

Clinical Trial Protocol

Iranian Registry of Clinical Trials

19 Sep 2026

Comparison of premolar space closure rate using Ni-Ti closed coil springs and elastic memory chains

Protocol summary

Summary

The aim of this study is to compare the premolar space closure rate by using Ni-Ti closed coil springs and elastic memory chains. This clinical trial is carried out on a number of patients visited in the department of orthodontics of Ahvaz faculty of dentistry whose orthodontic treatment plan consists of bilateral extraction of first premolars in at least one jaw. The random patient selection process will continue among the patients with good cooperation in the first stages of orthodontic treatment until at least 21 dental arches are selected. After leveling and alignment, the patient will be referred to extract the premolars simultaneously. Then the space closure will be done with the use of Ni-Ti closed coil springs on one side and with the use of elastic memory chains on the other side. A digital caliper will be used to determine the extent of first premolar space closure during the third visit (3 months after initiation of retraction of canines). As this measurement is done after detaching the coils and elastics by another clinician, this study is done single blind. The rate of space closure is then calculated in millimeters per month and the results about Ni-Ti closed coil springs and elastic memory chains will be compared and analyzed statistically.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT2015102824776N1**

Registration date: **2015-12-12, 1394/09/21**

Registration timing: **prospective**

Last update:

Update count: **0**

Registration date

2015-12-12, 1394/09/21

Registrant information

Name

Pedram Javidi Dashtbayazi

Name of organization / entity

Ahvaz Jundishapur University of Medical Sciences

Country

Iran (Islamic Republic of)

Phone

+98 61 3320 5168

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javidi.p@ajums.ac.ir

Recruitment status

Recruitment complete

Funding source

Ahvaz Jundishapur University of Medical Sciences

Expected recruitment start date

2015-12-22, 1394/10/01

Expected recruitment end date

2016-02-04, 1394/11/15

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Comparison of premolar space closure rate using Ni-Ti closed coil springs and elastic memory chains

Public title

premolar space closure rate

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria: patient needs simultaneous bilateral extractions of first premolars as a part of orthodontic treatment plan (in maxilla or mandible or both arches); good patient cooperation in orthodontic visits prior to teeth extractions. Exclusion criteria: patient non-

compliance in case of failure of the orthodontic appliance and not referring to clinic for more than two days after the appliance failure.

Age

No age limit

Gender

Both

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: 42

Randomization (investigator's opinion)

Randomized

Randomization description**Blinding (investigator's opinion)**

Single blinded

Blinding description**Placebo**

Not used

Assignment

Parallel

Other design features**Secondary Ids**

empty

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

Ahvaz Jundishapur University of Medical Sciences

Street address

Ahvaz Jundishapur University of Medical Sciences,
Dey St., Golestan highway, Ahvaz.

City

Ahvaz

Postal code**Approval date**

2015-10-17, 1394/07/25

Ethics committee reference number

IR.AJUMS.REC.1394.418

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

Dental crowding

ICD-10 code

K07.4

ICD-10 code description

Malocclusion, unspecified

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

tooth extraction space

Timepoint

1 month

Method of measurement

Digital caliper in millimeters

Secondary outcomes

empty

Intervention groups**1****Description**

Intervention group: Elastic memory chain that is replaced with a new elastic in each treatment session to close the extraction space in intervention group.

Category

Other

2**Description**

Control group: Ni-Ti closed coil spring to close the extraction space in control group.

Category

Other

Recruitment centers**1****Recruitment center****Name of recruitment center**

Ahvaz Faculty of Dentistry, Department of Orthodontics

Full name of responsible person

Dr. Pedram Javidi Dashtbayazi

Street address

Faculty of Dentistry, Ahvaz Jundishapur University of Medical Sciences, Dey St., Golestan highway, Ahvaz.

City

Ahvaz

Sponsors / Funding sources**1****Sponsor****Name of organization / entity**

Research Deputy of Ahvaz Jundishapur University of Medical Sciences

Full name of responsible person

Dr. Nader Saki

Street address

Deputy of Research Development, Ahvaz Jundishapur University of Medical Sciences, Dey St., Golestan highway, Ahvaz.

City
Ahvaz

Grant name

Grant code / Reference number

Is the source of funding the same sponsor organization/entity?
Yes

Title of funding source
Research Deputy of Ahvaz Jundishapur University of Medical Sciences

Proportion provided by this source
100

Public or private sector
empty

Domestic or foreign origin
empty

Category of foreign source of funding
empty

Country of origin

Type of organization providing the funding
empty

Person responsible for general inquiries

Contact

Name of organization / entity
Ahvaz Jundishapur University of Medical Sciences

Full name of responsible person
Dr. Pedram Javidi Dashtbayazi

Position
Postgraduate student of orthodontics

Other areas of specialty/work

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Person responsible for scientific inquiries

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Full name of responsible person
Dr. Mashaallah Khanemasjedi

Position

Orthodontist

Other areas of specialty/work

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Sharing plan

Deidentified Individual Participant Data Set (IPD)
empty

Study Protocol
empty

Statistical Analysis Plan
empty

Informed Consent Form
empty

Clinical Study Report
empty

Analytic Code
empty

Data Dictionary
empty