

Clinical Trial Protocol

Iranian Registry of Clinical Trials

11 Sep 2026

Comparing the Effects of TECAR and DN Added to Routine Physical Therapy on Elbow Pain and Function in Patients with Tennis Elbow Syndrome: 3 group randomized controlled trial

Protocol summary

Study aim

Comparison of the effects of TECAR therapy and dry needling, in addition to routine physiotherapy, on pain intensity and elbow function in patients with lateral epicondylitis (tennis elbow).

Design

A randomized, double-blind, parallel-group, controlled clinical trial will be conducted on 40 patients.

Settings and conduct

In this study, patients with lateral epicondylitis (tennis elbow) referred by an orthopedic specialist to the physiotherapy clinic of Dr. Heshmat Teaching Hospital will be selected based on the inclusion criteria and then randomly allocated to three groups (control, experimental 1, and experimental 2) using block randomization, where each group will receive its corresponding intervention.

Participants/Inclusion and exclusion criteria

Patients aged over 20 years with a diagnosis of lateral epicondylitis presenting with lateral elbow pain and tenderness aggravated by active wrist extension and a positive Cozen's test will be included, while those with local injection at the affected site, diabetes or hemophilia, pregnancy, or physician-confirmed peripheral nerve entrapment or cervical radiculopathy will be excluded.

Intervention groups

Experimental Group 1 will receive routine physiotherapy plus TECAR therapy (capacitive mode, 480 kHz) for 10 sessions, while Experimental Group 2 will receive routine physiotherapy plus dry needling every other session (5 sessions in total) over 10 sessions.

Main outcome variables

Pain intensity and functional disability.

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20211030052912N4**

Registration date: **2026-06-01, 1405/03/11**

Registration timing: **prospective**

Last update: **2026-06-01, 1405/03/11**

Update count: **0**

Registration date

2026-06-01, 1405/03/11

Registrant information

Name

Somaye Azarnia

Name of organization / entity

Country

Iran (Islamic Republic of)

Phone

+98 21 7173 2824

Email address

azarnia.pt.82@gmail.com

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2026-08-01, 1405/05/10

Expected recruitment end date

2026-09-01, 1405/06/10

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Comparing the Effects of TECAR and DN Added to Routine Physical Therapy on Elbow Pain and Function in Patients with Tennis Elbow Syndrome: 3 group randomized controlled trial

Public title

Comparison of the effects of TECAR therapy and dry needling in patients with lateral epicondylitis (tennis elbow).

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria:

Patients aged over 20 years with a diagnosis of lateral epicondylitis (tennis elbow) 2. Presence of pain and tenderness around the lateral epicondyle that is aggravated by active wrist extension. 3. A positive Cozen's test.

Exclusion criteria:

1. Injection in the affected area. 2. Diabetes or hemophilia. 3. Pregnancy 4. Peripheral nerve entrapment or cervical radiculopathy confirmed by a physician.

Age

From 20 years old

Gender

Both

Phase

3

Groups that have been masked

- Participant
- Outcome assessor

Sample size

Target sample size: 40

Randomization (investigator's opinion)

Randomized

Randomization description

After initial evaluations, patients will be randomly assigned to three groups (control, experimental 1, and experimental 2) using block randomization. Randomization will be performed via the website www.sealedenvelope.com. In this method, five blocks of six participants will be generated for the three study groups. Each allocation sequence will be recorded on a card and placed inside an envelope. As patients are enrolled, the envelopes will be opened sequentially, and the assigned group for each participant will be determined. This is a double-blind study in which both the participants and the outcome assessor will be unaware of group allocation. Randomization and outcome assessment will be conducted by an individual who is not involved in the treatment process, and the assessor will also be blinded to the type of intervention.

Blinding (investigator's opinion)

Double blinded

Blinding description

In this double-blind study, both the participants and the outcome assessor will be unaware of the assigned group. Randomization and intervention will be performed by an individual who is not involved in the outcome

assessment, and the assessor will remain blinded to the type of intervention.

Placebo

Not used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Research Ethics Committees of Guilan university of medical sciences

Street address

Heshmat Crossroads, Dr. Heshmat Hospital

City

Rasht

Province

Guilan

Postal code

4193955588

Approval date

2026-05-20, 1405/02/30

Ethics committee reference number

IR.GUMS.REC.1405.082

Health conditions studied

1

Description of health condition studied

tennis elbow

ICD-10 code

M77.1

ICD-10 code description

Lateral epicondylitis

Primary outcomes

1

Description

pain intensity

Timepoint

Before and after 10 sessions.

Method of measurement

VAS Questionnaire

2

Description

functional disability

Timepoint

Before and after 10 sessions.

Method of measurement

Secondary outcomes

empty

Intervention groups

1

Description

Experimental Group 1: In addition to routine physiotherapy, TECAR therapy in capacitive mode at 480 kHz will be applied for 10 sessions.

Category

Treatment - Devices

2

Description

Experimental Group 2: In addition to routine physiotherapy, dry needling will be performed every other session (a total of 5 sessions over the 10-session treatment period).

Category

Treatment - Devices

3

Description

Control Group: Participants will receive routine physiotherapy, including: * Hot pack + TENS for 15 minutes * Ultrasound at 1.5 W/cm², 1 MHz frequency, 20% duty cycle for 5 minutes * Therapeutic exercises (strengthening and stretching of the ECRB muscle and transverse friction massage) if the patient is pain-free during daily activities.

Category

Treatment - Devices

Recruitment centers

1

Recruitment center

Name of recruitment center

بیمارستان دکتر حشمت در رشت

Full name of responsible person

Somayye Azarnia

Street address

Heshmat Crossroads, Dr. Heshmat Hospital

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Rasht University of Medical Sciences

Full name of responsible person

Dr. ali alavi

Street address

Opposite 17 Shahrivar Hospital, Shahid Siyadati Street, Namjoo Street, Rasht

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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

Rasht 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

Rasht University of Medical Sciences

Full name of responsible person

Somaye Azarnia

Position

Assitant Professor

Latest degree

Ph.D.

Other areas of specialty/work

Physiotherapy

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Person responsible for scientific inquiries

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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

No - There is not a plan to make this available

Statistical Analysis Plan

Yes - There is 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

No - There is not a plan to make this available

Title and more details about the data/document

Statistical charts and data tables

When the data will become available and for how long

Access period begins 5 months after publication.

To whom data/document is available

Scientific researchers

Under which criteria data/document could be used

There is no prohibition on submitting data for the purpose of conducting scientific research and citing the source.

From where data/document is obtainable

send email

What processes are involved for a request to access data/document

about 1 week

Comments