

PLATELET RICH PLASMA (PRP)

Why Is Platelet Rich Plasma (PRP) Used: PRP is currently a hot topic with a lot of public interest in the press and the source of much research. Platelets are 1 of the 3 main cells in blood. Platelets carry packets of growth factors, and the thought is by putting a concentration of your own platelets at an injury site (acute or chronic), that the PRP will help stimulate a healing response. The intent is that it will either speed up the healing time, or make the tissue heal better / stronger.

While PRP has been injected for many musculoskeletal tissues, carefully controlled studies are not available for the majority of musculoskeletal injuries. Injection of PRP into degenerated or partially torn tendons in tennis elbow has been shown to be effective in the majority of patients, however these results may not translate directly to other tendons or conditions. PRP is being used in acute and chronic tendon and muscle injuries, as well as arthritis.

Description PRP is derived from your own blood by taking some blood from your veins. The blood is placed in a special tube, and spinning the blood in a centrifuge to separate the different cells. There are 3 main cell types in blood – the red blood cells (carry the oxygen to the body to work), white blood cells (fight infection), and the platelets. The platelets are sticky cells that stop the bleeding at an injury site by sticking together (forming the clot). As they are the cells on the front line of the injury, it is clever that they carry packets of growth factors to initiate the healing response. By centrifuging your blood, that separates the blood in its components including red blood cells, white blood cells, platelets, and plasma (the non-cellular fluid in blood). The growth factors that are released by the platelets interact with the local cells and send signals that initiate a variety of events such as cell division and migration. The basic idea behind PRP injection is to deliver high concentrations of growth factors to an area of injury, with the hope of stimulating a healing response and reducing inflammation in the tissue. To some extent, injection of whole blood will stimulate the same response, but to a lesser degree.

PRP has been used since about 1987 to help promote healing in dental, orthopedic, and plastic surgery procedures. Over about the past 5 years, PRP has been recognized for its potential in treating both chronic and acute musculoskeletal injuries involving tendons, ligaments, and muscles.

Potential Adverse Effects: Because PRP is derived from your own blood, there is no risk of having an allergy or immune reaction. Overall, the side effects or complications of PRP injection are extremely rare. The main risks include local infection (<1% chance) and pain at the site of injection.

Before the injection

You should stop taking any non-steroidal anti-inflammatory medications 7 days before the procedure.

After the injection

You should ask your doctor how long you should refrain from taking NSAIDs after the injection. NSAIDs work by blocking the action of some of the growth factors present in PRP, thus may render the injection ineffective. You may use acetaminophen (Tylenol) before or after the procedure. Crutches are mainly useful if pain is severe in when standing or walking after lower extremity injections.

You may ice the area for 20 minutes every 2-3 hours for the first 24-48 hours after the procedure. About 1 in 10 patients experience a "flare" reaction beginning the day after the procedure, manifested by intense pain. If this occurs, begin taking the prescribed pain medication. While some redness and swelling are common after the procedure, if any progressive swelling, redness, drainage or fever occurs, notify your doctor. Your doctor will also let you know their protocol for activity after the injection.

© Marc R. Safran, MD 2018