

## Efficacy of Growth Factor Application in the Surgical Treatment of Periodontitis

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**Introduction.** Inflammatory periodontal diseases remain a major challenge in dentistry. Traditional surgical methods eliminate the inflammatory focus but do not achieve complete regeneration of lost tissues. The use of autologous platelet concentrates, which contain growth factors and possess immunomodulatory activity, is considered a promising approach [1].

**Objective.** To summarize clinical evidence on the efficacy of platelet concentrates in the surgical treatment of periodontitis.

**Materials and Methods.** Analysis of systematic reviews, meta-analyses, and RCTs published in PubMed between 2024 and 2026.

**Results.** Bıçakcıoğlu and Çolak (2025) demonstrated that platelet-rich fibrin (PRF) modulates the immune response by promoting regulatory T-cell differentiation and M2 macrophage polarization, thereby improving clinical outcomes [1]. Rithesh et al. (2025), in an RCT of 24 patients with intrabony defects, showed that adding injectable PRF (i-PRF) to a bone graft during open flap debridement significantly improved defect closure and clinical parameters compared to bone graft alone [2]. Kumari et al. (2025), in an RCT of 20 patients, compared albumin-enriched PRF (Alb-PRF) with conventional PRF. After 1 month, pocket depth reduction in the Alb-PRF group was 3.2 mm (attachment gain 2.8 mm), which slightly exceeded the results of the conventional PRF group [3].

**Conclusion.** The use of platelet concentrates (PRF, i-PRF, Alb-PRF) in the surgical treatment of periodontitis is effective and improves clinical outcomes. However, protocol variability necessitates further research to standardize methods.

References

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