

Regenerative Medicine Procedure Guidelines

Tarpon Interventional Pain and Spine specialists will utilize Platelet Rich Plasma (PRP) or Bone Marrow Aspirate (BMA) to facilitate healing in joints and soft tissues as an option to potentially relieve pain, improve function, and avert or delay surgical treatment. PRP and BMA have been shown to drastically increase the joint and tendon's ability to heal after degeneration and/or injury. Because PRP and BMA use your own blood/bone marrow, the risk of infection is very minimal. Plus, the regenerative properties of the platelets are targeted directly at the injury site, helping to speed up the recovery process by addressing the injury directly.

The PRP Process

Platelet-rich plasma involves taking a small sample of blood and spinning it in a centrifuge to concentrate and separate the platelets and plasma from the other components of your blood. This concentrated solution is then injected into the body at the injury site. This process will take place during pre-op before your procedure.

The BMA Process

While you are sedated in the operating room, fluoroscopic guidance is used to identify the optimal location to obtain your bone marrow under sterile conditions. Local anesthetic is administered at the site of the bone marrow aspiration to ensure pain control post procedure, and then the Jamshidi needle is placed into your bone marrow. Aspiration of bone marrow is then performed and approximately 60 cc of bone marrow is obtained. The syringe is then processed by a vendor representative to isolate the cells (mesenchymal) that have the potential to heal joint tissue, tendons, intervertebral disc, and meniscus. Once processed your physician will inject the cells into the exact areas that need regeneration/healing.

But WHY does Regenerative Medicine work?

Platelets are the part of your blood that contains growth factors and proteins. BMA contains these in even greater concentrations as well as living stem cells. These are very important in the repair and regeneration of damaged tissue. Regenerative therapy works by accelerating the body's own healing process. They address the injury site by encouraging the growth of new, healthy cells and repair tissues.

Pre- Procedure Instructions:

- **14 days before your procedure, discontinue anti-inflammatory medications, any blood thinning herbs, supplements or vitamins, and systematic steroids/injections.** *Aspirin is case by case depending on the risk factors each patient has regarding being off daily aspirin.
- No eating or drinking (except a sip of water to take necessary medication) 8 hours prior to the procedure if you are receiving anesthesia

*Please be advised that if you take a chronic oral steroid, a discontinuation plan will need to be discussed with your primary care provider as abrupt stoppage may cause side effects.

Post-Procedure Instructions:

After your regenerative medicine treatment, we recommend that all patients rest on the day of their procedure. For the next 2 days, we advise limited use of the injection area, but slow gentle range of motion movement is encouraged. This helps the joint recover as the injection is absorbed by the areas surrounding tissues.

0-3 days post-procedure:

After your treatment, you will experience some mild to moderate pain or discomfort at the injection site. This is normal, and it is a sign that your body is healing as it adjusts to the injection. It is best to stay hydrated and drink plenty of water to help promote healing. Other important guidelines to follow are:

- Avoid applying ice or heat to the injection site for the first 72 hours post-procedure
- Do not take a hot bath or go to a sauna for the first few days' post-procedure
- Avoid showering for the first 24 hours post-procedure
- Avoid consumption of any alcoholic beverages, excessive caffeine and smoking post-procedure
- Limit simple carbohydrates such as cake and ice cream for three months if possible.

***You must stay off of the medications you discontinued two weeks prior to the procedure until at least the 3 month post procedure follow up.** It is common that we recommend that you stay off these through the 6 month post procedure follow up. *The medications include but are not limited to anti-inflammatories, blood-thinning herbs, supplements or vitamins, and systematic steroids.*

3-14 days post-procedure:

At this point in your healing, you should gradually increase your daily activities. This is also when you can begin light exercises. Proper exercise is a vital part of long-term results, and we can help you determine which light exercises are best suited for your needs prior to your procedure. We will send you to physical therapy 1 month post procedure. Other guidelines to follow are:

- Ice can be applied 3-4 times a day for 15-20 mins as needed for comfort
- Continue to avoid alcoholic beverages, smoking, or excessive caffeine
- Contact your physician if you are in extreme discomfort and to discuss the possibility of receiving any type of NSAID or pain medications

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1 month post-procedure (1st in office follow up visit):

At this time you will need to follow up with our physician to review your healing process. It is important to keep this follow-up visit even if your recovery is going well. If there are any adjustments to your customized treatment plan, this is when our physician will be able to make those decisions. We will also have you begin physical therapy at this time to aid in your long-term healing and continued recovery.

The goals of physical therapy are to regain full range of motion of the affected joint/spinal region without causing significant pain. This will be followed by gentle, light isometric resistance/loads on the

injured tissues to stimulate tissue healing, taking care not to damage the delicate early tissue construction that is taking place (avoid repeated range of motion, heavy loading maneuvers, ballistic movements). At the doctor's discretion, more aggressive strengthening through the range of motion may be considered, but almost never before 4-5 months post injection. The length of time for continuing physical therapy will be re-evaluated at each post procedure office visit with your physician at 2, 4, and 6 months post injection.

Can this Physical Therapy be done at home?

If the Physical Therapist confirms that the patient has mastered his home exercise program and understands the principles, the patient can be released to do these exercises at home unsupervised. Outcomes have been shown to be superior if the initial 3-4 weeks of Physical Therapy are done under the supervision of the Physical Therapist, with modalities, and then followed by home exercises.

Expected time frame of recovery

The first thing that happens after the injection is the cells release their stores of growth factors, which causes a profound inflammation and stimulation of cells to increase blood flow and swelling in the area, and to begin manufacturing collagen to strengthen the weakened tissues. As mentioned in the post procedure section this phase could last anywhere from 2-4 weeks post injection. This is associated with a flare of pain and swelling in the injection site, and it is important to not use steroids or NSAIDS to address the pain as these will interrupt the healing process. If pain medication is needed use Tylenol if approved by your physician or pain medication prescribed by your physician as directed until 6 months post procedure. Beyond the initial inflammatory phase and soreness, the healing/regenerative process is continuous for up to 6 months from a single injection.

It is difficult to anticipate a specific timeline for relief as it is different for each patient and each injection. It depends on many individual factors, anywhere from no relief to complete relief for the rest of your life. For patients that respond well to the procedure usually see a little improvement at the 2 month mark, a little more by the end of 3 months, and progressive improvement to the point of maximal improvement at 6 months.

Do I have to do another procedure after the first one?

Only if you and your physician agree there is further pain relief needed and it is likely to provide the relief you need

***In office follow up appointments should be scheduled at 1 month, 2 months, 4 months, and 6 months post injection.**

The road to recovery is just as important to us as it is to you! Therefore, if you have any questions along the way, it would be our pleasure to discuss them with you. We look forward to working with you on your journey to improved health.

NSAIDS (ANTI-INFLAMMATORY) LIST:

Celecoxib (Celebrex)
Diclofenac (Cataflam, Voltaren, Arthrotec)
Diflunisal (Dolobid)
Etodolac (Lodine, Lodine XL)
Fenoprofen (Nalfon, Nalfon 200)
Flurbiprofen (Ansaid)
Ibuprofen (Motrin, Tab-Profen, Vicoprofen, Combunox)
Indomethacin (Indocin, Indocin SR, Indo-Lemmon, Indomethagan)
Ketoprofen (Oruvall)
Ketorolac (Toradol)
Mefenamin Acid (Ponstel)
Meloxicam (Mobic)
Nabumetone (Relafen)
Naproxen (Naprosyn, Anaprox, Anaprox DS, EC-Naproxyn, Naprelan, Naprapac)
Oxaprozin (Daypro)
Piroxicam (Feldene)
Sulidac (Clinoril)
Tolmetin (Tolectin, Tolectin DS, Tolectin 600)

BLOOD THINNER LIST

Arixtra (Fondaparinux)
Adexxa
Asprin
Brilinta (Ticagrelor)
Coumadin (Warafin)
Effient (Prasugrel)
Eliquis (Apixaban)
Fragmin (Dalteparin)
Jantovan (Warfarin)
Plavix (Clopidogrel)
Pradaxa (Dabigatran)
Savaysa (Edoxaban)
Xarelto (Rivaroxaban)