

Clinical Trial Protocol

Iranian Registry of Clinical Trials

20 Jun 2026

Evaluation of effect of low level laser on the rate of orthodontic tooth movement in human

Protocol summary

Summary

Objective: in this study the effect of low level laser therapy (LLLT) on the rate of orthodontic tooth movement in human was evaluated. **Methods & Materials:** In this clinical trial study 12 patients were included which had extracted upper first premolars and required canine retraction into extraction site. While in both sides, canines were retracted by Niti coil spring, one side was exposed with GaAlAs laser (890 nm). LLLT was done on the buccal and palatal mucosa by slow movement of probe. Impression and cast fabrication performed in the beginning of retraction and one and two months later. However laser therapy had done just in the first month of retraction. Amount of retraction on the rogae was measured by using digital caliper. Two days after beginning of retraction, the patients were asked about their pain on both sides by use of VAS scale.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT138804022066N1**
Registration date: **2009-07-28, 1388/05/06**
Registration timing: **retrospective**

Last update:

Update count: **0**

Registration date

2009-07-28, 1388/05/06

Registrant information

Name

Majid Mahmoudzadeh Darbandi

Name of organization / entity

Tehran university of medical sciences

Country

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Recruitment status

Recruitment complete

Funding source

vice chancellor for research, Tehran University of Medical Sciences

Expected recruitment start date

2008-05-10, 1387/02/21

Expected recruitment end date

2009-05-10, 1388/02/20

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Evaluation of effect of low level laser on the rate of orthodontic tooth movement in human

Public title

Evaluation of effect of laser on tooth movement

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria: patients who had been extracted upper first premolars for fixed orthodontic therapy Exclusion criteria: 1)having systematic diseases effecting bone remodeling 2)taking drugs effecting bone remodeling 3)facial asymmetry

Age

From **12 years** old to **25 years** old

Gender

Both

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: 12

Randomization (investigator's opinion)

N/A

Randomization description

Blinding (investigator's opinion)

Single blinded

Blinding description

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

Tehran university of medical sciences, Gods street

City

Tehran

Postal code

Approval date

1988-01-03, 1366/10/13

Ethics committee reference number

8379

Health conditions studied

1

Description of health condition studied

Laser therapy

ICD-10 code

W90

ICD-10 code description

Exposure to other nonionizing radiation

Primary outcomes

1

Description

acceleration of the rate of canine retraction

Timepoint

4 weeks

Method of measurement

measurement by digital caliper on the patient's cast

Secondary outcomes

1

Description

decreasing of pain

Timepoint

2 days

Method of measurement

VAS test

Intervention groups

1

Description

low level laser therapy on intervention side

Category

Treatment - Other

2

Description

low level laser in shut off mode on control side

Category

Placebo

Recruitment centers

1

Recruitment center

Name of recruitment center

Dental research center-Tehran university of medical science

Full name of responsible person

Street address

City

Tehran

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Vice chancellor for research, Tehran University of Medical Sciences

Full name of responsible person

Dr.Yunesian

Street address

Tehran university of medical sciences, Gods street

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Tehran

Grant name

Grant code / Reference number

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

Yes

Title of funding source

Vice chancellor for research, Tehran 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

Tehran university of medical sciences

Full name of responsible person

Dr. Majid Mahmoudzadeh Darbandi

Position

Resident of orthodontics department

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