

ORTHOPEDIC AND SPORTS MEDICINE CENTER

SPORTS MEDICINE DIVISION
COMBINED REHAB PROTOCOLS



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**AAHS OUTPATIENT
PHYSICAL THERAPY**

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**ACL Rehab Protocol
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TIMELINE

GOALS

EXERCISES/METHODS

<p>Early Post-operative Day 1-week 2</p>	<p>+Control swelling, inflammation Ice/Compression +Obtain terminal knee extension/hyperextension +Obtain SLR without lag +Normalize ambulation</p>	<p>Extension:</p> <ul style="list-style-type: none"> • Heel prop • calf (with ext) • hamstring stretches, • Quad sets (electrical stimulation prn), • 3 way SLR with brace • superior patellar mobs <p>Flexion:</p> <ul style="list-style-type: none"> • inferior patellar mobs, • heel slides (0-90) • wall slides,
<p>Week 2</p>	<p>+Continue to address above goals +Begin pain free functional strengthening</p>	<ul style="list-style-type: none"> • Bike, • heel slides (110-115) • Weight shifts, • Leg press, • step ups • mini squats (0-20), • SLS • hamstring curls**
<p>Milestones to reach by end of week 2:</p> <ul style="list-style-type: none"> • Full knee extension • Knee flexion > 90 degrees • SLR without quad lag 		
<p>Week 3-4</p>	<p>+Continue to progress functional strength +Proprioception +neuromuscular control</p>	<ul style="list-style-type: none"> • Heel slides (115-125+) • TKEs • Step ups (front and lateral) • half squats with RNT (0-40) • cone step overs • clam progression • plank progression
<p>Weeks 4-10</p>	<p>+Continue to progress functional strength, proprioception, and neuromuscular control</p>	<ul style="list-style-type: none"> • Wall slide progression with RNT • 4 way contralaterals • Forward/lateral step ups • front step downs, • bosu kneel/balance training, • tiltboard progression • lunges (multiplanar, rotational) • single leg deadlifts progression • cone step overs fwd/lateral with/without sport cord.

BRACING

- Immobilizer until SLR without sag 10x10
- Then functional brace while awake for 6 weeks
- Functional Brace for high level activities for 18 months post op

ROM RESTRICTIONS

- None

WEIGHT BEARING

- Crutches until walk with no limp
- Then WBAT in brace

OTHER RESTRICTIONS AND KEY CONSIDERATIONS

Hamstring Grafts: no hamstring sets until week 5

BTB Auto: no kneeling on anterior knee pressure for 6 weeks. Focus on early and full patella mobs

TIMELINE

GOALS

EXERCISES/METHODS

Milestones to reach by end of week 6:

- Normalized gait without assistive device
- Full pain free ROM
- Min to no swelling

Weeks 10-12	+Maximal Strengthening	<ul style="list-style-type: none"> • Single leg mini squat (0-45), • static squat holds with RNT/dynamic core training, • triple flexion/extension (running prep) • light plyometric progression <ul style="list-style-type: none"> •Ankle jumps, jumping in place DBL-SL • trampoline bounding • High volume low stress shuttle training • Anti-gravity treadmill running at 55-65% WB (at 5-10 minutes) • slideboard/fitter • Advanced core stabilization
Weeks 12-14	+ Return to running	<ul style="list-style-type: none"> • FWB Running Progression <ul style="list-style-type: none"> • Level 1– .1 mi walk/ .1 mi jog repeat 10 times • Level 2– .1 mi walk/.2 mi jog (2 miles) • Level 3– .1 mi walk/ .3 mi jog (2 miles) • Level 4– .1 mi walk/ .4 mi jog (2 miles) • Level 5– Jog 2 miles
Weeks 14-16	+ Execute running patterns at 50-75% speed without difficulty	<ul style="list-style-type: none"> • Running pattern training (figure 8, pivot drills) • Advanced plyometrics <ul style="list-style-type: none"> •Box jumps, power skipping, zigzag bounding •Multi-directional plyometrics • Agility drills
Weeks 16+	+Return to athletic participation	<ul style="list-style-type: none"> • Sport specific training drills (cutting,, pivoting, sprinting, plyometrics) <ul style="list-style-type: none"> • gradual return to sport • single hop • triple hop for distance • timed 6m straight • crossover hop

SHOWERING

1. May Shower day 1 after surgery
2. Must “waterproof” surgical site for 5 days after surgery
3. No submerging wounds for 4 weeks

WOUND CARE

1. Remove everything except steri strips the day after surgery
2. Place clean gauze or op-site on wounds daily for 5 days

MEDICATIONS

1. Pain medicine only as needed. Wean off as soon as possible
2. Don't over-use NSAIDS
3. Aspirin 325mg daily for 1 month for DVT prophylaxis

RETURN TO PLAY CRITERIA

Pre-RTP Criteria before testing can commence	<p>Full AROM</p> <p>Resolution of pain</p> <p>No/Trace joint effusion present</p> <p>MMT grossly 5/5 strength in LE</p> <p>LEFS: $\geq 75/80$ (95%)</p> <p>Lysholm Knee Rating: $\geq 95\%$</p> <p>1RM SL Leg Press $\geq 90\%$ contralateral side</p> <p>1RM SL Hamstring Curl $\geq 90\%$ contralateral side</p>
Lower Limb Symmetry Index (LSI): LSI % (mean score of 3 trials on injured limb/ mean score of 3 trials on uninjured limb) x 100	<p>SL Hop: $\geq 90\%$</p> <p>SL Triple Hop: $\geq 90\%$</p> <p>SL 6 meter Timed Hop: $\geq 90\%$</p> <p>SL Cross-over Hop: $\geq 90\%$</p> <p>Overall Score: $\geq 90\%$</p>
Vail Sports Tests:	<p>Passing Score $\geq 46/54$ (85%)</p>
Tuck Jump Assessment (TJA):	<p>perfect score on the TJA or improvement of 20 percentage points from the initial score</p>
Single Leg Squat: No Errors in Form (Errors listed right)	<p>Arm strategy: removal of hand off the waist</p> <p>Trunk alignment: leaning in any direction</p> <p>Pelvis plane: loss of horizontal plane</p> <p>Knee position: tibial tuberosity medial to second toe or tibial tuberosity medial to medial border of foot</p> <p>Steady stance: subject stepped down on non-tested limb, or foot wavered from side-to-side</p>
Modified Star Balance Excursion Test (Y Balance Test):	<p>SEBT % = ((mean score of 3 trials in anterior distance + mean score of 3 trials in posterior lateral distance + mean score of 3 trials in posterior medial distance)/ leg length of stance limb) x 100. Passing Score $\geq 94\%$</p>
Core Testing: (ongoing research): $\geq 90\%$ of all standard timed tests:	<p>Right Single Leg Bridge: Men 95 seconds; Females 75 seconds</p> <p>Left Single Leg Bridge: Men 99 seconds; Females 78 seconds</p> <p>Flexor Endurance Test: Men 136 seconds; Females 134 seconds</p> <p>Extensor Endurance Test: Males 160 seconds; Females 185 seconds</p> <p>Lower Abdominal Muscle Testing: Males 5/5; Females $\geq 4/5$ $(75 \square = 3/5, 60 \square = 3+/5, 45 \square = 4-/5, 30 \square = 4/5, 15 \square = 4+/5, 0 \square = 5/5)$</p>

RTP INSTRUCTIONS

RTP evaluation can progress throughout treatment as appropriate

PRE-RTP

Complete all testing in Pre-RTP section. Only Continue on when able to pass

SESSION 1

LSI, Vail Sports, TJA

SESSION 2

Single leg squat, Y Balance, Core Testing