Clinical studies have reported that PRP use can shorten recovery time, enhance tendon strength, and decrease wound infection. However, evidence is limited.

**Background for Emerging Use of PRP**

- Chronic musculoskeletal tendon injuries have long waited for the use of platelet-rich therapeutic protocols.
- Ultrasound-guided tendonitis or tenancy has been used with some success as a potential treatment for chronic tendinopathy.
- A wide array of injectable agents, such as hyaluronic acid, are effective for injection into tendons.
- Platelet-rich plasma (PRP)-injection has emerged as a treatment alternative for many musculoskeletal conditions, both acute and chronic.
- PRP has been acclimatized by the media after its successful effects in high level professional athletes.

**Fact:**

- There are an estimated 100 million sports-related injuries every year in the United States.

**Clinical uses of PRP**

1. PRP therapy is permeating radiology practices collaborating with sports medicine clinics, utilizing ultrasound for both diagnosis, guidance for precise needle placement, and follow-up.
2. The clinical applications of PRP are growing and include treatment of chronic tendinopathies, such as lateral epicondylitis (tennis elbow), Achilles tendinopathy, medial collateral ligament injuries, and plantar fasciopathy.
3. Chronic tendinopathy results from a cycle of dysrepair, often treated symptomatically, with steroid injections that weaken tendon and inhibit healing (Diagram illustrates process).

**How is PRP prepared?**

- PRP is commonly prepared in the outpatient sports medicine clinic or radiology setting using a table-top centrifuge machine.
- Centrifuge systems differ in ability to separate PBPs from platelets affecting concentration and composition, which is a major reason for lack of standardization.
- The working definition of PRP is 1,000,000 per µl platelet count, which is five times the normal concentration found in whole blood.
- Centrifugation separates the whole blood into three layers: red blood cells (bottom layer, specific gravity = 1.09), platelet-poor plasma (top layer, specific gravity = 1.03), and platelet concentrate that contains white blood cells (middle layer, specific gravity = 1.06).

**PRP Research**

- Clinical studies have reported that PRP use can shorten recovery time, enhance tendon strength, and decrease wound infection. However, evidence is limited.
- Recent double-blind randomized control trial (N=105) for tennis elbow comparing PRP to corticosteroid injections found a significant difference in disease-specific quality of life in pain scores favoring the PRP group.
- 72% PRP vs. 49% Steroid (p<.001)

**Selected References**


**Post-Procedure Protocol**

- **Patient is educated on both short-term and long-term expectations.
- PRP injection promotes local inflammation, so pain should be expected, which can be managed with NSAIDs.
- Immobilization for 48 hours and then protected weight bearing for 2 weeks in cases such as tennis elbow.
- Gradual return to activity over 6 to 8 weeks.

**Figure 4**

Ultrasound-guided PRP injection of the left hamstring origin in a 47-year-old woman triathlete. MRI (rotated 180°) showing needle placement (arrowheads) into hamstring origin (arrow). There is diffuse hypoechogenicity (arrow) or hyperemia (not shown). 22-gauge, 1.5 inch needle (arrowheads) is shown within the substance of the common extensor tendon. Osteophyte (pentagon) commonly seen in setting of tennis elbow. Radial head (R), lateral epicondyle (LE).