

# Accelerating tooth movement with platelet-rich plasma

<b>Submission date</b> 18/08/2024	<b>Recruitment status</b> No longer recruiting	<input type="checkbox"/> Prospectively registered <input type="checkbox"/> Protocol
<b>Registration date</b> 27/08/2024	<b>Overall study status</b> Completed	<input type="checkbox"/> Statistical analysis plan <input type="checkbox"/> Results
<b>Last Edited</b> 27/08/2024	<b>Condition category</b> Oral Health	<input type="checkbox"/> Individual participant data <input type="checkbox"/> Record updated in last year

## Plain English summary of protocol

Background and study aims

This study aimed to evaluate the effectiveness of platelet-rich plasma (PRP) in accelerating orthodontic tooth movement and reducing treatment duration.

Who can participate?

Patients aged 18 to 25 years with anterior teeth crowding.

What does the study involve?

Patients were randomly assigned to either the PRP group or the control group. The PRP group received PRP injections at 0, 7, and 14 days, while the control group received standard orthodontic treatment without additional interventions.

What are the possible benefits and risks of participating?

This study will evaluate the efficiency of using PRP injection to accelerate orthodontic tooth movement. There is a risk of not achieving optimal results in some cases but the study team can manage these cases with alternative methods.

Where is the study run from?

Tishreen University (Syria)

When is the study starting and how long is it expected to run for?

November 2021 to August 2023

Who is funding the study?

Damascus University (Syria)

Who is the main contact?

Dr May Alel, [drmayakel@gmail.com](mailto:drmayakel@gmail.com)

## Contact information

Type(s)

Public, Scientific, Principal investigator

**Contact name**

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## **Additional identifiers**

**Clinical Trials Information System (CTIS)**

Nil known

**Protocol serial number**

Nil known

## **Study information**

**Scientific Title**

Enhancing orthodontic treatment efficiency with platelet-rich plasma: a randomized controlled trial

**Study objectives**

Can platelet-rich plasma (PRP) accelerate orthodontic tooth movement?

**Ethics approval required**

Ethics approval required

**Ethics approval(s)**

approved 07/12/2021, Damascus University ethics committee (MazzeH Highway, Damascus, -, Syria; +963 (0) 113341864; manager@hcsr.gov.sy), ref: 22486

**Study design**

Comparative interventional randomized controlled study

**Primary study design**

Interventional

**Study type(s)**

Quality of life, Treatment, Efficacy

## **Health condition(s) or problem(s) studied**

Anterior teeth crowding

## **Interventions**

Patients were randomly assigned to either the PRP group or the control group. The PRP group received PRP injections at 0, 7, and 14 days, while the control group received standard orthodontic treatment without additional interventions.

## **Intervention Type**

Procedure/Surgery

## **Primary outcome(s)**

Little's Irregularity Index: Dental models were obtained at four key stages: initial (T0), 5 weeks after beginning treatment (T1), 8 weeks into treatment (T2), and 10 weeks into treatment (T3). The Little's Irregularity Index was calculated with precision using a digital caliper to measure the distances between the contact points of the six anterior maxillary teeth.

## **Key secondary outcome(s)**

The duration of the orthodontic treatment was recorded in months, starting with the bonding of 0.022-inch brackets and concluding with the application of a 0.017 x 0.025-inch stainless steel archwire.

## **Completion date**

23/08/2023

# **Eligibility**

## **Key inclusion criteria**

1. Eligible participants were individuals aged 18 to 25 years
2. The study focused on patients with anterior teeth crowding ranging from 3 to 6 mm
3. A prerequisite for inclusion was the maintenance of excellent oral hygiene and periodontal status
4. Candidates with no prior orthodontic treatment history were included

## **Participant type(s)**

Healthy volunteer

## **Healthy volunteers allowed**

No

## **Age group**

Adult

## **Lower age limit**

18 years

## **Upper age limit**

25 years

## **Sex**

All

### **Total final enrolment**

40

### **Key exclusion criteria**

1. Individuals with any systemic medical conditions were not considered for the study
2. Excluded were patients with dental anomalies in tooth size or shape
3. The study did not include patients with skeletal discrepancies in the vertical, transverse, or anteroposterior dimensions
4. Those currently taking anti-inflammatory medications were also excluded from participation

### **Date of first enrolment**

01/01/2022

### **Date of final enrolment**

01/01/2023

## **Locations**

### **Countries of recruitment**

Syria

### **Study participating centre**

**Tishreen University**

Faculty of Dental Medicine

Department of Orthodontics

Latakia

Syria

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## **Sponsor information**

### **Organisation**

Damascus University

### **ROR**

<https://ror.org/03m098d13>

## **Funder(s)**

### **Funder type**

University/education

**Funder Name**

Damascus University

**Alternative Name(s)**

University of Damascus, , DU

**Funding Body Type**

Government organisation

**Funding Body Subtype**

Universities (academic only)

**Location**

Syria

## **Results and Publications**

**Individual participant data (IPD) sharing plan**

The datasets generated during and/or analysed during the current study will be available on request from Dr May Alel (drmayakel@gmail.com) and in the publication related to it after the end of the research.

**IPD sharing plan summary**

Available on request