

# Plasma Rich in Growth Factors (PRGF) for alveolar ridge preservation

|                                        |                                                   |                                                                                                                         |
|----------------------------------------|---------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| <b>Submission date</b><br>24/08/2026   | <b>Recruitment status</b><br>No longer recruiting | <input type="checkbox"/> Prospectively registered<br><input type="checkbox"/> Protocol                                  |
| <b>Registration date</b><br>26/08/2026 | <b>Overall study status</b><br>Completed          | <input type="checkbox"/> Statistical analysis plan<br><input type="checkbox"/> Results                                  |
| <b>Last Edited</b><br>02/09/2026       | <b>Condition category</b><br>Oral Health          | <input type="checkbox"/> Individual participant data<br><input checked="" type="checkbox"/> Record updated in last year |

**Plain English summary of protocol**  
Not provided at time of registration

## Contact information

**Type(s)**  
Public, Principal investigator, Scientific

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## Additional identifiers

## Study information

**Scientific Title**  
Clinical and radiographic evaluation of Plasma Rich in Growth Factors (PRGF) for alveolar ridge preservation in the anterior maxilla

**Study objectives**  
To find the clinical effectiveness of PRGF when compared to spontaneous healing for alveolar ridge preservation in the anterior maxilla.

## **Ethics approval required**

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## **Ethics approval(s)**

Approved 15/11/2024, Institutional Ethical Committee (IEC) Institute of Dental Sciences of Siksha O Anusandhan University (K8, Kalinga Nagar, Bhubaneswar, 751003, India; +91 06742386908; iec.ids@soa.ac.in), ref: IEC-IDS/IDS/SOA/2024/III-19

## **Primary study design**

Interventional

## **Allocation**

Non-randomized controlled trial

## **Masking**

Open (masking not used)

## **Control**

Active

## **Assignment**

Sequential

## **Purpose**

Treatment

## **Study type(s)**

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

Post tooth-extraction healing of alveolar sockets

## **Interventions**

The participants were divided into two groups with 10 sockets per group:

Group 1 (PRGF group): Sockets were filled with PRGF clot and then covered with PRGF membrane.

Group 2 (SH Group): Sockets were left to heal spontaneously.

### **Preparation of Plasma Rich in Growth Factors (PRGF)**

Blood was collected in 9 mL vacutainers containing 3.8% sodium citrate (BTI-Endoret® System V Centrifuge, Biotechnology Institute, Vitoria, Spain) and then the tubes were centrifuged at 580 g for 8 minutes using an Endoret System centrifuge (En-doret® System IV, Biotechnology Institute BTI S.L. Miñano, Álava, Spain). The plasma obtained was then separated into two layers:

F1: Platelet-poor Plasma

F2: The 2 mL of the plasma column just above the buffy coat

F2 layer was used to obtain the clot, as it was the fraction richest in platelets, by activating it using PRGF activator (10% calcium chloride). F1 layer was similarly activated to obtain the fibrin membrane.

### **Interventional Surgical Procedure:**

All the procedures were performed under sterile conditions. 2% lignocaine with 1:100,000 epinephrine was administered to the patients to obtain adequate anesthesia. Atraumatic

extraction was carried out in both groups using periostomes and elevators to reduce trauma to the surrounding alveolar bone, buccal cortical plate and soft tissues. After tooth removal, the socket was debrided meticulously to eliminate granulation tissue and debris. In the PRGF group, after tooth extraction, PRGF clot was packed in the socket and then the socket was covered with a PRGF membrane. In the spontaneous healing group, the extraction socket was left to heal without the placement of any biomaterial. A cross-mattress suture was placed using 4-0 non-resorbable silk across the socket to stabilize the clot and facilitate healing. Sutures were removed after 7 days.

## **Intervention Type**

Supplement

## **Primary outcome(s)**

1. Alveolar ridge dimensions measured using radiography by Cone Beam Computed Tomography (CBCT) in mm at baseline and 3 months

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

1. Radiographic bone density measured using CBCT derived as Hounsfield Units at Baseline and 3 months

2. Percentage of connective tissue and new bone formation measured using a histomorphometric evaluation at 3 months

3. Early soft tissue wound healing and flap closure measured using the Early Healing Index (EHI) at days 1, 3 and 7

4. Post operative pain measured using a Visual Analog Scale (VAS) in mm at days 1, 3 and 7

5. Soft tissue healing score measured using Index number at 1 week, 1 month and 3 month

## **Completion date**

31/03/2026

# **Eligibility**

## **Key inclusion criteria**

1. Male and female patients aged  $\geq 18$  years
2. An indication for uncomplicated tooth extraction in the anterior maxilla

## **Healthy volunteers allowed**

Yes

## **Age group**

Mixed

## **Lower age limit**

18 Years

## **Upper age limit**

70 Years

**Sex**

All

**Total final enrolment**

20

**Key exclusion criteria**

1. Presence of dehiscence
2. Loss of socket walls
3. Significant swelling or acute infection at the extraction site
4. A history of radiotherapy, chemotherapy, immunosuppressive therapy, systemic corticosteroid use or any anticoagulant therapy within the past 30 days
5. Regular use of NSAIDs
6. Uncontrolled diabetes
7. Presence of malignant tumours
8. Pregnant or lactating women, or those planning pregnancy during the study period

**Date of first enrolment**

15/11/2024

**Date of final enrolment**

31/10/2025

**Locations****Countries of recruitment**

India

**Study participating centre**

Institute of Dental Sciences, Siksha O Anusandhan University

Bhubaneswar

India

**Sponsor information****Organisation**

Siksha O Anusandhan University

**ROR**

<https://ror.org/056ep7w45>

**Funder(s)**

## Funder type

### Funder Name

Siksha O Anusandhan University

## Results and Publications

### Individual participant data (IPD) sharing plan

The datasets generated during and/or analysed during the current study will be available upon request from Dr Saurav Panda, sauravpanda@soa.ac.in, drsaurav87@gmail.com

### IPD sharing plan summary

Available on request

### Study outputs

| Output type                                   | Details | Date created | Date added | Peer reviewed? | Patient-facing? |
|-----------------------------------------------|---------|--------------|------------|----------------|-----------------|
| <a href="#">Participant information sheet</a> |         |              | 26/08/2026 | No             | Yes             |