

Clinical Trial Protocol

Iranian Registry of Clinical Trials

10 Jun 2026

Short term effect of low-level laser therapy on tooth stability after orthodontic treatment

Protocol summary

Summary

Research is randomized, not blinded, without using placebo. Inclusion criteria are patients without extraction and with moderate crowding (5-9 mm), rotated teeth less than 30 degrees. Group 1: who are treating with a diode laser to alleviate relaps. The laser emit a wavelength of 810 nm and operate in continuous wave mode with maximum power of 200 mW from the mesial maxillary canine of one side to the opposite side. The laser probe will be position in contact with gingival tissue in the coronal third of the root, and the irradiation will perform on 4 points around the tooth, including mesiobuccal, distobuccal, mesiolingual, and distolingual areas. The laser irradiates for 50 seconds per point, and thus each tooth receive 200 seconds of laser irradiation. Laser will irradiate 2 times before removing arch wire (7days and immediately before removing arch wire). Immediately after bracket debonding, Dental impression will be taken. After 4 months of using fulltime retainer, impression will be taken. The patients are asked to use retainer about 8 hour per day for one month. The fourth impression will be taken after 6 months after removing arch wire. The second group will not be undergoing any laser radiation. Crowding will measure.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT2017053034061N1**
Registration date: **2017-06-07, 1396/03/17**
Registration timing: **registered_while_recruiting**

Last update:

Update count: **0**

Registration date

2017-06-07, 1396/03/17

Registrant information

Name

Batoolalsadat Mousavi fard

Name of organization / entity

Kerman University of Medical Science

Country

Iran (Islamic Republic of)

Phone

+98 34 3213 2944

Email address

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Recruitment status

Recruitment complete

Funding source

investigator

Expected recruitment start date

2017-04-03, 1396/01/14

Expected recruitment end date

2017-09-21, 1396/06/30

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Short term effect of low-level laser therapy on tooth stability after orthodontic treatment

Public title

Laser effect on short term stability after orthodontic treatment

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria: 1) cl 1 malocclusion 2) without extraction and moderate crowding (5-9mm) 3) rotated teeth less than 30 4) no systemic disease 5) good oral hygiene 6) not consuming medicine that interrupted

bone metabolism Exclusion criteria: 1) diseases that laser irradiation is contraindicated 2) Gingival and periodontal inflammation

Age

From **15 years** old to **30 years** old

Gender

Both

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **14**

Randomization (investigator's opinion)

Randomized

Randomization description

Blinding (investigator's opinion)

Not blinded

Blinding description

Placebo

Not used

Assignment

Parallel

Other design features

Simple random sampling

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Kerman university of medical sciences

Street address

Kerman University of Medical Sciences, Medical University Campus, Haft-Bagh Highway, Kerman

City

kerman

Postal code

Approval date

2017-04-22, 1396/02/02

Ethics committee reference number

IR.kmu.REc.1395.932

Health conditions studied

1

Description of health condition studied

Crowding

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description

Crowding

Timepoint

Immediate,4,5,6 months after treatment

Method of measurement

Milimeter by software

Secondary outcomes

1

Description

Crowding

Timepoint

Immediately,4,5,6 months after treatment

Method of measurement

Milimeter by software

Intervention groups

1

Description

Intervention group: The laser emitted a wavelength of 810 nm and operated in continuous wave mode with maximum power of 200 mw. The laser irradiate for 50 seconds per point, and thus each tooth receive 200 seconds of laser irradiation. Control group: no intrvention

Category

Treatment - Other

2

Description

Control group: without using placebo

Category

N/A

Recruitment centers

1

Recruitment center

Name of recruitment center

Orthodontic Department of Dental Faculty

Full name of responsible person

Street address

City

kerman

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Vice chancellor research, Kerman university of medical sciences

Full name of responsible person

Abbas Pardakhti

Street address

Kerman University of Medical Sciences, Medical University Campus, Haft-Bagh Highway, Kerman, Iran

City

Kerman

Grant name**Grant code / Reference number****Is the source of funding the same sponsor organization/entity?**

Yes

Title of funding source

Vice chancellor research, Kerman 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**

Dentistry school

Full name of responsible person

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Position**Other areas of specialty/work****Street address****City****Postal code****Phone**

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Fax**Email****Web page address****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