

Regenerative Therapy at Foot & Ankle Orthopaedic Surgery

Platelet Rich Plasma (Continued)

After a blood sample is obtained from a patient, the blood is put into a centrifuge, which is a tool that separates the blood into its many components. Platelet rich plasma can then be collected and treated before it is delivered to an injured area of bone or soft tissue, such as a tendon or ligament.

PRP is given to patients through an injection, and ultrasound guidance can assist in the precise placement of PRP. After the injection, a patient must avoid exercise for a short period of time before beginning a rehabilitation exercise program.

Lipogems

Lipogems is an innovative and next generation regenerative cell technology that is used to harvest, concentrate, and transfer a patient's own fat for the repair, reconstruction, or replacement of injured or damaged tissue.

Mesenchymal (MSC) stem cell injections are being used to accelerate healing, and decrease pain in moderate to severe osteoarthritis and for acute injuries. The theoretical benefit of MSC over PRP is that you are getting a much higher concentration of growth factors and more anti-inflammatory potential.

The process of obtaining these powerful regenerative cells is similar to PRP which also requires 2 steps:

- **Part one** requires your doctor to aspirate your bone marrow or to perform a mini liposuction procedure to get fat. Both can be done as an office procedure under local anesthesia.
- **Part two** involves concentrating the cells using special centrifuge equipment and then injecting the acquired MSC into the desired area. In order to optimize the healing and pain reduction potential, MSC can be combined with PRP.

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Platelet Rich Plasma (PRP)



PRP (platelet rich therapy) treatment is becoming a more popular option for giving a biological boost to the healing process. PRP treatment has received significant attention from the media and has been used by numerous professional athletes.



What is PRP? PRP is produced from a person's own blood. It is a concentration of one type of cell, known as platelets, which circulate through the blood and are critical for blood clotting. Platelets and the liquid plasma portion of the blood contain many factors that are essential for the cell recruitment, multiplication and specialization that are required for healing.

What We Do



Shockwaves are essentially sound waves with a very specific wave form. Unlike radial pressure wave therapy, shockwave therapy penetrates deep into the tissue and thus to the site of injury. The biologic signaling effect of shockwaves is much higher than both radial pressure waves and ultrasound and is therefore clinically much more effective.

Extracorporeal Shockwave Therapy

MECHANISM OF ACTION Shockwaves elicit a strong cellular response. The images below illustrate the activation of mitochondria (the cell's power source) in nerve cells before and after ESWT. The sudden change in pressure caused by the shockwaves triggers the cell to respond as it would to trauma. In other words: shockwaves initiate a biologic healing response. Numerous studies show the release of growth factors, anti-inflammatory agents and an improved blood supply in response to ESWT.

INDICATIONS • Chronic heel pain (plantar fasciitis) • Tendon and ligament injuries • Muscle pain

PROCEDURE: The procedure takes only 5-10 minutes. Much like an ultrasound procedure, the treatment area will be covered with gel to ensure good shockwave transmission. After coupling the therapy head to your body (see pictures) your therapist will deliver a specific number of pulses. The energy can be applied at your personal comfort level.

SUCCESS RATES: More than 80% of patients report improvement even after just one treatment. Depending on your particular condition you will likely be scheduled for 3-5 sessions. The final outcome depends on

Arthroscopic and minimally invasive techniques have replaced open incisions for many surgical procedures and have led to less invasive procedures with faster recovery. OrthoBiologic therapy- including lasers, extracorporeal shock wave therapy, Platelet rich plasma, as well as harvested bone marrow and fat stem cells are emerging as therapies because of their ability to augment the healing of tendons and bones.

Foot and Ankle Orthopedics have been at the forefront of offering biologic therapy to our patients to allow a faster recovery from injuries as well as possibly avoiding surgery.

These treatments have all been well studied and have shown great potential as an alternative to surgery. These techniques attempt to augment the natural healing process to heal or even “grow back” the damaged tissue.

There are two main problems with stem cells:

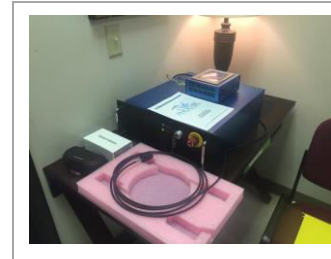
1. **Hype:** There are now many stem cell centers promising miracle cures for a variety of orthopaedic conditions with no clinical or scientific studies to back up their claims and thus it is difficult for the you the patient to make an informed decision on these treatments.
2. **Cost:** most biologic therapies are not covered by insurance companies. For example, there is a CPT code for ESWT (shockwave) therapy for plantar fasciitis and randomized, double blind studies support its use but insurance will in most cases not cover this procedure but would cover an operation for plantar fasciitis (which is what we are trying to avoid).

You should discuss the price with our office staff before undergoing any biologic therapy as we strive for this to be a completely transparent process.

In general, the cost of Phoenix TheraLase is \$250 per session, Shockwave is \$600 per session, PRP is \$800. Bone marrow stem cells and adipose derived stem cells are performed in the operating room and billed as surgical procedures cost to the patient will vary depending on insurance coverage.

Our Services

Phoenix Thera-Lase Class IV Laser



Key: Photon energy particles emitted from laser are absorbed by photoreceptors in the cell, which allows for DNA restructuring, ATP production, change in the mitochondria and allows for oxygenation, blood flow.

The Phoenix Thera-Lase System precipitates a complex set of physiological interactions at the cellular level, which reduces acute inflammation, reduces pain and accelerates tissue healing.

If you can penetrate deep into the body using natural light energy, the body increases the ability to heal itself 3-4X as fast.

Unique Properties of the Laser:

- Deeper Penetration
- Higher Power
- Wider Beam Diameter

