

# Clinical Trial Protocol

## Iranian Registry of Clinical Trials

06 Jul 2026

### Evaluation the effects of diode laser (810nm) on microbial load and temperature changes in surface root and texture Periodontium after Endodontic therapy and root canal therapy

#### Protocol summary

##### Summary

The goals of this in vivo research are to evaluate temperature rise in periodontal tissue in buccal and lingual following intra canal irradiation in laser assisted endodontic treatment with 810-nm diode laser and Er, Cr:YSGG and also evaluation of bactericidal effect of 810 nm diode laser in teeth with apical periodontitis. Forty patients will participate in this research, each patient with a single canal tooth. Teeth will sterilize with 810 nm, power 1, 1.2,1.4,1.5,2 W, fiber 200 n m in the continuous mode (CW), radiation time 1sec/2 mm,4 times for each canal from apical to coronal, with circular movement. Temperature of periodontal tissue in 2 sides buccal and lingual and root surface in thirds will record by digital thermometer, body temperature will record exactly in that area of periodontal tissue and tooth before treatment too. In the following 40 patients with anterior or posterior teeth randomly will include in Laser and control group. After access to pulp chamber a file will insert inside the canal to move in the pulp, then canal will irrigate with 0.2 ml sterile saline solution. Canal will dry with 3 sterile paper points. Each paper cone left inside the canal after 30 seconds. These paper cones as first microbial samples will add to 200 BHI broth and will send to microbiology laboratory.

#### General information

##### Acronym

-

##### IRCT registration information

IRCT registration number: **IRCT2016022926822N1**

Registration date: **2016-04-21, 1395/02/02**

Registration timing: **registered\_while\_recruiting**

Last update:

Update count: **0**

##### Registration date

2016-04-21, 1395/02/02

##### Registrant information

###### Name

Elina Aghassi

###### Name of organization / entity

First private laser clinic in operative, periodontics and endodontics in North of Iran

###### Country

Iran (Islamic Republic of)

###### Phone

+98 11 3228 8969

###### Email address

elina.aghasi@gmail.com

##### Recruitment status

###### Recruitment complete

##### Funding source

Investigator

##### Expected recruitment start date

2016-02-22, 1394/12/03

##### Expected recruitment end date

2016-06-04, 1395/03/15

##### Actual recruitment start date

empty

##### Actual recruitment end date

empty

##### Trial completion date

empty

##### Scientific title

Evaluation the effects of diode laser (810nm) on microbial load and temperature changes in surface root and texture Periodontium after Endodontic therapy and root canal therapy

##### Public title

Effect of laser on tooth tissues and antimicrobial status.

## Purpose

Treatment

## Inclusion/Exclusion criteria

Inclusion criteria: All patients signed the informed consent to participate in this study  
Exclusion criteria: Patients with systemic disease

## Age

From **18 years** old to **60 years** old

## Gender

Both

## Phase

N/A

## Groups that have been masked

*No information*

## Sample size

Target sample size: **40**

## Randomization (investigator's opinion)

Randomized

## 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 Babol University of Medical Sciences

##### Street address

Babol University of Medical Sciences, Gang Afrooz Ave, Babol, Mazandaran

##### City

Babol

##### Postal code

#### Approval date

2016-02-20, 1394/12/01

#### Ethics committee reference number

MUBABOL.REC.1394.260

## Health conditions studied

### 1

#### Description of health condition studied

Patient with tooth root infections

#### ICD-10 code

k08

#### ICD-10 code description

Tooth root infection

## Primary outcomes

### 1

#### Description

Antibacterial status (Microbial)

#### Timepoint

Before and after study

#### Method of measurement

Microbial analysis in the laboratory

### 2

#### Description

Measurement of temperature change

#### Timepoint

Before and after study

#### Method of measurement

Thermometer non-contact, Microlohe NC100

## Secondary outcomes

empty

## Intervention groups

### 1

#### Description

Intervention group: Receiving laser.

#### Category

Treatment - Other

### 2

#### Description

Placebo group: Receiving mouthwash.

#### Category

Placebo

## Recruitment centers

### 1

#### Recruitment center

##### Name of recruitment center

Clinic

##### Full name of responsible person

Dr. Elina Aghassi

##### Street address

Mazandaran, Babol, square Keshvari.

##### City

Babol

## Sponsors / Funding sources

### 1

#### Sponsor

##### Name of organization / entity

Investigator

##### Full name of responsible person

Dr. Elina Aghasi

**Street address**

Mazandaran, Babol, Square Keshvari.

**City**

Babol

**Grant name**

**Grant code / Reference number**

-

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

Yes

**Title of funding source**

Investigator

**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**

Clinic

**Full name of responsible person**

Dr. Elina Aghasi

**Position**

Dentist

**Other areas of specialty/work**

**Street address**

Mazandaran, Babol, Square Keshvari.

**City**

Babol

**Postal code**

-

**Phone**

+98 11 3228 8969

**Fax**

-

**Email**

elina.aghasi@gmail.com

**Web page address**

-

**Person responsible for scientific inquiries**

**Contact**

**Name of organization / entity**

Clinic

**Full name of responsible person**

Dr. Elina Aghasi

**Position**

Dentist

**Other areas of specialty/work**

**Street address**

Mazandaran, Babol, Square Keshvari.

**City**

Babol

**Postal code**

-

**Phone**

+98 11 3228 8969

**Fax**

-

**Email**

elina.aghasi@gmail.com

**Web page address**

-

**Person responsible for updating data**

**Contact**

**Name of organization / entity**

Clinic

**Full name of responsible person**

Dr. Elina Aghasi

**Position**

Dentist

**Other areas of specialty/work**

**Street address**

Mazandaran, Babol, Square Keshvari.

**City**

Babol

**Postal code**

**Phone**

+98 11 3228 8969

**Fax**

-

**Email**

elina.aghasi@gmail.com

**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*