

Platelet-rich plasma (PRP) injections: a promising dose-dependent treatment for osteoarthritis pain

Zac Wold and Dr. Jutta Heller*

Osteoarthritis (OA) is a highly prevalent joint disease associated with age and activity. Despite advancements in treatment, surgery options remain highly invasive and intra-articular injections such as corticosteroids pose a variety of health risks. More recent research has investigated the use of platelet-rich plasma (PRP) in the treatment of OA, a therapy that utilizes concentrated blood samples to promote healing. In this literature review, evidence was gathered regarding dosage considerations, potential mechanisms of symptom management, and clinical efficacy of PRP injections. In terms of clinical efficacy, the research points towards improvements in pain assessments following PRP treatment, with outcomes strongly relying on platelet dosage and preparation methods. Potential mechanisms include the inhibition of key inflammatory pathways such as NF- κ B and modulation of inflammatory mediators IL-1 β and TNF- α . Additional research highlights regulation of the extracellular matrix; however, disagreements persist regarding the effects on metalloproteinases and related enzymes, which play a crucial role in joint degradation. Further research should be aimed towards evaluating the effects of different PRP preparations, including the concentrations of platelets and leukocytes.