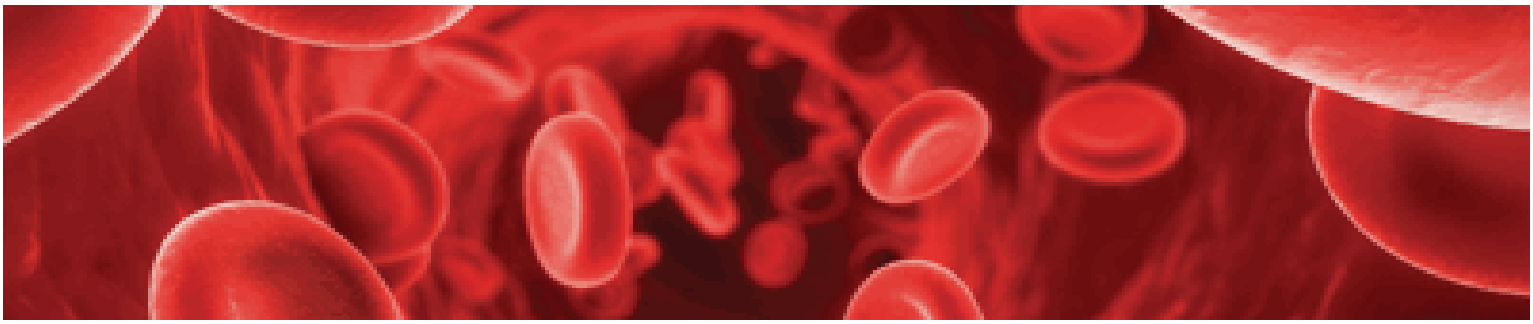
speed healing with PRP THERAPY

CAN BLOOD PLASMA TREATMENTS GET YOU BACK IN THE GAME?

By Daniel Hou, Hugue Ouellette and Gordon Andrews



PLATELET RICH PLASMA (PRP) therapy was introduced in the 1990s to treat soft tissue injuries in maxillofacial and plastic surgery.

Recently, there has been a surge of interest in the sports medicine and athletic communities in utilizing PRP for faster recovery and improved functional outcomes in tendon and ligament injuries. High-profile athletes such as Tiger Woods, who received four injections of PRP post-surgery in his left knee, or Pittsburgh Steelers Hines Ward and Troy Polamalu, who used it before winning the Super Bowl in 2009, have increased PRP awareness as a potential technique to maximize healing of bone and soft tissues.

The basis of PRP is to take your blood, which consists of 95 per cent red blood cells and 5 per cent platelets, spin it in a centrifuge and extract a concentrated form of platelets, which contain growth factors that are important to tissue regeneration and repair. The concentration of platelets is usually increased five to eight times normal although some clinics use concentrations as high as 45 times baseline. Some physicians may also activate the platelets with a patient's own thrombin, a molecule from his own blood that helps release the growth factors from the platelets. Under ultrasonographic or CT scan guidance, the anatomical structure is selectively targeted and PRP is injected.
PRP has been found to jumpstart the healing process via three mechanisms:

1. Release of growth factors that stimulate new cells and collagen production
2. Inhibition of excess inflammation (decreased early macrophage proliferation)
3. Attracting circulating or bone marrow -derived cells that help repair tissue

To the athlete, these benefits would potentially allow for earlier return to training and improved post-injury performance. Animal studies have shown PRP to speed up the healing of injured tendons and ligaments. These studies have translated into human studies that have shown PRP therapy to be effective for the treatment of elbow tendinopathy, Achilles tendinopathy and repair, patellar tendinopathy and recovering from rotator cuff surgery. PRP therapy has also been compared with corticosteroid injections in the treatment of tennis elbow in 100 patients, who found significant improvement in the outcomes of the PRP group with regard to pain and function.

More importantly, it was shown the initial benefits of corticosteroid injections gradually declined as opposed to PRP patients, who progressively improved. However, there have been mixed results in several studies, which have been attributed to lack of standardization of doses, varying number and interval of treatments, poor patient selection, and utilization of differing outcome measures. Currently, numerous institutions are conducting clinical PRP therapy trials with larger patient populations, longer follow-up intervals, and higher concentrations of PRP. For the future, the hope is these larger studies will help to better define the role and specific applications of PRP therapy in the sports medicine world. In January, the World Anti-Doping Agency removed intra-muscular autologous platelet concentrates from their prohibited list, which has since seen its use skyrocket in elite athletes.

As PRP therapy becomes mainstream, the aim is that using PRP therapy will not only be utilized by professional athletes, but also by the everyday amateur athlete.

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