non-specific low back pain, age between 20 to 50 years, that their pain were worsened during flexion and L4 as most painful lumbar segment. Patients with any type of sensory or motor disorders, malignancy, osteoporosis or any type of contraindication of mobilization excluded.

##### Intervention groups

Sustained natural apophyseal glide (SNAG) on L4 during 4 sets of 6 repetitions with 30 seconds rest between sets with cranial direction. Posterior-anterior mobilization on L4 with grade 3 during 4 sets of 30 seconds duration with 30 seconds rest between them. Sham intervention likes SNAG technique, but only skin touch without mobilization and caudal direction during 2 sets of 4 repetitions.

##### Main outcome variables

Pin Pressure threshold (PPT) at 3 cm right to L3 spinous process, L3 dermatome, L4 dermatome and S1

dermatome; Flexion, Extension, Right and Left Lateral bendings and rotations range of motions; Pain at rest and during forward flexion.

#### General information

##### Reason for update

##### Acronym

##### IRCT registration information

IRCT registration number: **IRCT20170117032020N2**

Registration date: **2018-07-04, 1397/04/13**

Registration timing: **retrospective**

Last update: **2018-07-04, 1397/04/13**

Update count: **0**

##### Registration date

2018-07-04, 1397/04/13

##### Registrant information

##### Name

Mohammad Javaherian

##### Name of organization / entity

Tehran University of Medical Sciences

##### Country

Iran (Islamic Republic of)

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##### Email address

javaherian\_m@razi.tums.ac.ir

##### Recruitment status

**Recruitment complete**

##### Funding source

budget thesis of Rehabilitation of Tehran University of medical sciences.

##### Expected recruitment start date

2017-04-21, 1396/02/01

##### Expected recruitment end date

2017-07-06, 1396/04/15  
**Actual recruitment start date**  
2017-04-21, 1396/02/01  
**Actual recruitment end date**  
2017-09-11, 1396/06/20  
**Trial completion date**  
empty

**Scientific title**

Comparison of immediate effects following postro-anterior mobilization technique and Mulligan sustained natural apophyseal glide on chronic nonspecific low back pain

**Public title**

Comparison the efficacy of two manual therapy methods (postro-anterior & Mulligan sustained natural apophyseal glide) on low back pain

**Purpose**

Treatment

**Inclusion/Exclusion criteria**

**Inclusion criteria:**

age between 20 to 50 Low back pain for more than 12 weeks Pain at center of lumbar region (with or without radiating to distal of buttock(s) region which intensify with forward flexion, but first half flexion in painless Pain is equal to or greater than three by VAS Can understand the commands willingness to participate in the study

**Exclusion criteria:**

Disorders like malignancy, hemorrhagic, wound, infection, sensory-motor deficits or any other pathology Surgery or injection at lumbar region Osteoporosis or history of fracture at lumbar or lower extremity Any factor which prevents patient to lie prone (such as asthma or pacemaker) or limited range of motion in knee or ankle Diabetes melitus Any contraindication of mobilization Sever mental disorder Pregnancy Spondylolisthesis and sacralization Patient withdrawal of cooperation Patient discomfort and intolerance

**Age**

From **20 years** old to **50 years** old

**Gender**

Both

**Phase**

N/A

**Groups that have been masked**

- Participant
- Outcome assessor

**Sample size**

Target sample size: **45**

Actual sample size reached: **45**

**Randomization (investigator's opinion)**

Randomized

**Randomization description**

Block balanced randomization

**Blinding (investigator's opinion)**

Double blinded

**Blinding description**

Block balances randomization set before trial starting and was wrote in closed envelopes and sort them by number. Every participant that entered in study,

therapist opened one envelope to find participant's grouping, but assessor was not aware about patient's group, because assessment was done in another room. Our sham treatment was very similar to Mulligan technique. therefore, No patient found that this was not real treatment, therefore patients and assessor were not aware about groups and only therapist was aware.

**Placebo**

Used

**Assignment**

Parallel

**Other design features**

**Secondary Ids**

empty

**Ethics committees**

1

**Ethics committee**

**Name of ethics committee**

Ethics committee of Tehran University of Medical Sciences

**Street address**

Conrner of Quds street- Keshavarz Street- Tehran

**City**

Tehran

**Province**

Tehran

**Postal code**

1417653761

**Approval date**

2017-04-20, 1396/01/31

**Ethics committee reference number**

IR.TUMS.FNM.REC.1396.2102

**Health conditions studied**

1

**Description of health condition studied**

Low Back Pain

**ICD-10 code**

M54.5

**ICD-10 code description**

Low back pain

**Primary outcomes**

1

**Description**

Pain Pressure threshold

**Timepoint**

Before and immediately after intervention

**Method of measurement**

By pressure algometer at 3 cm right to L4 vertebrae, L3-L4-S1 dermatome of right lower extremity and left mid-deltoid

## Secondary outcomes

### 1

#### Description

Pain

#### Timepoint

Before and immediately after intervention

#### Method of measurement

Visual analog scale

### 2

#### Description

Forward flexion

#### Timepoint

Before and immediately after intervention

#### Method of measurement

Inclinometry

### 3

#### Description

Backward extension

#### Timepoint

Before and immediately after intervention

#### Method of measurement

Inclinometry

### 4

#### Description

Right and Left side bending

#### Timepoint

Before and immediately after intervention

#### Method of measurement

Goniometry

### 5

#### Description

Right and left trunk rotation

#### Timepoint

Before and immediately after intervention

#### Method of measurement

Goniometry

## Intervention groups

### 1

#### Description

Intervention 1: Mulligan Sustained natural apophyseal glide technique as intervention with 6 repetition during 4 sets and using mulligan belt

#### Category

Treatment - Other

### 2

#### Description

Intervention 2: Posterior-anterior mobilization technique as intervention 30 seconds at 4 sets and 30 seconds rest

between them.

#### Category

Treatment - Other

### 3

#### Description

Control group: Sham technique of SNAG4 repetition of 3 sets forward flexion with caudal direction touch

#### Category

Treatment - Other

## Recruitment centers

### 1

#### Recruitment center

##### Name of recruitment center

Physiotherapy clinic, Rehabilitation faculty of Tehran university of medical sciences

##### Full name of responsible person

Seyyed Mohsen Mir

##### Street address

No. 336, Corner of Safi-Alishah street, Enghelab Street

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##### Province

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### 2

#### Recruitment center

##### Name of recruitment center

Physiotherapy clinic at Baharlou Hospital

##### Full name of responsible person

Amir Mohammadi Nia

##### Street address

Baharloo Hospital, Behdari street, Rah-Ahan squ.

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### 3

#### Recruitment center

##### Name of recruitment center

physiotherapy unit of Imam Sadegh clinic

##### Full name of responsible person

Mojtaba Faraji Rad

##### Street address

Corner Of Shahed street, Aminibayat squ., Tohid Ave.,  
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## Sponsors / Funding sources

### 1

**Sponsor****Name of organization / entity**

Tehran University of Medical Sciences

**Full name of responsible person**

Siamak Bashardoust tajali

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**Province**

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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**

Mohammad Javaherian

**Position**

PhD. Cand.

**Latest degree**

Master

**Other areas of specialty/work**

Physiotherapy

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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**

Undecided - It is not yet known if there will be 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**

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