

# Clinical Trial Protocol

## Iranian Registry of Clinical Trials

11 Jun 2026

### The effect of autologous leukocyte platelet rich fibrin (LPRF) on the rate of orthodontic tooth movement- a prospective randomized clinical trial

#### Protocol summary

Registration timing: **retrospective**

#### Summary

**Objectives:** The effect of autologous leukocyte platelet rich fibrin (LPRF) on the rate of orthodontic tooth movement- a prospective randomized clinical trial  
**Design:** Premolar extraction will be done at eight orthodontic patients after primary. On one side of each jaw, the defects will be preserved as the experimental group by immediately placing LPRF in the extracted socket and will be sutured, the other side will serve as the control group for secondary healing. Immediately, the teeth adjacent to the defects will be pulled together by a NiTi-based closed-coil spring with constant force level. The amounts of OTM will be measured by comparing the changes of distance between the adjacent teeth in two weeks interval for three months. The exact amounts of tooth movement will be measured clinically by Boley Gauge Caliper with sharp tips located at the CEJ of crowns of the casts and then will be compared and double checked by another independent blind examiner.  
**Primary Outcome Measures:** the amount of tooth movement and to compare the amount of tooth movement between maxillary and mandibular arches.  
**Secondary Outcome Measures:** Incidence of mucogingival defects as clinically measured by gingival recession (GR), clinical attachment level (CAL), probing depth (PD), width of keratinized tissue (WKT) and (biotype), by a calibrated examiner. **Inclusion Criteria:** bilaterally symmetric extraction of premolar teeth; no medicines or systemic illness; **Exclusion Criteria:** syndromic & systemic illness or medication like NSAIDS that interfere with OTM; prior orthodontic treatment.

Last update:

Update count: **0**

#### Registration date

2016-03-23, 1395/01/04

#### Registrant information

##### Name

Azita Tehranchi

##### Name of organization / entity

Dental School Shahid Beheshti University of Medical Sciences

##### Country

Iran (Islamic Republic of)

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+98 21 2241 3897

##### Email address

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#### Recruitment status

**Recruitment complete**

#### Funding source

Dental Research Center, Shahid Beheshti University of Medical Sciences.

#### Expected recruitment start date

2015-03-20, 1393/12/29

#### Expected recruitment end date

2016-03-19, 1394/12/29

#### Actual recruitment start date

empty

#### Actual recruitment end date

empty

#### Trial completion date

empty

#### Scientific title

The effect of autologous leukocyte platelet rich fibrin (LPRF) on the rate of orthodontic tooth movement- a prospective randomized clinical trial

#### General information

##### Acronym

rate of orthodontic tooth movement following LPRF

##### IRCT registration information

IRCT registration number: **IRCT2015100724405N1**

Registration date: **2016-03-23, 1395/01/04**

## Public title

The effect of autologous leukocyte platelet rich fibrin (LPRF) on the rate of orthodontic tooth movement- a prospective randomized clinical trial

## Purpose

Treatment

## Inclusion/Exclusion criteria

Inclusion Criteria: more than 12 years old patients; bilaterally symmetric extraction of premolar teeth; no medicines or systemic illness; full banding/bonding of teeth in both arches. Exclusion Criteria: pregnancy; non-extraction treatment; syndromic & systemic illness or medication like NSAIDs that interfere with OTM; prior orthodontic treatment.

## 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: 8

## Randomization (investigator's opinion)

Randomized

## Randomization description

## Blinding (investigator's opinion)

Single blinded

## Blinding description

## Placebo

Not used

## Assignment

Parallel

## Other design features

## Secondary Ids

empty

## Ethics committees

### 1

#### Ethics committee

##### Name of ethics committee

ETHICAL COMMITTEE, RESEARCH INSTITUTE OF DENTAL SCIENCES

##### Street address

EVIN DENTAL SCHOOL SHAHID BEHESHTI UNIVERSITY  
IF MEDICAL SCIENCES

##### City

Tehran

##### Postal code

1983963113

#### Approval date

2014-03-02, 1392/12/11

#### Ethics committee reference number

9310

## Health conditions studied

### 1

#### Description of health condition studied

orthodontic tooth movement

#### ICD-10 code

Z51.8

#### ICD-10 code description

Other specified medical care

## Primary outcomes

### 1

#### Description

the amount of tooth movement and to compare the amount of tooth movement between maxillary and mandibular arches

#### Timepoint

[Time Frame: 0 days, 15 days, 1st month, 1.5 and 2nd month, 2.5 and 3rd month after start of treatment and conventional orthodontic]

#### Method of measurement

The amounts of OTM will be measured by comparing the changes of distance between the adjacent teeth in two weeks interval for three months. The exact amounts of tooth movement will be measured clinically by Boley Gauge Caliper with sharp tips located at the CEJ of crowns of the casts and then will be compared and double checked by another independent blind examiner (to evaluate the interobserver and intraobserver reliability).

## Secondary outcomes

### 1

#### Description

mucogingival defects, gingival recession, clinical attachment loss, probing depth, width of keratinized gingiva

#### Timepoint

Time Frame: 0 days, 15 Days, 1st month, 1.5 month

#### Method of measurement

aesculap periodontal probe

## Intervention groups

### 1

#### Description

in this study, after leveling in each quadrant of upper and lower arches, the extracted sockets would receive LPRF in case group.

#### Category

Other

### 2

#### Description

In control group, no LPRF would be applied in empty extracted sockets.

**Category**

N/A

**Recruitment centers**

**1**

**Recruitment center**

**Name of recruitment center**

Private Clinic

**Full name of responsible person**

**Street address**

**City**

Tehran

**Sponsors / Funding sources**

**1**

**Sponsor**

**Name of organization / entity**

Dental Research Center

**Full name of responsible person**

Dr Azita Tehranchi

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Daneshjoo Blv, Evin, Chamran Highway,

**City**

Tehran

**Grant name**

**Grant code / Reference number**

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

Yes

**Title of funding source**

Dental Research Center

**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**

Dental Research Center, Research Institute of Dental Sciences

**Full name of responsible person**

Dr Azita Tehranchi

**Position**

Full Professor

**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*