

WHAT YOU NEED TO KNOW ABOUT PRP

PLATELET RICH PLASMA FOR TREATING PAIN AND
JOINT AND TENDON INJURIES

JEAN SANTO MD

ADVANCED PAINCARE

MEDICAL DIRECTOR OF INTERVENTIONAL PAIN MANAGEMENT AT
PINNACLEHEALTH HOSPITALS, HARRISBURG, PA



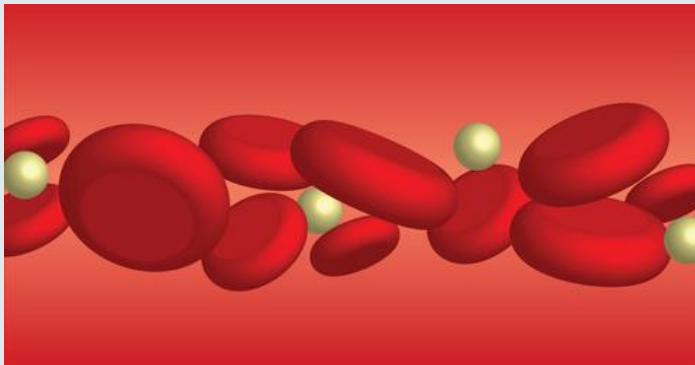
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TABLE OF CONTENTS:

1. Why platelets?.....	2
2. What exactly is PRP?.....	5
3. How are platelets being used?.....	6
4. Keep in mind.....	14
5. What's next for PRP?.....	18

CHAPTER 1:

WHY PLATELETS?



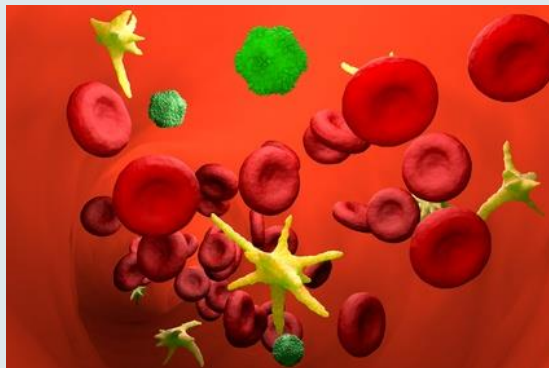
This chapter will teach you what platelets are and how they heal.

(Tiny yellow balls in the image above represent platelets. The red discs represent red blood cells)

It's really quite amazing.

PLATELETS

Platelets are fragments of larger cells found in bone marrow known as megakaryocytes. The platelets are in the plasma portion of your blood; the yellow liquid that also contains clotting factors. Despite their incredibly small size they contain an array of granules. These granules in turn contain a large variety of molecules, chemicals and proteins, including clotting factors and growth factors. When they are cruising along in the blood under normal circumstances they look like the roundish balls pictured on the preceding page. But, when they get to the site of an injury (a cut, for example) they get larger and grow extensions that reach out. This is their activated state.





Platelets start the healing cascade'

When platelets arrive at the site of injury they activate and release the contents of their granules. The growth factors, ions, chemicals and proteins released begin the clot formation and they trigger the start of healing. This is the "inflammatory phase" and it's the phase that hurts immediately following an injury.

After a few days, the "proliferative phase" begins. The injured area is cleaned up and new tissue begins forming. These processes are also triggered by the contents of the platelet granules.

The final phase is the "remodeling phase". This is when the new bone or cartilage or muscle or skin is formed. The body knows what to form by way of chemical signals given to the stem cells that have arrived on scene to help.

Now you know why doctors use platelets to heal. Because they are what your body uses naturally!

CHAPTER 2:

What is PRP?



PRP is Platelet Rich Plasma. It's concentrated platelets that are derived directly from the patient's blood. It's simple: a tube of blood is drawn from a patient about to undergo injection therapy. This tube is placed in a centrifuge and it is spun around for 10 to 20 minutes until the platelets separate out in a special layer. This layer of platelets is then injected into the patient's injured tendon, or joint. These concentrated platelets make up a supercharged natural healing agent.

CHAPTER :3

How is PRP being used to treat pain?



In this chapter you'll learn what types of injuries and pain are currently being treated by PRP.

How PRP is being used to heal naturally

The most common use of PRP has been for sports injuries such as tendonitis and muscle or tendon tears. You may have heard of Tiger Woods, Kobe Bryant, Hines Ward and other professional athletes undergoing injections with PRP to stimulate healing of injured tissues. But even non-professional athletes and weekend warriors opt for PRP in increasing numbers.

Take my friend Marc , for instance. He's a businessman in his late 30s who wore out his knees with his active lifestyle. His orthopedic surgeon advised him to undergo total knee replacement as the next option. Marc recently underwent PRP injection to his knee and was able to continue with cycling and other activities without the very invasive and extreme surgery of knee joint replacement.

You don't really have to be an athlete at all to benefit from PRP therapy. Conditions such as tendonitis and degenerative arthritis strike us all. Most of these conditions are treatable with PRP. Let's take a look at the more common conditions doctors treat with PRP injections.

Tendonitis

WHAT IT IS

Tendons connect muscles to bone. (Ligaments connect bone to bone.) Tendonitis is an inflamed tendon. While any tendon could theoretically become inflamed, tendonitis tends to occur most commonly at the:

Achilles tendon

Knee

Hip

Shoulder

Wrist

Elbow

WHY IT HAPPENS

Tendonitis occurs most commonly in people over the age of 40, when tendons are beginning to lose their elasticity and tear more easily. Overly repetitive movements or a sudden movement can provoke inflammation in a tendon. Likewise, poor posture or incorrect stretching and warm-up before playing sports or exercising will increase the risk of tendonitis.

Achilles Tendonitis

The Achilles Tendon is one of the strongest tendons in the body. It attaches the calf muscles to the heel and gives us power to push off and get up on our toes. Excessive strain from running and jumping often triggers Achilles Tendon pain. It is usually felt an inch or two above the point where the tendon attaches at the heel.

As we age, the tendon stiffens and the blood supply lessens, making injury more likely and healing more difficult. Current treatment consists of anti-inflammatory medication (NSAIDs), surgery and shockwave therapy. Nonetheless, chronic Achilles Tendon pain is not uncommon.

PRP injections at the Achilles Tendon in patients who had failed to improve with non-surgical therapy has proven to reduce healing time and allow quicker return to activity. It is important to remember that correct physical therapy after the PRP injection helps healing and cannot be neglected for the best outcome.



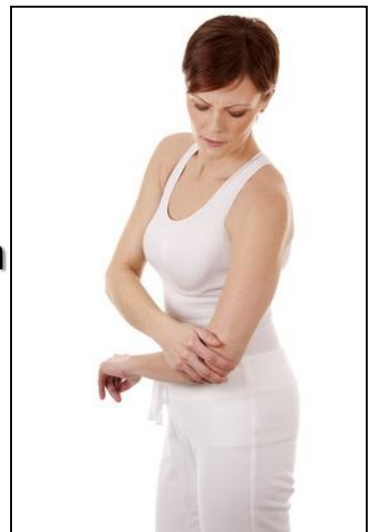
Tennis elbow

Tennis elbow (or, as it is officially called, lateral epicondylitis) is usually not found in tennis players. Nor is it exclusively an inflammation as its name would suggest. It is pain at the outer (radial) surface of the elbow and is probably due to small or large tears in the tendons there. Overuse, direct trauma to the tendons, strenuous arm use or poorly coordinated movements may all contribute to pain there.

Rest, NSAIDS, and injections have all been recommended. Surgery is a last resort. Despite these therapies, relapse and chronic pain is common.

PRP injections have shown excellent results in treating tendon pain, particularly tennis elbow type tendon pain. In fact, a case can be made for making this the first line of therapy, replacing surgery and standard injections.

Note: steroid injections at tendons can damage tendons and are rarely recommended.



OSTEOARTHRITIS

Our joints are lined with cartilage and with age or because of injury, this cartilage thins and our bones begin to rub against each other. Our joints feel stiff when they are inactive and hurt even worse after use. Gradually, the joint movement is restricted. Medications may relieve pain (either oral or creams and gels applied to the outside of the joint.) Steroid or a lubricant injections may give temporary reprieve from pain . Surgery is the last resort. The damaged joint is cut out and replaced with a new metal joint. None of these treatments actually regrows the cartilage or slows down cartilage loss.

A very exciting finding is that in some patients with mild to moderate joint osteoarthritis an injection of PRP may actually restore cartilage and reduce joint pain.



Osteoarthritis pain in the knee, hip, shoulder and other joints may be reduced by PRP injection into the painful joint. Sometimes only one injection is needed before pain relief is felt. Sometimes it takes a series of 2 or 3 injections, administered every 4 to 6 weeks or as the physician deems indicated, before a response is noted. The best results are noticed by patients with mild to moderate (rather than severe) OA. As always, appropriate physical therapy or exercise after the injection stimulates healing and better results.

What Else will PRP treat?

There are so very many possible uses for PRP that it's not practical to talk about all of them. A partial list of PRP uses does include:

- ✓ Sacroiliac joint pain
- ✓ Tears in menisci of the knee
- ✓ Tears in the rotator cuff
- ✓ Plantar fasciitis
- ✓ Symphysis pubis pain
- ✓ Tendon injuries pain
- ✓ Ligament tears and pain
- ✓ Joint laxity
- ✓ Muscle injuries
- ✓ Rib pain at the costo-chondral joints
- ✓ Osteoarthritis of a variety of joints, including facet



CHAPTER 4:

Keep in Mind



Even something as natural as your own platelet concentrate cannot be recommended for injection in everyone. For starters, PRP should not be considered in anyone with cancer or a bleeding disorder. Anyone with a recent fever or an active infection anywhere should not undergo PRP therapy.

Pre-PRP PREP

For 2 weeks pre-PRP, no NSAIDS should be taken by mouth. They may interfere with the healing response that we want.

Post-PRP

You should expect to experience increased pain, swelling and stiffness for up to a week following the injection. Remember the inflammatory phase we talked about in Chapter 1? This is it. It's a good thing although it may not feel good.

It is highly recommended to engage in physical therapy or therapeutic exercise after the treatment . Range of motion exercise, stretching, isometric strengthening and light resistance should start the first week.

Increasing loads can be added after a few weeks. Stretching is necessary to avoid tightening of injected tissues.

Avoiding NSAIDS is currently recommended for another week or two post-PRP but research is underway to determine if oral NSAIDS really do interfere with the healing response.



CHAPTER 5:

What's next for PRP?

BACK PAIN



80% of all adults experience back pain at some point in their life!

The gray hair and wrinkles that we see in the mirror are outward signs of our body aging. On the inside evidence is just as easy to feel. In the spine we call it degenerative disc disease or DDD when it effects the discs that serve as cushions between back bones. In fact, DDD is thought to be the cause or the major contributor of the majority of cases of back pain.

Between each pair of back bones there is a shock absorber called a disc. Actually, the disc is the spongier portion in the center of the shock absorber. It is surrounded by tough fibrous layers. This disc protects our back from impact damage from activities such as jumping, running and lifting. As we age, this disc dries out, loses its sponginess and becomes thinner and firmer. Smoking accelerates this aging. Genetics also plays an important role as DDD seems to run in families.



Current treatment for back pain thought to be due to DDD is exercise, adapting activities and lifestyle, epidural steroid injections or surgery, often spine fusion surgery. None of these approaches actually treats the problem, the aging disc. Wouldn't it be great if we could slow down or even reverse disc aging and degeneration? Perhaps we can, at least in a limited way.

At the University of California there are researchers studying the injection of PRP into degenerated discs of patients with long standing back pain who have not had any pain relief with injections, exercise and medications. Early results are very promising.

Finally, a way to naturally reverse, heal or slow down some of the body's normal aging wear and tear. Relief of pain, restoration of strength and return to an active life!

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