

# Clinical Trial Protocol

## Iranian Registry of Clinical Trials

11 Sep 2026

### Comparison the effect of neck stabilization exercise and dynamic neuromuscular stabilization on pain intensity, forward head angle and muscle activity of employees with chronic non-specific neck pain

#### Protocol summary

##### Study aim

The effect of neck stabilization exercise and dynamic neuromuscular stabilization exercise on forward head posture and muscle activity in patients with chronic non-specific neck pain

##### Design

Retrospective studies with two intervention group and one control group, with parallel groups, double-blind, slot-drawing method, phase 2 on 42 patients

##### Settings and conduct

In the pre-test, pain intensity, electrical activities (erector spinae, sternocleidomastoid, upper trapezius), head forward angle are measured. Then groups 1 and 2 received a 6-week intervention, while no intervention was performed in the control group. At the end again pain intensity, electrical activities (erector spinae, sternocleidomastoid, upper trapezius), head forward angle are measured. Measurements were performed at Razi University, Kermanshah. Exercises were performed at the Razi University, Kermanshah.

##### Participants/Inclusion and exclusion criteria

Having persistent neck pain for more than 3 month, Neck pain for which the specialist doctor did not mention a specific cause, No specific structural damage in the neck, women

##### Intervention groups

The experimental groups received an 6-week corrective exercise (CE) program. The control group was asked to maintain their ordinary daily activities and not to participate in any exercise programs.

##### Main outcome variables

Pain intensity, forward head angle, electrical activity of upper trapezius neck, sternocleidomastoid, cervical erector spine .

#### General information

##### Reason for update

##### Acronym

##### IRCT registration information

IRCT registration number: **IRCT20200622047888N3**

Registration date: **2023-11-14, 1402/08/23**

Registration timing: **retrospective**

Last update: **2023-11-14, 1402/08/23**

Update count: **0**

##### Registration date

2023-11-14, 1402/08/23

##### Registrant information

##### Name

Aynollah Sakinepoor

##### Name of organization / entity

Kharazmi University, Tehran, Iran

##### Country

Iran (Islamic Republic of)

##### Phone

+98 83 4522 6103

##### Email address

asakenapoor@yahoo.com

##### Recruitment status

**Recruitment complete**

##### Funding source

##### Expected recruitment start date

2023-05-05, 1402/02/15

##### Expected recruitment end date

2023-05-17, 1402/02/27

##### Actual recruitment start date

2023-05-05, 1402/02/15

##### Actual recruitment end date

2023-05-17, 1402/02/27

##### Trial completion date

2023-05-17, 1402/02/27

## Scientific title

Comparison the effect of neck stabilization exercise and dynamic neuromuscular stabilization on pain intensity, forward head angle and muscle activity of employees with chronic non-specific neck pain

## Public title

neck stabilization and dynamic neuromuscular stabilization exercises and muscle activity

## Purpose

Treatment

## Inclusion/Exclusion criteria

### Inclusion criteria:

Subjects who had persistent neck pain (more than three months). Subjects who used the computer for at least four hours a day Subjects who got score three from the visual analog scale one week before the pre-test. Subjects who got score between 3 and 7 in the visual pain grading system (scale 0=10 cm). Neck pain for which the specialist doctor did not mention a specific cause Subjects who were female.

### Exclusion criteria:

Neck pain for which a specialist doctor has mentioned a specific cause. Specific structural damage in the neck, neck disc Spine surgery

## Age

From **32 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: **45**

Actual sample size reached: **42**

## Randomization (investigator's opinion)

Randomized

## Randomization description

The participants were randomly assigned to two intervention groups (intervention group one: dynamic neuromuscular stabilization and intervention group two: neck stabilization exercise), and control group by drawing a number from 1 to 54, prepared in advance by the trainer and placed in sealed envelopes in a box. The number envelopes were placed inside a box. The trainer was asked to pick 15 envelopes from the numbers inside the box for each group. The randomization sequence was not disclosed until participants had completed their baseline assessments. The assessor was blinded to group allocation

## Blinding (investigator's opinion)

Double blinded

## Blinding description

The randomization sequence was not disclosed until patients completed their baseline assessments. The statistician and the assessor were blind to group allocation. Patients were not blind to the interventions

(intervention group one: dynamic neuromuscular stabilization and intervention group two: neck stabilization exercise), but did not know which group was the treatment therapy.

## Placebo

Not used

## Assignment

Parallel

## Other design features

## Secondary Ids

### 1

#### Registry name

#### Secondary trial Id

#### Registration date

2023-11-02, 1402/08/11

## Ethics committees

### 1

#### Ethics committee

##### Name of ethics committee

Research Ethics Committees of Hormozgan University of Medical Sciences

##### Street address

Imam Hossein Street

##### City

Bandar Abas

##### Province

Hormozgan

##### Postal code

7919693116

#### Approval date

2023-08-04, 1402/05/13

#### Ethics committee reference number

IR.HUMS.REC.1402.219

## Health conditions studied

### 1

#### Description of health condition studied

chronic non-specific neck pain

#### ICD-10 code

#### ICD-10 code description

## Primary outcomes

### 1

#### Description

Electrical activity of muscles

#### Timepoint

The electrical activity of muscles were measured before and six weeks after the stabilization exercise and dynamic neuromuscular stabilization exercises

#### Method of measurement

The ground reaction forces is measured by sixteen

channel electromyography device

## Secondary outcomes

### 1

#### Description

Forward head angle

#### Timepoint

Forward head angle was measured before and after the six the neck stabilization exercise and dynamic neuromuscular stabilization exercises

#### Method of measurement

Forward head was measured by photogrammetric method.

### 2

#### Description

Pain intensity

#### Timepoint

pain intensity was measured before and after the six the neck stabilization exercise and dynamic neuromuscular

#### Method of measurement

Pain intensity was measured by the numeric pain rating scale method.

### 3

#### Description

Electrical activity of muscles

#### Timepoint

Electrical activity of muscles was measured before and after the six the neck stabilization exercise and dynamic neuromuscular

#### Method of measurement

Electrical activity of muscles was measured by electromyography device.

## Intervention groups

### 1

#### Description

Intervention group1: Intervention group 1: In this group the electrical activity of muscles, pain intensity and forward head angle is respectively measured by electromyography device, the numeric pain rating scale (NPRS), camera respectively. Then Subjects receive neck stabilization exercise for six weeks, and then at the end of the six weeks the electrical activity of muscles is measured again. Training sessions consist of six weeks with three training sessions per week for one hour.

#### Category

Treatment - Other

### 2

#### Description

Intervention group2: Intervention group 2: In this group the electrical activity of muscles, pain intensity and forward head angle is respectively measured by

electromyography device, the numeric pain rating scale (NPRS), camera respectively. Then Subjects receive dynamic neuromuscular stabilization exercise for six weeks, and then at the end of the six weeks the electrical activity of muscles is measured again. Training sessions consist of six weeks with three training sessions per week for one hour.

#### Category

Treatment - Other

### 3

#### Description

Control group: The control group was asked to maintain their ordinary daily activities and not to participate in any exercise programs

#### Category

Treatment - Other

## Recruitment centers

### 1

#### Recruitment center

##### Name of recruitment center

Razi University, Kermanshah

##### Full name of responsible person

Ainollah Sakinepoor

##### Street address

Street Hor

##### City

Eslam Abad Garb

##### Province

Kermanshah

##### Postal code

6761753164

##### Phone

+98 83 4522 6103

##### Email

asakenapoor@yahoo.com

## 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?**  
No  
**Title of funding source**  
It is a personal financial source  
**Proportion provided by this source**  
100  
**Public or private sector**  
Private  
**Domestic or foreign origin**  
Domestic  
**Category of foreign source of funding**  
*empty*  
**Country of origin**  
**Type of organization providing the funding**  
Persons

## Person responsible for general inquiries

**Contact**  
**Name of organization / entity**  
The Razi University, Kermanshah  
**Full name of responsible person**  
Ainollah Sakinepoor  
**Position**  
PhD, sport injury and corrective exercises  
**Latest degree**  
Ph.D.  
**Other areas of specialty/work**  
Sport injury and corrective exercises  
**Street address**  
HOR Street  
**City**  
Eslam Abad Garb  
**Province**  
Kermanshah  
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asakenapoor@yahoo.com

## Person responsible for scientific inquiries

**Contact**  
**Name of organization / entity**  
The Razi University, Kermanshah  
**Full name of responsible person**  
Ainollah Sakinepoor  
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## Person responsible for updating data

**Contact**  
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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**  
There is 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