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Effects of Platelet-Rich Plasma and Platelet-Poor Plasma on Human Dermal Fibroblasts

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Highlights

- Platelet-rich plasma (PRP) improves non-healing wounds.
- Platelet-rich plasma improves collagen regeneration.
- Platelet-rich plasma improves fibroblast proliferation.
- Platelet-rich plasma increases the tensile strength of tissues.
- Platelet-rich plasma is also rich in leucocytes, hence could be termed leucocyte-rich platelet-rich plasma.

ABSTRACT

Platelet-rich plasma is an autologous and safe blood product containing a high concentration of platelets and leucocytes. Platelets, growth factors, leucocytes and plasma are fundamental fibroblast proliferation agents. Leucocytes' plasticity, reparative qualities, cross-talk between cells and capacity to orchestrate diverse outcomes are receiving considerable research attention. Fibroblasts are able to migrate and proliferate into the tissue surrounding a wound and subsequently deposit granulation tissue, which minimises scarring. Fibroblasts also have anti-ageing benefits. Elucidation of the role of leucocytes in tissue repair has led to a new approach to tissue regeneration and the formation of a new therapeutic modality, namely immuno-regenerative medicine.

Keywords:

Leucocyte-Rich Platelet-Rich Plasma
Platelet-Rich Plasma
PRP
Platelet-Poor Plasma
Platelet Gel
Platelet-Rich Fibrin
Fibroblasts
Regenerative medicine

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