

# Platelet Rich Plasma - PRP

Platelet rich plasma is prepared from the patients' own blood. A sample of blood is separated into different components using a centrifuge. The platelet rich region is injected into the affected area under image guidance. This procedure is performed by the radiologists at PRG, and here in Christchurch PRP and Orthokine (PRP with interleukin-1 antagonists) are available technologies.

Platelets are a component of blood that have a role in clotting. PRP is a concentration of platelets and growth factors, including transforming growth factor- $\beta$ , (TGF- $\beta$ ), vascular endothelial growth factor (VEGF), platelet derived growth factor (PDGF), fibroblast growth factor-2 (FGF-2), and insulin-like growth factor-1 (IGF-1). These factors may stimulate tenocytes, stem cells and endothelial cells to increase healing and decrease inflammation.

**The procedure** takes around 30 minutes, most of this time is preparing the PRP for injection. Patients are advised to take a support person to drive them home. It is recommended to use the affected region gently for the first week after the injection then increase activity gradually. Generally, it is advised to keep the injected region moving gently in the first week, then increase use but avoid activities that avoid pain until 4 weeks, and after that gradually introduce loading to the level of causing discomfort or pain for short periods.

**Side effects** may occur. Pain initially following the injection is common and may be more than a cortisone injection. Like any injection, potential side effects include, but are not limited to: a very small risk of infection, reaction to local anaesthetic, skin discolouration and injury to nerves or blood vessels. There is a risk the injection may not help.

**Costs.** Currently, the insurers cover part of the cost as a diagnostic injection +/- dry needling. This is a common technique where multiple passes of the needle are made to fenestrate a tendon to encourage healing. In 2021 the surcharge is \$100, but this may vary.

## Some upper limb conditions that may benefit from PRP

### Lateral epicondylitis

Studies have reported better long-term results with PRP injection compared to cortisone injection. Cortisone injection generally results in less pain early on and over the first few weeks with a tendency for the pain to return to a degree. One study reported the pain scores to be 4.2/10, 2 years post injection in the cortisone group and 2.1/10 in the PRP group. Both groups had scores approximately 6.8/10 pre-treatment.

[Ongoing Positive Effect of Platelet-Rich Plasma Versus Corticosteroid Injection in Lateral Epicondylitis : A Double-Blind Randomized Controlled Trial With 2-year Follow-up](#)

### Partial thickness rotator cuff tears, subacromial impingement pain

A review of published studies reported that pain relief was better in the first 3 months with cortisone injection, but better at 24 weeks and longer in those having PRP injections. The results of those having cortisone injections deteriorated between 3 to 6 months. The average pre-treatment, 6 weeks and 24 weeks scores were 5.6/10, 2.7/10, 4.1/10 in the cortisone groups and 6.2/10, 3.5/10 and 2.0/10 in the PRP groups.

[The Efficacy of Injections for Partial Rotator Cuff Tears: A Systematic Review:](#)

### Osteoarthritis

PRP has been used in knee osteoarthritis with some promising results reporting improved pain and function. The mode of action has been studied and is likely to apply to other joints. A laboratory study measured the effects of PRP injections and compared this to HA (hyaluron) injections by measuring the effects on arthritic synovial tissue of patients with knee arthritis. Both had some effects but more ranging effects with PRP. The conclusion was that PRP had antinociceptive and anti-inflammatory effects to reduce pain and modulate the disease process.

[The Anti-inflammatory and Matrix Restorative Mechanisms of Platelet-Rich Plasma in Osteoarthritis](#)