

Platelet-rich Plasma (PRP) Injection

Platelet-rich plasma (PRP) injection therapy is a biological approach to treatment of damaged ligaments, tendons, and joints. Like prolotherapy, PRP falls into the category of interventions known as Regenerative Injection Therapies (RIT). These treatments are intended to promote and/or accelerate tissue healing. Unlike prolotherapy which uses irritants such as dextrose (sugar water) or sodium morrhuate (fish oil) PRP utilizes an autologous (patient's own) blood product which is very rich in growth factors. The basic premise with all RITs is the same -- to stimulate the body's natural healing cycle.

Platelets, the key ingredient in PRP, play a fundamental role in the healing process. These small, irregularly-shaped cells circulate in the bloodstream and adhere to any damaged tissue that they happen to encounter. This serves multiple functions. First, it stops any bleeding by forming a clot and plugging up damaged blood vessels. This event triggers the platelets to release a number of potent growth factors. Growth factors both recruit cells necessary for tissue repair to the wound site and also stimulate their proliferation. The high concentration of growth factors is unique to PRP and thought to be major reason for its success. The sum affect of PRP is stimulation of normal healing, only at a much more accelerated pace.

Although healthy tissues tend to heal normally, there are cases where this process is either very slow or healing is inadequate. Ligaments, tendons, and cartilage are all tissues with very limited healing capacity. Tendons attach muscle to bone. When muscles contract, the tension created in the tendon causes the bone to move, thus flexing or extending the joint. Ligaments attach bone to bone across joints. Their primary function is to provide stability and limit excessive motion. The primary building block of these tissues, as well as cartilage, which covers bone on joint surfaces, is collagen, a fibrous material with limited elasticity. All of these tissues tend to have a very limited blood supply. Unfortunately, these are also the structures injured with more severe sprains or strains and with repetitive activities. Once stretched or torn, ligaments, tendons, and cartilage tend to heal slowly and in many cases suboptimally. Consequently, they either remain painful when stressed and are at high risk for reinjury.

PRP is performed in an outpatient setting and usually takes about an hour to complete. Blood is first drawn and centrifuged utilizing specialized centrifuge technique. The blood product is then injected into the damaged tissue or joint, sometimes under fluoroscopic or ultrasonic guidance. Several such injections may be necessary before the full benefit of the treatment is realized.

Conditions which stand to benefit from PRP include:

Tendinitis

Rotator Cuff

Achilles

Ligament/Sprains

Sacroiliac

Lumbosacral

Joints

Shoulder, elbow, wrist, spine, sacroiliac joint, hip, knee, ankle

Lateral Epicondylitis (tennis elbow)	Plantar fasciitis
Medial Epicondylitis (golfer's elbow)	Ankle, knee, wrist, sprains
Patellar	Anterior/posterior cruciate

The vast majority of publications support PRP as an effective intervention for many conditions unresponsive to other forms of treatment.



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