


# PRF(platelet-richfibrin)application for soft tissue regeneration

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Use of Self Blood Biomaterials and rhBMP-2 in Soft tissue and Bone augmentation

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*Tissue Engineering Triad for Implantology*

- **Scaffolds**  
Autoaar, Xenaar, Allaar, Allaal
- **Cells**  
MSCs: Mesenchymal Stem Cells  
IPS Cell  
Osteoblast
- **Signals**  
Growth Factors: VEGF, PDGF, PRP  
Bone Morphogenetic Proteins (BMP)

*Clinical importance*

- ✓ PRF membrane maintaining and protecting the graft materials and PRF fragments serving as biological connectors between bone particles
- ✓ Fibrin network into the regenerative site facilitates cellular migration particularly for endothelial cells necessary for the angiogenesis,vascularization and survival of the graft
- ✓ Platelet cytokines (PDGF, TGF- $\beta$ , IGF-1) are gradually released as the fibrin matrix is resorbed, creating a process of healing
- ✓ Leukocytes and cytokines in the fibrin network can play a significant role in the self regulation of inflammatory and infections within the graft material



From these, there is a history than STMP cells and IPS, there is a safety, in GROWTH FACTER application, there is a reality in the current stage. I think should be expanded the application to watch these things in the future