

PHASE I (0 to 7 days after PRP Procedure)

Physical Therapy	<ul style="list-style-type: none"> No physical therapy at this time as physical therapy begins 7 to 10 days after procedure
Precautions	<ul style="list-style-type: none"> Immobilization of the joint <ul style="list-style-type: none"> Injection to shoulder: shoulder sling Injection to elbow: shoulder sling and wrist splint with provider discretion Injection to wrist: wrist splint Injection to hip and knee: crutches for non-weight bearing of affected extremity Injection to ankle/foot: crutches for non-weight bearing of affected extremity and walking boot No NSAID use (Advil, Motrin, Ibuprofen, etc.) No ice use
Exercise	<ul style="list-style-type: none"> Prevent joint from stiffening Gentle passive, active assisted and active range of motion of immobilization device (PROM, AAROM, and AROM)
Goals	<ul style="list-style-type: none"> Protect the treated area Minimize pain

PHASE II (7 to 14 days after PRP Procedure)

Physical Therapy	<ul style="list-style-type: none"> Begin physical therapy at this time for light, soft tissue mobilization and range of motion work 1-2 times per week
Precautions	<ul style="list-style-type: none"> Body Part: <ul style="list-style-type: none"> Shoulder: Discontinue use of sling (may occur at day 10) Elbow: Discontinue use of shoulder sling/wrist splint Wrist: Discontinue of use of wrist splint (may occur at day 10) Hip/Knee: Weight bearing as tolerated with discontinued use of crutches from 2 to 1 to none when able to ambulate pain free (toe-touch) Ankle/Foot: Weight bearing as tolerated with discontinued use of crutches from 2 to 1 to none when able to ambulate pain free (toe-touch)

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	<ul style="list-style-type: none"> • DO NOT overstress the tendon, lift heavy objects, exercise with weights or perform high impact activities at this time
Exercise	<ul style="list-style-type: none"> • Continue active range of motion exercises for all joints with pain free range 3 times per day for 5 minute sessions • Upper extremity: <ul style="list-style-type: none"> ○ Arm bike (low resistance) ○ Lower body and core strengthening exercises • Shoulder: <ul style="list-style-type: none"> ○ Arm bike (low resistance) ○ AAROM/AROM of shoulder to pain free range ○ Shoulder isometrics ○ Light stretching of shoulder musculature (pecs, lats, posterior cuff musculature, etc.) • Elbow/Wrist: <ul style="list-style-type: none"> ○ Arm bike (low resistance) ○ AAROM/AROM of wrist and elbow to pain free range ○ Wrist and elbow isometrics ○ Light stretching to wrist/elbow musculature (wrist flexors/extensors, etc.) • Lower extremity: <ul style="list-style-type: none"> ○ Bike (low resistance) ○ Upper body strengthening exercises • Hip: <ul style="list-style-type: none"> ○ Bike (low resistance) ○ Pool walking ○ AAROM/AROM of hip ○ Hip isometrics ○ Light stretching to hip musculature (quads, hip flexors, glutes, hip ERs, etc.) • Knee: <ul style="list-style-type: none"> ○ Bike (low resistance) ○ Pool walking ○ AAROM/AROM of knee ○ Knee isometrics (quad sets) ○ Light stretching of knee/hip musculature (quads, hip flexors, glutes, hip ERs, hamstrings, etc.) • Ankle/Foot: <ul style="list-style-type: none"> ○ Bike (low resistance) ○ Pool walking ○ AAROM/AROM of ankle ○ Ankle isometrics ○ Light stretching of ankle/foot musculature (gastroc, soleus, foot intrinsics, etc.)

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Goals	<ul style="list-style-type: none"> Discontinue immobilizing device Progress 10-14 days after procedure
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PHASE III (2 to 4 weeks after PRP Procedure)

Physical Therapy	<ul style="list-style-type: none"> Joint and soft tissue mobilizations as needed to restore normal range of motion and joint mechanics 2 to 3 times per week Physician follow-up 4 weeks after procedure
Precautions	<ul style="list-style-type: none"> Maintain low resistance while biking DO NOT overstress the tendon, lift heavy objects, exercise with weights or perform high impact activities at this time
Exercise	<ul style="list-style-type: none"> Continue active range of motion exercises for all joints pain free range 3 to 5 times per day for 5 minute sessions Stretching exercises for affected area 2 to 3 times per day, 3 to 4 reps, 20 to 30 second holds Strengthening isometric and concentric exercise progressing to eccentric exercise as tolerated Upper extremity <ul style="list-style-type: none"> Arm bike (low resistance) Lower body and core strengthening exercises Shoulder: <ul style="list-style-type: none"> Arm bike (low resistance) AAROM/AROM of shoulder to pain free range Shoulder isometric and concentric strengthening progressing to eccentric as tolerated Light stretching of shoulder musculature (pecs, lats, posterior cuff musculature, etc.) Elbow/Wrist: <ul style="list-style-type: none"> Arm bike (low resistance) AAROM/AROM of wrist and elbow to pain free range Wrist and elbow isometric and concentric strengthening progressing to eccentric as tolerated Light stretching to wrist/elbow musculature (wrist flexors/extensors, etc.) Lower extremity: <ul style="list-style-type: none"> Bike (low resistance) Upper body strengthening exercises Hip: <ul style="list-style-type: none"> Bike (low resistance) Pool walking

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	<ul style="list-style-type: none"> ○ AAROM/AROM of hip ○ Hip isometric and concentric strengthening progressing to eccentric as tolerated (low impact table exercises-SLR 4-way, LAQ, SAQ, bridges, clams, reverse clams, etc.) ○ Light stretching to hip musculature (quads, hip flexors, glutes, hip ERs, etc.) ● Knee: <ul style="list-style-type: none"> ○ Bike (low resistance) ○ Pool walking ○ AAROM/AROM of knee ○ Knee isometric and concentric strengthening progressing to eccentric as tolerated (low impact table exercises-SLR 4-way, LAQ, SAQ, bridges, clams, reverse clams, etc.) ○ Light stretching of knee/hip musculature (quads, hip flexors, glutes, hip ERs, hamstrings, etc.) ● Ankle/Foot: <ul style="list-style-type: none"> ○ Bike (low resistance) ○ Pool walking ○ AAROM/AROM of ankle ○ Ankle/foot isometric and concentric strengthening progressing to eccentric as tolerated (low impact table exercises-ankle 4-way, ankle pumps, ankle circles, foot intrinsic strengthening, etc.) Note: perform hip and core table strengthening exercises with this ○ Light stretching of ankle/foot musculature (gastroc, soleus, foot intrinsics, etc.)
Goals	<ul style="list-style-type: none"> ● Achieve full pain free range of motion (0/10 pain threshold on VAS) ● Decrease pain with activities of daily living (0-2/10 pain threshold on VAS)

PHASE IV (4 to 6 weeks after PRP Procedure)

Physical Therapy	<ul style="list-style-type: none"> ● 2 to 3 times per week ● Joint and soft tissue mobilizations as needed to restore normal range of motion and joint mechanics
Precautions	<ul style="list-style-type: none"> ● Avoid high velocity, high amplitude, high intensity exercise at this time (such as running, jumping, plyometrics, throwing or heavy lifting) ● Non-impact activities ● Avoid pain post-activity

<p>Exercise</p>	<ul style="list-style-type: none"> • Moderate resistance on bike • Continue stretching exercises for affected area 2 to 3 times per day, 3 to 4 reps, 20-30 second holds • Focus on eccentric strengthening progression program as tolerated • Incorporation of balance and proprioception exercises • Upper extremity <ul style="list-style-type: none"> ○ Arm bike (moderate resistance) ○ Lower body and core strengthening exercises • Shoulder: <ul style="list-style-type: none"> ○ Arm bike (moderate resistance) ○ AROM of shoulder in pain free range ○ Shoulder eccentric strengthening as tolerated ○ Stretching of tight muscles in affected area (pecs, lats, posterior cuff musculature) • Elbow/Wrist: <ul style="list-style-type: none"> ○ Arm bike (moderate resistance) ○ AROM of wrist and elbow in pain free range ○ Wrist and elbow eccentric strengthening as tolerated ○ Stretching to tight muscle in affected area (wrist flexors/extensor groups) • Lower extremity: <ul style="list-style-type: none"> ○ Bike (moderate resistance) ○ Upper body strengthening exercises • Hip: <ul style="list-style-type: none"> ○ Bike (moderate resistance) ○ Elliptical (low progressing to moderate resistance as tolerated) ○ Pool walking/running ○ AROM of hip in pain free range ○ Hip eccentric strengthening as tolerated ○ Stretching of tight muscles in affected area (quad/hip flexors/glutes) • Knee: <ul style="list-style-type: none"> ○ Bike (moderate resistance) ○ Elliptical (low progressing to moderate resistance as tolerated) ○ Pool walking/running ○ AROM of knee ○ Knee eccentric strengthening as tolerated ○ Stretching of tight muscles in affected area (quad/hamstrings) • Ankle/Foot: <ul style="list-style-type: none"> ○ Bike (moderate resistance) ○ Elliptical (low progressing to moderate resistance as tolerated) ○ Pool walking/running
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	<ul style="list-style-type: none"> ○ AROM of ankle ○ Ankle eccentric strengthening as tolerated ○ Stretching of tight muscles in affected area (gastroc/soleus/foot instrinsics)
Goals	<ul style="list-style-type: none"> ● Progression of isometric strengthening to concentric strengthening and eccentric strengthening as tolerated ● Begin to incorporate balance and proprioception activities ● Perform all activities of daily living pain free (0/10 pain threshold on VAS)

PHASE V (6 to 8 weeks after PRP Procedure)

Physical Therapy	<ul style="list-style-type: none"> ● 2 to 3 times per week
Precautions	<ul style="list-style-type: none"> ● Avoid high velocity, high amplitude, high intensity exercise at this time (such as running, jumping, plyometrics, throwing or heavy lifting) ● Avoid pain post-activity
Exercise	<ul style="list-style-type: none"> ● Move to high resistance on bike and elliptical ● Continue stretching exercises for affected area 2 to 3 times per day, 3 to 4 reps, 20-30 second holds ● Strengthening with eccentric exercise focus at a moderate intensity (3-4 sets of 6-12 reps) ● Balance and proprioception exercises ● Upper extremity <ul style="list-style-type: none"> ○ Arm bike (high resistance) ○ Lower body and core strengthening exercises ● Shoulder: <ul style="list-style-type: none"> ○ Arm bike (high resistance) ○ Shoulder eccentric strengthening (thera-band drills, manual resistance, etc. for RTC) ○ Stretching of tight muscles in affected area (pecs, lats, posterior cuff musculature) ● Elbow/Wrist: <ul style="list-style-type: none"> ○ Arm bike (high resistance) ○ Wrist and elbow eccentric strengthening (thera-band, dumbbell exercises, etc.) ○ Stretching to tight muscle in affected area (wrist flexors/extensor groups) ● Lower extremity: <ul style="list-style-type: none"> ○ Bike and elliptical (high resistance)

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	<ul style="list-style-type: none"> ○ Upper body strengthening exercises ● Hip: <ul style="list-style-type: none"> ○ Bike (high resistance) ○ Elliptical (high resistance) ○ Pool walking/running ○ Hip eccentric strengthening (single leg press, SLS, SL squats, etc.) ○ Stretching of tight muscles in affected area (quad/hip flexors/glutes) ● Knee: <ul style="list-style-type: none"> ○ Bike (high resistance) ○ Elliptical (high resistance) ○ Pool walking/running ○ Knee eccentric strengthening (single leg press, SLS, SL squats, etc.) ○ Stretching of tight muscles in affected area (quads/hamstrings/glutes) ● Ankle/Foot: <ul style="list-style-type: none"> ○ Bike (high resistance) ○ Elliptical (high resistance) ○ Pool walking/running ○ Ankle eccentric strengthening (heel raises, SLS activities, balance board activities etc.) ○ Stretching of tight muscles in affected area (gastroc/soleus/foot intrinsics)
Goals	<ul style="list-style-type: none"> ● Improve strength and endurance ● Pain free (0/10 pain threshold on VAS) 5/5 manual muscle testing on affected limb ● Symmetric proprioception of affected limb

PHASE VI (8 to 12 weeks after PRP Procedure)

Physical Therapy	<ul style="list-style-type: none"> ● 1 to 2 times per week ● Incorporation of more sport specific exercise at this time
Precautions	<ul style="list-style-type: none"> ● Avoid pain post-activity
Exercise	<ul style="list-style-type: none"> ● Continue stretching exercises for affected area 2 to 3 times per day, 3 to 4 reps, 20-30 second holds ● Strengthening with sport specific eccentric exercise at a moderate intensity (3-4 sets of 6-12 reps) ● Balance and proprioception sport specific exercises

	<ul style="list-style-type: none"> • Can incorporate pre-plyometric exercise progressing to plyometric exercise as tolerated • Upper extremity <ul style="list-style-type: none"> ○ Arm bike (high resistance) ○ Lower body and core strengthening exercises • Shoulder: <ul style="list-style-type: none"> ○ Arm bike (high resistance) ○ Shoulder eccentric strengthening (thera-band drills and manual resistance, etc. for RTC) ○ Shoulder pre-plyometrics progressing to plyometrics as tolerated (ball throwing activities) ○ Stretching of tight muscles in affected area (pecs, lats, posterior cuff musculature) • Elbow/Wrist: <ul style="list-style-type: none"> ○ Arm bike (high resistance) ○ Wrist and elbow eccentric strengthening (dumbbell exercises, thera-band, etc.) ○ Wrist/elbow pre-plyometrics progressing to plyometrics as tolerated (ball throwing activities) ○ Stretching to tight muscle in affected area (wrist flexors/extensor groups) • Lower extremity: <ul style="list-style-type: none"> ○ Bike and elliptical (high resistance) ○ Return to run protocol (defer to PT) ○ Upper body strengthening exercise • Hip: <ul style="list-style-type: none"> ○ Bike (high resistance) ○ Elliptical (high resistance) ○ Return to run ○ Hip eccentric strengthening (single leg press, SLS, SL squats, etc.) ○ Lower extremity pre-plyometric exercise progressing to plyometric exercise as tolerated (mini squat jump, squat jump, skaters, single leg vertical jump, etc.) ○ Stretching of tight muscles in affected area (quad/hip flexors/glutes) • Knee: <ul style="list-style-type: none"> ○ Bike (high resistance) ○ Elliptical (high resistance) ○ Return to run ○ Knee eccentric strengthening (single leg press, SLS, SL squats, etc.) ○ Lower extremity pre-plyometric exercise progressing to plyometric exercise as tolerated (mini squat jump, squat jump, skaters, single leg vertical jump, etc.) ○ Stretching of tight muscles in affected area (quad/hamstrings)
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	<ul style="list-style-type: none"> • Ankle/Foot: <ul style="list-style-type: none"> ○ Bike (high resistance) ○ Elliptical (high resistance) ○ Return to run ○ Ankle eccentric strengthening (heel raises, SLS activities, balance board activities etc.) ○ Lower extremity pre-plyometric exercise progressing to plyometric exercise as tolerated (mini squat jump, squat jump, skaters, single leg vertical jump, etc.) ○ Stretching of tight muscles in affected area (gastroc/soleus/plantar fascia/anterior tibialis)
Goals	<ul style="list-style-type: none"> • Return to sport pain free

References:

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