

Platelet-rich plasma injections may lead to improvements in tissue healing

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Dr. Marni Wesner performs a platelet-rich plasma injection procedure on a patient at the University of Alberta Glen Sather Sports Medicine Clinic. Credit: University of Alberta

Tiger Woods, Kobe Bryant and A-Rod have all used it, but does platelet-rich plasma therapy (PRP) really work for the every-day active person? According to a University of Alberta Glen Sather Sports Medicine Clinic pilot study on patients with chronically sore shoulders published in *PLOS ONE*, preliminary findings say yes.

"We studied patients 35 to 60 years old with rotator cuff tendinopathy due to normal aging. For the first time, we were able to not only find reported improvements in pain and mobility, but also in the tissue - the MRI before and after showed structural change and a decrease in the size of tears," says Marni Wesner, sports medicine physician at the Glen Sather Sports Medicine Clinic and lead author of the study.

Platelet-rich plasma injection (PRP) is an emerging therapeutic procedure in medicine and rehabilitation for the treatment of both acute and chronic soft tissue injuries. It involves collecting blood from the patient's arm, separating the platelets via centrifuge and injecting it back into the patient's injured tissue area to augment (or facilitate) the body's natural healing response.

Platelets are cells that clot blood and contain over 300 active growth factors. In tissues that are aging and do not repair and regenerate well, growth factors may help to improve healing by creating an environment to foster healing and regeneration of tissue.

Though this is a pilot study on a small number of patients, the outcomes are still clinically relevant and this is the first time researchers have described structural change in the healing process as well as improvement in the patients' pain and function.

"Based on MRI findings before and after the injections, we saw

improvements in the tissue six months later in five of seven patients undergoing PRP and an appropriate rehabilitation program. The healing in the tissue appeared to correspond with the reported improvement of the pain and also with the clinical assessment of function," explains Doug Gross, interim chair of physical therapy at the Faculty of Rehabilitation Medicine and corresponding author of the study.

For retired police officer Debbie Brown who is a participant in the study, this healing from PRP made all the difference in her life.

"For the past two years, I have tried everything for my right shoulder. Physio would help for a bit but then the problem would still be there. I tried acupuncture, Kinesio tape, cortisol injections - you name it, I've tried it," says Brown. "Once I did the PRP, it really did fix everything!"

Brown says she did physical therapy with Heather Bredy at the Glen Sather Sports Medicine Clinic as part of her treatment and continues to do exercises regularly. Besides a bit of soreness here and there - she says she is 58, after all! - her shoulder is like new.

"I can shoulder-check now and brush my hair. I can work out and be active again," she says.

Wesner says it's important to note that to be considered for PRP at the Glen Sather Sports Medicine Clinic, the patient must be referred by a physician.

"The [sports medicine](#) physicians at the Glen Sather Sports Medicine Clinic always recommend and provide more conservative or 'traditional' care first, and appropriate rehabilitation along with the PRP injections" she says. "The Glen Sather Sports Medicine Clinic has done more than 600 PRP treatments on a variety of tendons and soft tissue areas. PRP injections at the clinic are ultra-sound guided."

Gross, also the director of the Rehabilitation Research Centre, says PRP therapy is becoming more widespread and the next step in research is to study its effectiveness in larger, well-designed controlled clinical trials. "This pilot study has shown promising results and important experience for planning subsequent studies."

As for Brown who's had renewed function and healing in her shoulder, she can't stop telling her friends and colleagues to go to the Glen Sather Clinic at the U of A.

"PRP makes me feel like I'm in my 20s!" she smiles.

Provided by University of Alberta

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