Platelet Rich Plasma Injections (PRP)

What are platelet rich plasma injections?

Platelet Rich Plasma (PRP) Injections is a cutting-edge technique that is closely akin to prolotherapy, but the difference is that the patient’s own blood is used as the source of the solution that is being injected. This technique is well documented for use in dental and orthopedic surgeries because of the facilitation of healing and the reduced risk of infection, and is now showing success with treating chronic pain in:

- Sports injuries
- Degenerative disc disease
- Tennis elbow
- Plantar fascitis
- Achilles tendonitis
- Rotator cuff tears
- Meniscal tears
- Osteoarthritis
- Chronic low back pain
- Discogenic Low Back Pain
- Chronic neck pain

What are platelets?
Platelets are fragments of a much larger cell, the megakaryocyte, which stays in the bone marrow after it differentiates and matures from the stem cell. Stem cells are cells that retain the ability to renew themselves and can differentiate into a diverse range of specialized cell types.

Platelets leave the bone marrow and circulate throughout the body in the plasma. When stimulated by substances from damaged tissue, they:

- Facilitate clotting of the blood after an injury.
- Bring white blood cells to the injured area. The white blood cells then clean up the dead and injured cells.
- Release growth factors that facilitate tissue regeneration.

What is plasma?

Plasma is the “river” in which the blood cells travel. It carries blood cells, nutrients (sugars, amino acids, fats, salts, minerals, etc.), waste products (CO₂, lactic acid, urea, etc.), antibodies, clotting proteins (called clotting factors), chemical messengers such as hormones, and proteins that help maintain the body’s fluid balance.

What are growth factors?

Growth factors are proteins that assist the body in repairing itself by stimulating stem cells to regenerate new tissue. The more growth factors released, the more stem cells stimulated to produce new collagen. Because of this, the body is able to help itself heal. The growth factors include:
Platelet-derived growth factors PGDF
Transforming growth factor beta TGF
Insulin-like growth factor ILGF

What is platelet rich plasma?
Platelet Rich Plasma (PRP) is plasma that is very concentrated with platelets. These platelets have high levels of growth factors that help to:

- Facilitate connective tissue healing, bone regeneration and repair
- Promote development of new blood vessels
- Stimulate wound healing

How does PRP work?
Once the PRP is injected into the affected areas, it triggers inflammation, which then facilitates the healing process to begin. New collagen starts to develop, and then it starts to shrink. As the collagen tightens, it strengthens the ligaments and tendons that were injected. This then helps the areas to become more stable. As a result, pain levels will decrease and mobility will increase.

What is collagen?
Collagen is the main protein of connective tissue and the most abundant protein in our bodies. It is the “glue” that holds the body together, and it makes up about 25% of the total protein content. It is fibrous in nature, and it connects and supports other bodily tissues, such as skin, bone, tendons, muscles, and cartilage.

How does PRP differ from cortisone injections?
Cortisone injections are used to temporarily stop inflammation and provide pain relief. They do not provide long-term
healing, and studies have shown that they may actually weaken the tissue. PRP injections are used to promote healing and strengthening of ligaments and tendons to promote long-term benefits.

**Can I take any medications before or after treatment?**

You are not allowed to use any non-steroid anti-inflammatory medications (NSAIDs) one week prior to the procedure, nor will you be able to use them throughout the course of treatment.

**What can I expect during treatment?**

A small amount of your blood (about 20 cc) is drawn and placed into a special collection kit. The kit is then placed in a special centrifuge for 15 minutes to separate the platelets from the red and white blood cells and the plasma. The red cells go to the bottom of the container, and the white cells and platelets to the middle, leaving the yellowish plasma at the top. About two-thirds of the plasma is then removed and discarded and the remaining plasma is mixed with the platelets to give a concentrated solution which is the platelet rich plasma. The PRP is then drawn into a syringe. A local anesthetic is used on the area to be treated, and then the PRP is injected.

![A small amount of your blood (about 20 cc) is drawn.](image)

Platelets are separated from
red blood cells, white blood cells and plasma in a special centrifuge.

Red blood cells go to the bottom, white blood cells go to the middle, and the yellowish plasma goes to the top.

About two-thirds of the plasma is removed.

The platelet rich plasma (PRP) is then extracted from the bottom of the container.

The PRP is then injected into the area after being treated.
How long does the procedure take?

Then entire procedure generally takes about one hour.

What can I expect after the treatment?

After the treatment, you can expect soreness in the area that was treated for about one to two days, and then some pain relief should begin within the first week, continuing over a period of three months.

How many treatments will I need?

Responses to PRP injections vary, but most patients will require 3-6 sets of injections. The treatments are usually spaced between four and six weeks apart. There are no limits to the number of treatments you can have.

Are there any risks or side effects?

As with any technique that is invasive to the body, there is a slight risk of infection, but this is rare. The technique is safe, because the patient’s own blood is being used for the source of the growth factors and there is no risk of transmission of blood-borne diseases, side effects or allergic reactions from steroids or other injectable medications.

When can I return to regular activity?

PRP injections are stimulating the growth and repair of ligaments and tendons, which requires time. Because of this, the process is slow, so there is no immediate fix. Your physician will determine what activity level is best for you throughout the course of this treatment.
Who should not have this procedure?

Patients with bleeding disorders or hematological diseases do not qualify for this procedure. Check with your physician to determine if PRP is right for you.