

Dr. Kimball's Regenerative Medicine Stem Cell/Platelet Rich Plasma Therapy Protocol

Dr. Kimball brings together the science of Stem Cell Therapy, Injectable growth factors, Applied focused nutrition and Orthopedic Surgery to augment recovery, reduce pain and improve function in a variety of Orthopedic conditions.

A life time of experience treating high demand athletes and applying “state of the art” technology has enabled him to offer an all-inclusive, comprehensive and often non-surgical approach to cartilage injuries, arthritic joints, tendonitis, bursitis, rotator cuff tears, shoulder and hip labral tears, as well as muscle and tendon injuries.

Four Step Stem Cell Process:

1. **Stem Cell / PRP (Platelet Rich Plasma) injection:** This is an in-office procedure where you will be injected with two different substances.
 - a. **Stem Cell Injection:** These cells and associated growth factors are derived from Bone Marrow aspirate. This product is safe, FDA approved and is prepared in the office environment. It is derived from your own bone marrow. The technique of obtaining and preparing your bone marrow is described later in this discussion.
 - b. **PRP Injection:** (Platelet Rich Plasma) 30-60 cc of your own blood will be drawn from a vein in your arm. In an approximate 20 minute sterile process, the blood is separated in a centrifuge to isolate the Platelet Rich Plasma. Growth stimulating proteins obtained from PRP are mixed with the stem cells and in a single step are injected into the affected joint, tendon or muscle.
2. **Post injection:**
 - a. During your first week, post injection, take **care to avoid over-the-counter anti-inflammatory medication**. Ibuprofen, Aleve and other NSAID's are effective in pain relief however they **suppress important aspects of the healing process** and are best avoided during this time interval close to your Stem Cell/PRP injection.

3. Long Term Nutrition and Natural Anti-inflammatory support:

a. **Forte Joint and Amino Acid Product** is started 1 week after your injection. The joint product is to be taken twice daily and the amino acid taken once per day. This provides ongoing aggressive yet focused nutritional support for your joints plus natural anti-inflammatory agents to reduce pain and improve your outcome long term.

4. **Forte Products** are obtained at ForteElements.com. You will need Forte Joint and Amino Acid supplement. Enter code UT8406 upon checkout to obtain a discount on your purchase.

Cost:

The process is expensive and is considered “experimental” by insurance companies in the US. It is therefore not covered by health insurance although you can legitimately use HSA (Health Savings Account) or FSA (Flexible Spending Account) dollars to pay for it. The fact that these are FDA approved procedures does not mean that insurance companies are obliged to pay for them. You may also use your HSA or FSA account to purchase the Forte Elements supplements.

What is included:

1. Injection of Stem Cells/Growth factors derived from Homologous Bone Marrow Aspirate.
2. Preparation of and injection of Platelet Rich Plasma (derived from your own blood)
3. Injection of the combined Stem Cell/PRP product into the affected joint, tendon or soft tissue.

Total Price Stem Cell plus PRP: \$5,000.00

Payment is due one week before date of service.

Please call Sharise Smith to schedule an appointment @801.885.1490

Stem Cell Information

WHAT ARE STEM CELLS?

Stem Cells are cells that can replicate themselves and differentiate into various tissue forming cells. There are two types: Embryonic and Adult Stem Cells. All stem cells currently in your body are considered Adult Stem Cells. We use your own Adult Stem Cells from your body during your procedure. Our process of harvesting and concentrating these regenerative cells is performed during your procedure and only takes 15 minutes.

WHERE DO THE CELLS COME FROM?

You have adult stem cells throughout your body. They orchestrate the formation of tissue such as bone, cartilage, fat, muscle, heart, blood vessels, and nerves. They are the reason why we can heal ourselves. The richest source for these cells are in bone marrow and fat. Since this is the body's natural way of healing, why not harness that potential for use?

WHY DO WE USE BONE MARROW?

Adult stem cells have been shown to transform into site-specific tissue. Cells that are found in your bone marrow hold the regenerative capacity to form bone and soft tissue. As we age, some of these regenerative cells decrease in number, so using a concentrated form of marrow is imperative for maintaining a youthful healing power. Bone marrow also contains platelets, which store signaling molecules that stem cells need in order to heal. We use a device which separates and concentrates these regenerative components from other components of your bone marrow.

HARNESSING YOUR FULL HEALING POTENTIAL REQUIRES REGENERATIVE CELLS.

HOW DOES THE PROCEDURE WORK? WILL I FEEL PAIN?

Your surgeon will use a small needle to harvest bone marrow from your iliac crest (hip). The regenerative components within your aspirated bone marrow are then concentrated and injected back into specific site(s) on your body, depending on your needs. Because these cells can regenerate new tissue, we promote your body's natural ability to heal itself through concentration and delivery. After the procedure, you may feel mild discomfort at the aspiration and/or injection site(s) depending on the procedure. Please consult with your physician for post-op treatment directions.

Components of Bone Marrow:

Mesenchymal Stem Cells:	Transform into tissue forming cells
Hematopoietic Stem Cells:	Form blood cells immune cells and transform directly into tissue forming cells
Endothelial Stem Cells:	Stimulate the formation of new blood vessels and creates vascularization
Platelets	Store signaling molecules which help direct stem cell function

The Harvesting and Concentration Process:

1. Harvesting Bone Marrow Your physician aspirates bone marrow from your iliac crest (hip) with a small needle. The marrow is then filtered to remove any impurities.

2. Concentrating Bone Marrow A highly trained clinician separates the regenerative components using an innovative process. The result is a highly concentrated solution of autologous cells which help stimulate tissue growth.

3. Preparation Your surgeon designs a graft that is specific to your needs. Since each patient is unique, we believe that each graft should be as well.

4. Delivery The concentrated bone marrow is injected into specific sites on the same day to promote tissue regeneration where needed.

Recovery Exercise Protocol

Exercise is appropriate following stem cell injection. The following are appropriate activities following knee joint stem cell injection:

Week 1:

Gentle range of motion exercises.

Apply ice packs for up to 20 minutes every few hours if swollen

Walking is fine however extended walking should be deferred.

Week 2: More aggressive range of motion exercises is appropriate.

Stationary bike with minimal resistance. 30 minutes twice per day

Elliptical machine (simulated walking without impact of weight bearing)

Pool therapy if available.

Week 3-6:

Stationary bike 30 minutes 2-3 times per day. Progressively add resistance as tolerated.

Pool therapy 3 hours per week if available

Elliptical machine (if available) 3 times per week. (20-30 minutes per session)

After week 6:

Progressive exercise as tolerated minimizing high impact such as running, jumping, high impact "step aerobics".