

Platelet Rich Plasma (PRP Therapy) Injection for Chronic Achilles Tendinosis in Runners

What to do Before Your PRP Injection

Congratulations on choosing the best way to enhance the natural process by which your body turns on the healing power and repairs its damaged tissues. Before you have the PRP injection, you should understand some basics about how the injection works to help turn on the Achilles repair. Platelet Rich Plasma (PRP) is a biologic substance that can be prepared from your own blood in the operating room, surgery center, or even in your own home during a house call. It is created by concentrating platelets from your whole blood into Platelet Rich Plasma (PRP) via centrifugation.

Platelets, Growth Factors and Achilles Tendon Healing

Platelets are known to release multiple growth factors that directly stimulate soft tissue healing, produce growth factors, lead to destruction of bacteria and foreign material and the digestive removal of damaged tissue in the wound. Growth factors specifically involved in the function of PRP are described below:

- **Platelet Derived Growth Factors** (PDGF), plays a tendon tissue healing, by increasing mitogenesis (healing cells), angiogenesis (creating new blood capillaries), and macrophage activation ("cleaning" up damaged collagen Achilles fibers in the tendon).
- **Epidermal Growth Factors** (EGF) induces skin cell development and new blood flow.
- **Vascular Endothelial Growth Factors** (VEGF) are potent stimulators of angiogenesis and mitogenesis. They also increase the permeability of endothelial cells, which aids in healing tendon by circulating blood cells. The Achilles tendonitis area usually has poor blood flow.
- **Transforming Growth Factor Beta** (TGF- β) plays an important role in the regulation of the cell cycle by affecting cellular growth through cell-signaling pathways. It is also believed to be important in regulating the immune system.

After the platelets have been separated and concentrated into PRP they will remain stable for a number of hours. However, Dr. Segler will inject the PRP into your Achilles tendon, right into the area of Achilles tendinosis, within a few minutes of preparing the PRP Achilles injection. This is the best way to ensure that you will get the full healing inducing effects of the Platelet Rich Plasma.

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"THE BEST ACHILLES TREATMENT FOR RUNNERS IS ACTIVE TREATMENT"

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Because the main component of the PRP Achilles Injection is platelets, you should not take some medications in the days and weeks leading up to your PRP injection. **Do not take any NSAID's (such as Motrin, Aleve, Ibuprofen, Naproxen, Aspirin, Celebrex) for one week prior to the injection.** You should also not take corticosteroids (such as prednisone) for a month prior to the injection. If you have been taking NSAID's or steroids, they can decrease the effectiveness of the PRP injection. Make sure to tell Dr. Segler if you have been using these medications.

The day of the injection, Dr. Segler will come to your home or office in a house call. He will also have a PRP equipment specialist with him who will run the centrifuge equipment during the procedure. He will draw some blood from your arm that will be used for the Achilles PRP injection. Once the blood draw has been loaded in the centrifuge, Dr. Segler will make your Achilles Tendon area numb with local anesthetic. He will also prep the skin over the Achilles tendon with surgical skin prep solution. As soon as the blood has PRP concentrate is ready, Dr. Segler will inject the injured and damaged portion of the Achilles Tendon with the PRP concentrate. A surgical bandage will be applied over the area and a fracture walking boot will be fitted to the leg to immobilize the Achilles tendon. It is best to keep the Achilles tendon still in the first couple of days to prevent the platelets from getting pushed or squeezed out of the injured area. At that point, all you will need to do is rest and relax, taking it easy as the healing begins over the next couple of days.

Recovery Phase I: Strict Immobilization. For the first 48 hours you will keep the fracture walking boot on at ALL times. This will keep the tendon from moving and help all of the growth factors contained within the PRP injection to stay within the Achilles tendon and paratenon that covers the tendon. You should also elevate the leg above your heart during this period to decrease swelling. If you have any pain take the pain medicine Dr. Segler prescribed for you. Rest, relax and heal.

Phase II: Early Range of motion. Beginning 48 hours after your PRP injection, you will start gentle passive range of motion exercises 3-5 times per day. You can also begin walking at home without the boot as tolerated.

Phase III: Early Weight-bearing. It will take about 1-2 weeks to walk without wearing a boot to protect the Achilles tendon. Once you can walk comfortably (with no pain in the Achilles) you can start the next phase of recovery.

Phase IV: Functional Rehabilitation. From 2-8 weeks after your PRP injection, will be a time of intensely focused efforts to regain Achilles tendon mobility and Achilles tendon strength. You can do as much stationary cycling as you want, but *no running*. Use might also use the boot for long walks and any strenuous activity.