

# Clinical Trial Protocol

## Iranian Registry of Clinical Trials

28 May 2026

### Effect of low power laser (LPL) on soft tissue wound healing and pain reduction after dental implant surgery

#### Protocol summary

##### Summary

Objective: This randomized double-blind comparative study was undertaken to assess the efficacy of low power laser therapy in the healing of post-operative soft tissue wound and reduction of pain in patients who had been received implants. This study included 21 patients of both sexes and according to the inclusion and exclusion criteria were selected from patients whom had been received implants bilaterally in posterior sites of their jaws. Each side of every Patient's was randomly allocated to one of two groups according split mouth model: LLLT, or placebo. Subsequently to suturing, Sides in LLLT group were treated with 808nm and 660nm laser irradiation, intraorally 1mm from the target tissue 200s for 660nm and 20s for 808nm to 3 aspects, buccal, lingual and occlusal, every 48hs until 12th day. In placebo sides the handpiece was put intra orally but laser was not activated. Wound healing was evaluated on third, seventh and fourteenth post-operative day and pain reduction evaluated on 12th ,24th ,48th and 72 th hour after surgery by means of visual analogue scale (Vas).

#### General information

##### Acronym

##### IRCT registration information

IRCT registration number: **IRCT2015061322699N1**

Registration date: **2017-03-17, 1395/12/27**

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

Last update:

Update count: **0**

##### Registration date

2017-03-17, 1395/12/27

##### Registrant information

##### Name

Reza Birang

##### Name of organization / entity

##### Country

Iran (Islamic Republic of)

##### Phone

+98 31 3792 5525

##### Email address

birang@dnt.mui.ac.ir

##### Recruitment status

**Recruitment complete**

##### Funding source

Deputy Dean for research, Faculty of Dentistry, Isfahan university of Medical Sciences

##### Expected recruitment start date

2017-02-20, 1395/12/02

##### Expected recruitment end date

2017-05-23, 1396/03/02

##### Actual recruitment start date

empty

##### Actual recruitment end date

empty

##### Trial completion date

empty

##### Scientific title

Effect of low power laser (LPL) on soft tissue wound healing and pain reduction after dental implant surgery

##### Public title

Effect of low power laser (LPL) on soft tissue wound healing and pain reduction after dental implant surgery

##### Purpose

Supportive

##### Inclusion/Exclusion criteria

Inclusion criteria: Patients were registered at the implant department of faculty of dentistry of Isfahan University of medical sciences, possessed of unilaterally posterior edentulous ridges, good bone quality, healthy systemic, not using corticosteroids and bisphosphonate, without sever anxiety and dentistry phobia, age at least 18, without mental disability Exclusion criteria: Low

compliant patients, not attending at the expected time of measurement, smoking, any contraindication of laser therapy, pregnancy

#### **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)**

Double blinded

#### **Blinding description**

#### **Placebo**

Used

#### **Assignment**

Parallel

#### **Other design features**

## **Secondary Ids**

empty

## **Ethics committees**

### **1**

#### **Ethics committee**

##### **Name of ethics committee**

Ethic committee of Isfahan University Of Medical Sciences

##### **Street address**

Hezar Jarib, Dental School, Isfahan University Of Medical Sciences, Department of Dental Implants

##### **City**

Isfahan

##### **Postal code**

8174673461

#### **Approval date**

2017-02-19, 1395/12/01

#### **Ethics committee reference number**

IR.MUI.REC.1395.3.842

## **Health conditions studied**

### **1**

#### **Description of health condition studied**

Gingival wound healing

#### **ICD-10 code**

Z01.2

#### **ICD-10 code description**

Dental examination

## **Primary outcomes**

### **1**

#### **Description**

Wound healing

#### **Timepoint**

The third, seventh and fourteenth day after surgery

#### **Method of measurement**

Direct observation and comparison to standard images

## **Secondary outcomes**

### **1**

#### **Description**

pain

#### **Timepoint**

12th, 24 th, 48 th and 72 th hour after surgery

#### **Method of measurement**

visual analogue scale (Vas)

## **Intervention groups**

### **1**

#### **Description**

Intervention Group: Sides in LLLT group were treated with 808nm and 660nm laser irradiations, intraorally 1mm from the target tissue 200s for 660nm and 20s for 808nm to 3 aspects, buccal, lingual and occlusal, every 48hs until 12th day.

#### **Category**

Other

### **2**

#### **Description**

Control group: Sides in placebo sides the hand piece was put intraorally 1mm from the target tissue 200s for 660nm and 20s for 808nm to 3 aspects, buccal, lingual and occlusal, every 48hs until 12th day. But laser was not activated.

#### **Category**

Placebo

## **Recruitment centers**

### **1**

#### **Recruitment center**

##### **Name of recruitment center**

Faculty of Dentistry, Isfahan University of Medical sciences

##### **Full name of responsible person**

Soheil Noohi

##### **Street address**

Hezarjarib St.

##### **City**

Isfahan

## Sponsors / Funding sources

### 1

#### Sponsor

**Name of organization / entity**

Deputy Dean of research, Faculty of dentistry, Isfan  
University of Medical Sciences

**Full name of responsible person**

Dr Reza Birang

**Street address**

Hezarjarib St, Faculty of Dentistry

**City**

Isfahan

**Grant name**

تحقیقاتی

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

Yes

**Title of funding source**

Deputy Dean of research, Faculty of dentistry, Isfan  
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**

Faculty of Dentistry, Isfahan University of Medical  
Sciences

**Full name of responsible person**

Soheil Noohi

**Position**

Periodontics Postgraduate student

**Other areas of specialty/work****Street address**

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## Person responsible for scientific inquiries

**Contact****Name of organization / entity**

Faculty of Dentistry, Isfahan University of Medical  
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**Full name of responsible person**

Reza Birang

**Position**

Professor of Periodontics

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## Person responsible for updating data

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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*