

Alpha-2-Macroglobin (A2M)

Alpha-2-Macroglobin (A2M) is a plasma protein that naturally occurs in our blood that helps protect cartilage from degradation. A2M helps slow down the progression of osteoarthritis (OA) by slowing down cartilage loss. It acts as a biological “shield” to inhibit destructive enzymes that break down cartilage and provides growth factors to stimulate healing. This therapy aims to reduce pain, inflammation, and degeneration in conditions like osteoarthritis and other musculoskeletal injuries.





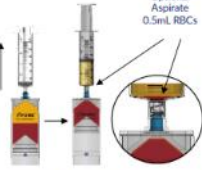








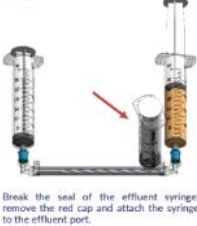




The treatment uses your own blood components, making it a biocompatible therapy with minimal side effects. It can help delay or avoid the need for surgery. Patients will need to arrive 15 minutes before appointment to sign their consent and fill out a questionnaire if not already done so. The whole procedure takes about an hour and a half to two hours in the clinic. The results are typically evident within 6 weeks.

Product: Emcyte A2M

- Mainly used for mild to moderate Osteoarthritis
- Blood draw:
 - 120cc of blood is drawn (total of 3 60cc syringes)
 - 7cc of Anticoagulant (ACD-A) is in each syringe to help prevent your blood from clotting.
- Spin time: 10 minutes
- Concentration time in the Filter: 30-45 min
- Total Time: 1.5-2 hours

Alpha-2-Macroglobin (A2M) PRP

- What is A2M?
 - A2M is a protease inhibitor that is naturally produced by your body. It acts as a defense mechanism for enzymes that degrade the cartilage in arthritic knees. While this protein is in our blood naturally, the molecule itself is too large to enter the joint space in therapeutic quantities. Thus, by concentrating and injecting directly into the joint, the molecule is able to stay in the joint space. This allows the A2M to stop the progression of OA by preventing cartilage loss.
- How does the patient know if he/she is a good candidate?
 - Early to moderate osteoarthritis of the knee joint and spine
 - Recurrent knee joint effusions (swelling)
 - Persistent knee or back pain
- Where and how long is the procedure performed?
 - The procedure is performed in clinic or in conjunction with surgery and takes about an hour and a half to two hours.
- What is the procedure?
 - First, a phlebotomy technician will draw your blood, and then the blood is spun down in a centrifuge to separate the platelets from your red and white blood cells. After that, the platelet plasma is transferred to a filter to isolate the A2M from the plasma. It will then be ready to inject into your site of injury.
- Are there any side effects from PRP?
 - Very low risk factor for infection
 - May have some increased pain, stiffness, and swelling after the procedure.
- Is there anything the patient needs to do to prepare for the procedure?
 - Discontinue all NSAIDs and supplements 7 days before procedure.
 - Make sure the patient begins to hydrate 24-72 hours before the procedure to ease the blood draw.
- What is the down time after the procedure?
 - Patients may feel increased pain, soreness, or stiffness for 24-72 hours post injection.
 - The patient can take Tylenol and ice the site if there is any discomfort after the procedure.
 - Can resume NSAIDS 2 weeks post injection.
- When will the patient start to feel better from the injection?
 - Could take up to 6 weeks to feel the effects

<p>Step 1:</p>  <p>Using the filtered needle, draw up 6mL of Sodium Citrate Anticoagulant into each 60mL syringe.</p>	<p>Step 2:</p>  <p>Using the butterfly needle draw 100mL whole blood, filling each syringe to 60mL (54mL whole blood per syringe).</p>	<p>Step 3:</p>  <p>Load anticoagulated whole blood into each Separator Device.</p>
<p>Step 4:</p>  <p>Make sure each device has equal volume and place at opposite ends in the centrifuge rotor.</p> <p>Sapphire Series Centrifuge: Set to PUREPRP 60 SPIN 1</p> <p>Platinum Series Centrifuge: Set to PUREPRP SP SPIN 1</p> <p>Executive Series Centrifuge: Set to 2 minutes and 4400</p>	<p>Step 5: For each Separator Device:</p>  <p>Optional Aspirate: 0.5mL RBCs</p> <p>Connect the 60mL syringe to the top port and aspirate the platelet plasma suspension (PPS).</p>	<p>Step 6:</p>  <p>IMPORTANT!! PLACE CLEAR CAP ON BOTTOM PORT</p> <p>Transfer all of the platelet plasma suspension (PPS) collected from both Separator Devices into the single Concentrator Device.</p> <p>PLACE CLEAR CAP ON BOTTOM PORT PRIOR TO CENTRIFUGATION.</p>
<p>Step 7:</p>  <p>Make sure each device has equal volume and place at opposite ends in the centrifuge rotor.</p> <p>Sapphire Series Centrifuge: Set to PUREPRP 60 SPIN 2</p> <p>Platinum Series Centrifuge: Set to PUREPRP SP SPIN 2</p> <p>Executive Series Centrifuge: Set to 5 minutes and 4400</p>	<p>Step 8:</p>  <p>Platelet Concentrate Buffycoat</p> <p>After centrifugation: Platelet concentrate buffycoat separates out at the bottom of the Concentrator Device.</p>	<p>Step 9:</p>  <p>Aspirate all the PPP leaving just the buffycoat in the tube.</p> <p>Aspirate platelet poor plasma (PPP) from the Concentrating Accessory leaving just the platelet concentrate buffycoat in the tube.</p>
<p>Step 10:</p>  <p>Remove the red cap on the near side of the effluent port and attach the collected plasma syringe.</p>	<p>Step 11:</p>  <p>Remove the red cap on the near side of the effluent port and attach the collected PPP syringe.</p>	<p>Step 12:</p>  <p>Inject plasma through the device until it reaches the filter.</p>
<p>Step 13:</p>  <p>Remove the filter and attach the transfer syringe.</p>	<p>Step 14:</p>  <p>Break the seal of the effluent syringe, remove the red cap and attach the syringe to the effluent port.</p>	<p>Step 15:</p>  <p>Begin the ultrafiltration process by injecting the plasma back and forth through the syringes until the plasma retentate reaches approximately 8mL or the desired amount.</p>
<p>Step 16:</p>  <p>Protein Rich Plasma 8mL or desired amount.</p>	<p>Step 17:</p>  <p>Inject the Protein Rich Plasma into the Concentrator with platelet buffycoat. Then resuspend the platelet buffycoat into the Protein Rich Plasma.</p>	<p>Step 18:</p>  <p>8mL Platelet Concentrate A2M Concentrate Fibrinogen Concentrate or desired volume</p> <p>Tilt to immerse the Aspirating Pipe into the A2M rich PurePRP® TWO. Extract 8mL or desired volume into the 12mL syringe.</p>

A2M PRP Instructions

Pre-Procedure

- Discontinue all NSAIDS, this includes supplements (Advil, ibuprofen, Aleve, Naprosyn, aspirin) at least **7 days** prior to procedure.
- Increase fluid intake 48-72 hours prior to scheduled procedure.
- Dietary restrictions are NOT necessary before or after procedure. **You must eat breakfast and lunch before your procedure.**
- It is medically recommended that you arrange for a driver if you are undergoing a right lower extremity injection or bilateral upper extremity injections.
- Take 1,000mg of Tylenol, if tolerated, 1 hour prior to the procedure.
- Arrive 15 minutes prior to the procedure in order to sign the consent form.

Post-Procedure

- It is not unusual to have pain following an injection of PRP for 24-72 hours.
 - Tylenol you make take 1000mg (do not exceed 3,000mg daily) will help minimize the discomfort.
- You may resume use of NSAIDS and Supplements **2 weeks** following the procedure, unless your physician specifies otherwise.
- Physical therapy can be beneficial treatment following administration of PRP. Inquire with your physician if physical therapy is appropriate for your diagnosis and treatment plan.
- Strenuous physical activity should be avoided for **2 weeks** following the procedure. You may participate in everyday activities, such as normal everyday walking, grocery shopping, etc.
 - Avoid any activity that will increase your heart rate or involve weights for 2 weeks.
- On average, most patients report relief from PRP therapy 4-6 weeks from the time of injection.
 - Remember, we are looking for long-term results rather than short-term results!
- Make a follow-up appointment with your physician 6-8 weeks following the procedure.

Please contact our office at 404-355-0743 ext. 1332 if you are concerned with increasing redness, swelling, fever, and/or pain.

A2M Contraindications

- Anti-inflammatories – stop taking **7 days before and 2 weeks after**
 - Aspirin
 - Motrin
 - Advil/ Ibuprofen
 - Aleve
 - Naprosyn
 - Naproxen
 - Diclofenac (ex: Voltaren gel)
 - Meloxicam/ Mobic
 - Celebrex
 - Daypro
 - Feldene
 - Lodine (Etodolac)
 - Orudis
 - Indomethacin (Tivorbex)
 - Natural remedies (ex: turmeric, Boswellia extract, fish oil)
- Blood Thinners/ Anticoagulant: Discuss with your prescribing physician when to discontinue the following:
 - Xarelto
 - Warfarin
 - Eliquis
 - Pradaxa
 - Heparin
- Oral Steroid: need to be off Steroids **7 days before and 2 weeks after** procedure
- No restrictions on Semaglutides/GLP1
- Wait at least one month after Cortisone (steroid) Injection!
- No restrictions on antibiotics, but preferably not on antibiotics during the procedure.
- History of Metastatic Conditions like cancer or disease. Discuss with your physician and please get clearance from Oncologist.
- History of severe liver disease
- Septic arthritis
- History of Autoimmune disease. Discuss with your physician and discuss with Rheumatologist.
 - Certain medications prescribed for autoimmune conditions may reduce the effectiveness of A2M treatment.

Please contact our office at 404-355-0743 ext. 1332 if you have any questions.

Post-A2M Injection Instructions

- It is normal to experience increased pain or soreness after the injection; this typically resolves within a few days.
- Do not use any prescription or over the counter anti-inflammatory medicines (NSAIDS) for **2 weeks after injection** such as: Aspirin, Motrin, Advil, Ibuprofen, Aleve, Naprosyn, Naproxen, Voltaren, Diclofenac, Meloxicam, Mobic, Celebrex, Daypro, Feldene, Lodine, Orudis and Ansaïd. This includes supplements such as: Omega-3, Ginger, Turmeric, Spirulina, Vitamin A, Bromelain, and Capsaicin.
- You may use Tylenol (Acetaminophen) as needed for discomfort. 1,000mg every 8 hours as needed for pain. Do NOT exceed 3,000mg daily. If Tylenol does not help with the pain, please call your physician as they may be able to prescribe you different medications.
- Call the physician if you develop drainage from the injection site, bleeding, redness, or fever. You may experience some localized swelling and bruising at the injection site that will take 3-7 days to resolve.
- On average, most patients report relief from PRP 4-6 weeks from the time of the injection. Remember, we are looking for long-term results rather than short-term results! Please do not hesitate to call or contact us should you have any questions or concerns throughout your recovery.
- Continuing everyday activities (such as gentle range of motion, normal walking, grocery shopping, walking your dog slowly/short distances) is okay. Avoid any activity that will increase your heart rate.
 - **Strenuous physical activity (anything that increases your heart rate) should be avoided for 2 weeks following the procedure.**
 - ☐ For upper extremity procedures do not do any repetitive motion, pulling, tugging, grasping or gripping with the upper extremity for at least 2 weeks or instructed by your physician.
 - ☐ For lower extremity procedures (injections into the hip, thigh, knee, ankle, and foot) high intensity or weighted exercising should be avoided for 2 weeks after injection.
- Slowly ease back into activity as tolerated after 2 weeks. Physical therapy can be beneficial in this process. We are happy to provide a referral for PT, to commence 2

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weeks after the procedure. Ask your physician if PT would be beneficial for you and they can provide you with a referral.

- No restrictions on showering/bathing after the injection.
- Please discuss with your physician when to discontinue braces, slings, or crutches if given. Gentle range of motion is recommended, as we do not want your joint to become stiff. Ideally, discontinue after 2-4 days, but your physician will provide you with this information.
- Make a follow-up appointment with your physician 6-8 weeks following the procedure.
- Please contact our office at 404-355-0743 ext. 1332 if you have any questions.