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Platelet-Rich Plasma (PRP)

What is PRP?

PRP is a biologic therapy that uses a component of your own blood to harness the healing properties within the tiny clotting cells called platelets. Because the platelets are taken from your own blood, the treatment is safe and natural with little risk.

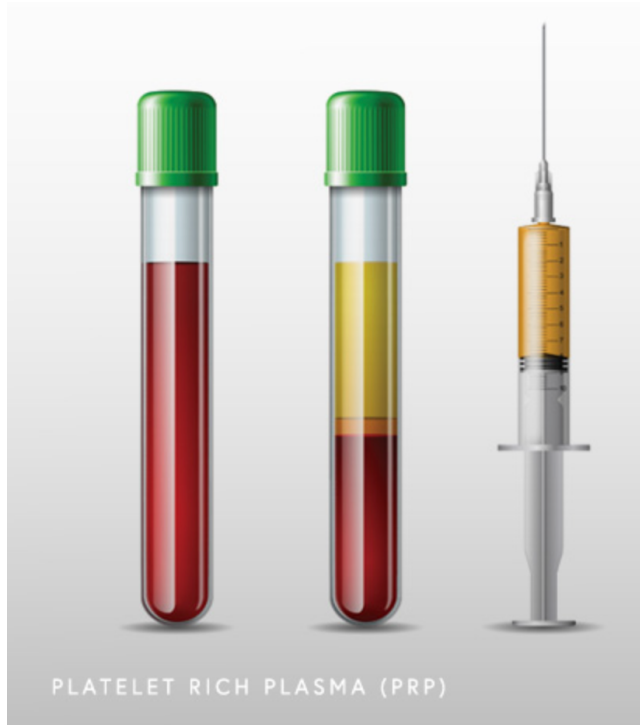
The preparation of PRP involves separating the liquid part of whole blood, called plasma, which contains the platelets. Once the platelets are isolated and activated, they are effectively tricked into behaving as though they are mending a wound or stopping bleeding, releasing healing molecules called cytokines and growth factors.

When is PRP used?

PRP has increasingly shown promise for a number of painful conditions affecting the tendons of the shoulder(1) and elbow(2), as well as for osteoarthritis(3). PRP is used as an adjunct to other nonsurgical treatments, or as an alternative to surgery when other treatments have not worked. Because of PRP's modulation of the inflammatory process and emerging evidence of efficacy, it is gaining popularity and is increasingly used in athletes of all ages including professionals.

How does PRP work exactly?

When platelets are activated outside the body, they release growth factors (including IGF-1, TGF- β , EGF, PDGF, VEGF, and FGF) that have been shown to produce an anabolic (healing) response. Platelet activation also causes release of signaling cytokines that modulate the destructive inflammatory process seen in arthritis and tendinopathy. While PRP cannot regenerate cartilage or tendon, it is hypothesized to improve the biologic environment where pain originates.





What is having a PRP injection like?

PRP injection requires drawing your blood in a sterile fashion by a staff member, followed by a few minutes of waiting for processing. During this time your blood is placed into a centrifuge to separate the components and the platelet-dense portion of the plasma is activated by a chemical activator. When ready, the yellow-tinged activated platelet-dense plasma solution is injected into the treatment area. The total time for the procedure is less than a half-hour.

The injection can be uncomfortable, and it may take several days to a couple weeks to notice the effects. Soreness is treated with icing, elevation, and rest for the days following the injection, as routine with other injections.

References:

1. Kwong CA, Woodmass JM, Gusnowski EM, Bois AJ, Leblanc J, More KD, Lo IKY. Platelet-Rich Plasma in Patients With Partial-Thickness Rotator Cuff Tears or Tendinopathy Leads to Significantly Improved Short-Term Pain Relief and Function Compared With Corticosteroid Injection: A Double-Blind Randomized Controlled Trial. *Arthroscopy*. 2021 Feb;37(2):510-517. doi: 10.1016/j.arthro.2020.10.037. Epub 2020 Oct 28. PMID: 33127554.
2. Niemiec P, Szyluk K, Jarosz A, Iwanicki T, Balcerzyk A. Effectiveness of Platelet-Rich Plasma for Lateral Epicondylitis: A Systematic Review and Meta-analysis Based on Achievement of Minimal Clinically Important Difference. *Orthop J Sports Med*. 2022 Apr 8;10(4):23259671221086920. doi: 10.1177/23259671221086920. PMID: 35425843; PMCID: PMC9003647.
3. Belk JW, Kraeutler MJ, Houck DA, Goodrich JA, Dragoo JL, McCarty EC. Platelet-Rich Plasma Versus Hyaluronic Acid for Knee Osteoarthritis: A Systematic Review and Meta-analysis of Randomized Controlled Trials. *Am J Sports Med*. 2021 Jan;49(1):249-260. doi: 10.1177/0363546520909397. Epub 2020 Apr 17. PMID: 32302218.