

SHOULDER ULTRASOUND GUIDED PRP INJECTION CLINICAL PRACTICE GUIDELINE

Background

Platelet Rich Plasma (PRP) is an injection of your own blood that has been spun down to increase the concentration of platelets. This concentrated blood has an increase in growth factors, proteins, cytokines and other bioactive molecules that initiate and regulate the basic aspects of wound healing. The goal is to induce an inflammatory process into the diseased tendon to promote proper and long term healing.

Although post-procedure care will be tailored to fit your individual needs, the following guidelines are designed to help you and your physical therapist after the procedure. Your physician may also amend or adjust these treatments as they deem necessary.

Disclaimer

Progression is time and criterion-based, dependent on soft tissue healing, patient demographics and clinician evaluation. Contact Ohio State Sports Medicine at 614-293-2385 if questions arise.

Things to Avoid Before and After Your Procedure

Over-the-counter pain medicine	<ul style="list-style-type: none">• Ibuprofen (Advil™, Motrin™), naproxen (Aleve™, Naprosyn™) can impair your ability to heal and may increase risk of bleeding. Make every effort to avoid these medications for two weeks before and one week after your procedure.• Acetaminophen (Tylenol™) is ok to take for pre and post procedural pain.• If you are taking aspirin (ASA) for cardiovascular benefit, please continue with the same dosage.• There should be no need for narcotic pain medication.
Alcohol	<ul style="list-style-type: none">• <u>Avoid 48 hours before your procedure. Do not consume alcohol while you are taking prescription pain medication.</u>
Tobacco & nicotine	<ul style="list-style-type: none">• Consider talking to your physician or health care provider about stopping. These products impair your ability to heal and might reduce the beneficial effects of the procedure.
Diet	<ul style="list-style-type: none">• You do not need to fast prior to PRP. You may eat normal meals before PRP.• You may resume your regular diet when you feel able after the procedure

Make sure your medical team provides you with the following before or at your procedure:

1. A sling
2. Therapy appointment times
3. Follow-up visit times



Post-Operative Information

Sling	<ul style="list-style-type: none"> It is typically recommended to wear the sling for comfort while awake for the next 2 – 3 days. You do not need to sleep in the sling. Do not drive while wearing the sling.
Discomfort	<ul style="list-style-type: none"> Some pain after your procedure is expected for the first few weeks. Local anesthetic was used and this will begin to wear off about 8 hours after the procedure. Anticipate an increase in pain at this time and consider taking Acetaminophen (Tylenol) about 6 hours after the procedure to stay ahead of your pain. Use an ice pack on the painful area for 15 minutes as needed; in the first 2-3 days consider icing 3 times daily. If you are concerned about your pain, please contact your care team.
Bandage	<ul style="list-style-type: none"> If a bandage / dressing was applied, remove dressing after 24-48 hours. Replace with simple bandage. Sterile strip bandages can be removed when they begin peeling off or after 7 days. Keep procedure area clean and dry for 1 week after the procedure until your doctor has seen you for your wound check.
Bathing	<ul style="list-style-type: none"> It is OK to bathe 24 hours after the procedure
Follow-Up Appointment	<ul style="list-style-type: none"> You will be scheduled a follow-up appointment at approximately one month.
When to call your Provider	<ul style="list-style-type: none"> If you notice increasing redness, warmth, pain, fever, drainage from the wound or other problems that concern you, call Ohio State Sports Medicine (614-293-3600) during normal clinic hours. Otherwise seek care at your local emergency room.

Post-Operative Shoulder Care Timeline

Your Rehabilitation will follow these basic principles:

Phase 1: Inflammation: 3 - 5 days after procedure, sometimes lasting up to 2 weeks.

Purpose: localize and eliminate damaged tissue so that the body can heal

Response: Increase in blood flow, permeability of blood vessels, migration of fluid proteins and white blood cells.

Phase 2: Proliferation: 1-4 weeks after procedure, sometimes lasting up to 8 weeks.

Purpose: PDGF recruit fibroblasts, synthesize collagen to begin to repair tissue.

Response: Davis Law: soft tissue heals according to the manner in which they are being stressed. Rest is contraindicated in this phase.

Phase 3: Remodeling: 1 -3 months after procedure.

Purpose: Remodeling, strengthening, improve cellular organization.

Response: increased organization of collagen. Tissue and scar maturation.



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Please understand that these treatments are not “quick fixes” like cortisone injections but rather we are trying to cause long term healing of the tendon. Anticipate that it may take up to 3 months to experience the improvements in your symptoms.

Day of your procedure	<ul style="list-style-type: none"> • A sling will be given to you at your appointment. • Activity restrictions: Rest today. • Protect your shoulder by resting it.
Days 2-3	<ul style="list-style-type: none"> • Keep arm in sling. • Come out of sling three times per day for gentle range of motion and pendulum exercises and table slides 3 -5 times a day. • You should not sleep in the sling
Days 4-7	<ul style="list-style-type: none"> • Discontinue sling. • Activity restrictions: You may lift up to 1 lbs. Begin use of shoulder for activities of daily living (like using it to groom, dress, eat and drive short distances). No overhead lifting. • <u>Start Rehabilitation:</u> • ROM: AAROM supine progress to seated, AROM elbow and scapula • Progress to AROM of shoulder when tolerated • Pulleys, table slides, wall slides

Rehabilitation Progressions

Progression 1: (weeks 1-2)	<ul style="list-style-type: none"> • Activity Restrictions: lift up to 5 pounds • Continue A/AA/PROM as tolerated. • Manual therapy/Gentle stretching (pectoralis, latissimus, post. cuff) • Scapular strengthening • Proprioceptive Neuromuscular Facilitation (PNF)
Progression 2: (weeks 2 - 4)	<ul style="list-style-type: none"> • Activity Restrictions: progress as tolerated • Continue range of motion exercises. • Perform isometric shoulder strengthening of rotator cuff 1-2 times per day • Arm bike • Manual therapy/gentle stretching • Scapular strengthening • Proprioceptive Neuromuscular Facilitation(PNF)



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Criteria to Progress to Progression 3	<ul style="list-style-type: none"> • Full AROM • Good Scapular Control • No reactive pain >24 hours
Progression 3: (weeks 4 – 6)	<ul style="list-style-type: none"> • Increase intensity of isotonic strengthening under the supervision of your care team including concentric/eccentric activities • Manual resistance PNF patterns • Prone I, Y, T, rows
Criteria to progress to Progression 4	<ul style="list-style-type: none"> • No reactive pain >24 hours
Progression 4: (weeks 6 – 8)	<ul style="list-style-type: none"> • Continue to increase intensity of strengthening exercise. • Throwers 10: band or weights flexion/scaption/ABD, ER/IR
Criteria to Progress to Progression 5	<ul style="list-style-type: none"> • No reactive pain > 24 hours
Progression 5: (weeks 8 – 10)	<ul style="list-style-type: none"> • PNF supine: manual progression to t-band resistance • Plyometrics: 2 hand progression to 1 hand progression • Chest pass, overhead chops, ball slams, rotation throws • Proprioceptive activities: quad weight shifts, closed chain ball on wall, rhythmic stabilization multiple angles
Criteria to progress to Progression 6	<ul style="list-style-type: none"> • Pain free ROM • 5/5 MMT • No reactive pain • Good dynamic control in multi-plane activities • Physician approval
Progression 6 (weeks 10 – 12)	<ul style="list-style-type: none"> • Return to sport • Consider throwing progression in throwers



For Therapists Only

All strength work should be performed every other day, 2-3 sets of each exercise to fatigue without reactive pain >24 hours.

Manual work may begin 2 weeks after the procedure date.

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Completion date: May 2020

References

1. Doss A. Neotendon infilling of a full thickness rotator cuff foot print tear following ultrasound guided liquid platelet rich plasma injection and percutaneous tenotomy: favourable outcome up to one year. *F1000Res*. 2013;2:23. doi: 10.12688/f1000research.2-23.v1. eCollection 2013. PubMed PMID: 24826209; PubMed Central PMCID: PMC4015560.
2. Malavolta EA, Gracitelli MEC, Assunção JH, Ferreira Neto AA, Bordalo-Rodrigues M, de Camargo OP. Clinical and Structural Evaluations of Rotator Cuff Repair With and Without Added Platelet-Rich Plasma at 5-Year Follow-up: A Prospective Randomized Study. *Am J Sports Med*. 2018 Nov;46(13):3134-3141. doi: 10.1177/0363546518795895. Epub 2018 Sep 20. PubMed PMID: 30234999.
3. Sussman WI, Mautner K, Malanga G. The role of rehabilitation after regenerative and orthobiologic procedures for the treatment of tendinopathy: a systematic review. *Regen Med*. 2018 Mar;13(2):249-263. doi: 10.2217/rme-2017-0110. Epub 2018 Mar 9. Review. PubMed PMID: 29521582.



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