

# Clinical Trial Protocol

## Iranian Registry of Clinical Trials

25 Jun 2026

### Effect of corticotomy with and without lasercision on the canine retraction in orthodontic patients: a randomized clinical trial

#### Protocol summary

##### Study aim

To assess the effect of corticotomy with and without lasercision on the canine retraction in orthodontic patients

##### Design

This is a randomized clinical trial, phase II, in which 12 eligible patients will be randomly assigned to the intervention and control groups

##### Settings and conduct

The eligible orthodontic patients who will refer to School of Dentistry in Hamadan City during the study period will be enrolled in the trial.

##### Participants/Inclusion and exclusion criteria

Inclusion criteria: Age of 15 to 30 years Corticotomy of maxilla Pulling bilateral premolars Proper oral hygiene Adequate thickness of adhesive gums (1 to 2 mm)  
Exclusion criteria: Active periodontitis Probe depth of above 3 mm A previous history of orthodontic Any systematic disease Vitamin D deficiency Using NSAIDS drugs or hormonal supplements or tricyclic antidepressants

##### Intervention groups

Intervention group: Corticotomy of maxilla on one side with lasercision 2780 nm, 30 hz, 3.5 W Control group: Corticotomy of maxilla on the side without lasercision

##### Main outcome variables

Primary outcome: Assessing the canine movement  
Assessing the molar movement

#### General information

##### Reason for update

##### Acronym

##### IRCT registration information

IRCT registration number: **IRCT20120215009014N280**  
Registration date: **2019-05-22, 1398/03/01**  
Registration timing: **retrospective**

Last update: **2019-05-22, 1398/03/01**

Update count: **0**

##### Registration date

2019-05-22, 1398/03/01

##### Registrant information

###### Name

Jalal Poorolajal

###### Name of organization / entity

Department of Epidemiology & Biostatistics Hamadan University of Medical Sciences

###### Country

Iran (Islamic Republic of)

###### Phone

+98 81 1838 0090

###### Email address

poorolajal@umsha.ac.ir

##### Recruitment status

**Recruitment complete**

##### Funding source

##### Expected recruitment start date

2019-04-04, 1398/01/15

##### Expected recruitment end date

2019-05-21, 1398/02/31

##### Actual recruitment start date

empty

##### Actual recruitment end date

empty

##### Trial completion date

empty

##### Scientific title

Effect of corticotomy with and without lasercision on the canine retraction in orthodontic patients: a randomized clinical trial

##### Public title

Effect of corticotomy with and without lasercision on the canine retraction in orthodontic patients

##### Purpose

Treatment

## Inclusion/Exclusion criteria

### Inclusion criteria:

Age of 15 to 30 years  
Corticotomy of maxilla  
Pulling bilateral premolars  
Proper oral hygiene  
Adequate thickness of adhesive gums (1 to 2 mm)

### Exclusion criteria:

Active periodontitis  
Probe depth of above 3 mm  
Any previous history of orthodontic  
Any systematic disease  
Vitamin D deficiency  
Using NSAIDS drugs or hormonal supplements or tricyclic antidepressants

## 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: **12**

## Randomization (investigator's opinion)

Randomized

## Randomization description

Random assignment of the right and left sides of the patients to the intervention and control groups through the tossing coin.

## Blinding (investigator's opinion)

Not blinded

## Blinding description

## Placebo

Not used

## Assignment

Parallel

## Other design features

## Secondary Ids

empty

## Ethics committees

### 1

#### Ethics committee

##### Name of ethics committee

Ethics Committee of Hamadan University of Medical Sciences

##### Street address

Vice-chancellor for Research and Technology,  
Hamadan University of Medical Sciences, Shahid Fahmideh Ave

##### City

Hamadan

##### Province

Hamadan

##### Postal code

6517838695

#### Approval date

2019-03-09, 1397/12/18

#### Ethics committee reference number

IR.UMSHA.REC.1397.969

## Health conditions studied

### 1

#### Description of health condition studied

Orthodontic

#### ICD-10 code

Z46.4

#### ICD-10 code description

Encounter for fitting and adjustment of orthodontic device

## Primary outcomes

### 1

#### Description

Assessing the canine movement

#### Timepoint

7 days after the intervention

#### Method of measurement

With physical examination

### 2

#### Description

Assessing the molar movement

#### Timepoint

7 days after the intervention

#### Method of measurement

With physical examination

## Secondary outcomes

empty

## Intervention groups

### 1

#### Description

Intervention group: Corticotomy of maxilla on one side with lasercision 2780 nm, 30 hz, 3.5 W

#### Category

Other

### 2

#### Description

Control group: Corticotomy of maxilla on the side without lasercision

#### Category

Other

## Recruitment centers

### 1

#### Recruitment center

##### Name of recruitment center

School of Dentistry in Hamadan City

##### Full name of responsible person

Azadeh Kazemi Saleh

**Street address**

School of Dentistry, Hamadan University of Medical Sciences, Shahid Fahmideh Ave.

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## Sponsors / Funding sources

### 1

**Sponsor**

**Name of organization / entity**

Hamedan University of Medical Sciences

**Full name of responsible person**

Dr Saeid Bashirian

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Hamadan University of Medical Sciences, Shahid Fahmideh Ave

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info.research@umsha.ac.ir

**Grant name**

**Grant code / Reference number**

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

Yes

**Title of funding source**

Hamedan University of Medical Sciences

**Proportion provided by this source**

100

**Public or private sector**

Public

**Domestic or foreign origin**

Domestic

**Category of foreign source of funding**

*empty*

**Country of origin**

**Type of organization providing the funding**

Academic

## Person responsible for general inquiries

**Contact**

**Name of organization / entity**

Hamedan University of Medical Sciences

**Full name of responsible person**

Azadeh Kazemi Saleh

**Position**

Dentistry Student

**Latest degree**

Medical doctor

**Other areas of specialty/work**

Dentistry

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## Person responsible for scientific inquiries

**Contact**

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Hamedan University of Medical Sciences

**Full name of responsible person**

Dr. Majid Mahmoodzadeh

**Position**

Orthodontist

**Latest degree**

Medical doctor

**Other areas of specialty/work**

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## Person responsible for updating data

**Contact**

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Hamedan University of Medical Sciences

**Full name of responsible person**

Dr Jalal Poorolajal

**Position**

Professor of Epidemiology

**Latest degree**

Ph.D.

**Other areas of specialty/work**

Epidemiology

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**Sharing plan****Deidentified Individual Participant Data Set (IPD)**

Undecided - It is not yet known if there will be a plan to

make this available

**Study Protocol**

Undecided - It is not yet known if there will be a plan to  
make this available

**Statistical Analysis Plan**

Undecided - It is not yet known if there will be a plan to  
make this available

**Informed Consent Form**

Undecided - It is not yet known if there will be a plan to  
make this available

**Clinical Study Report**

Undecided - It is not yet known if there will be a plan to  
make this available

**Analytic Code**

Undecided - It is not yet known if there will be a plan to  
make this available

**Data Dictionary**

Undecided - It is not yet known if there will be a plan to  
make this available