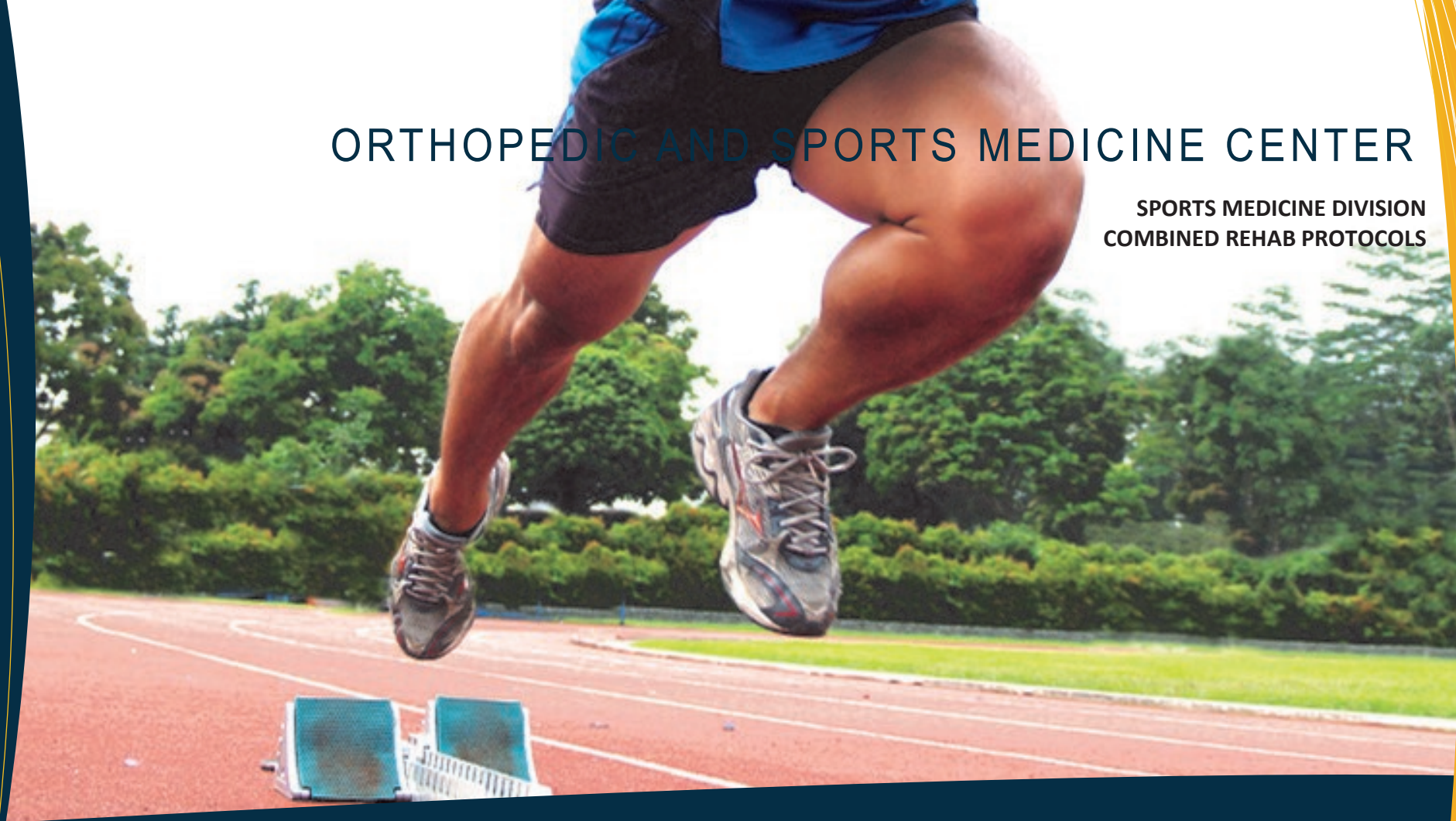


# ORTHOPEDIC AND SPORTS MEDICINE CENTER

SPORTS MEDICINE DIVISION  
COMBINED REHAB PROTOCOLS



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**ACL recon and Meniscus Repair  
Rehab Protocol  
Edited: Jan, 2015**

## TIMELINE

Early Post-operative  
Day 1-week 6

NWB x6 weeks  
PROM/AROM 0-90 x6weeks

## GOALS

+Control swelling, inflammation  
-(RICE)  
+Obtain terminal knee extension/  
hyperextension  
+Obtain SLR without lag  
+Normalize ambulation

## EXERCISES/METHODS

Extension:  
 • Heel prop  
 • Calf stretches (with ext)  
 • Hamstring stretches  
 • Quad sets (E-STIM prn)  
 • 3 way SLR with brace  
 • superior patellar mobs  
 Flexion:  
 • Inferior patellar mobs  
 • Heel slides (0-90)  
 • Wall slides (0-90)  
 • Bike archs (0-90)

Milestones to reach by end of week 6:

- Full knee extension
- Knee flexion 90 degrees
- SLR without quad lag

Week 6-10

+Progress to full knee flexion  
 +Continue to progress:  
 -Functional strength  
 -Proprioception  
 -Neuromuscular control

- Bike full revolutions
- Heel slides (to full ROM)
- Weight shifts
- Leg press- Bipedal
- Step ups
- Mini squats (0-20)
- SLS Activities
- Calf strengthening
- Hamstring curls\*\*
- TKEs
- Half squats with RNT (0-40)
- Cone step overs
- Clam progression
- Plank progression
- Wall slide progression with RNT
- 4 way contralaterals
- Bosu kneeling/balance training,
- Tiltboard progression
- Lunges (multiplanar, rotational)
- Single leg deadlifts progression

## BRACING

- Immobilizer until SLR without sag 10x10
- Then IROM 0-90 for 6 weeks
- Functional Brace for high level activities for 18 months post op

## ROM RESTRICTIONS

- 0-90 for 6 weeks

## WEIGHT BEARING

- PWB for 4 weeks
- 25-50% Week 4
- 50-75% week 5
- 100% after 6 weeks

## 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

No kneeling or WB flexion >90 for 3 months

## TIMELINE

## GOALS

## EXERCISES/METHODS

### Milestones to reach by end of week 10:

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

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

## 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

<b>Pre-RTP Criteria before testing can commence</b>	<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: <math>\geq 75/80</math> (95%)</p> <p>Lysholm Knee Rating: <math>\geq 95\%</math></p> <p>1RM SL Leg Press <math>\geq 90\%</math> contralateral side</p> <p>1RM SL Hamstring Curl <math>\geq 90\%</math> contralateral side</p>
<b>Lower Limb Symmetry Index (LSI): LSI % (mean score of 3 trials on injured limb/ mean score of 3 trials on uninjured limb) x 100</b>	<p>SL Hop: <math>\geq 90\%</math></p> <p>SL Triple Hop: <math>\geq 90\%</math></p> <p>SL 6 meter Timed Hop: <math>\geq 90\%</math></p> <p>SL Cross-over Hop: <math>\geq 90\%</math></p> <p>Overall Score: <math>\geq 90\%</math></p>
<b>Vail Sports Tests:</b>	<p>Passing Score <math>\geq 46/54</math> (85%)</p>
<b>Tuck Jump Assessment (TJA):</b>	<p>perfect score on the TJA or improvement of 20 percentage points from the initial score</p>
<b>Single Leg Squat: No Errors in Form (Errors listed right)</b>	<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>
<b>Modified Star Balance Excursion Test (Y Balance Test):</b>	<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 <math>\geq 94\%</math></p>
<b>Core Testing: (ongoing research): <math>\geq 90\%</math> of all standard timed tests:</b>	<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 <math>\geq 4/5</math>            (75 <math>\square</math> = 3/5, 60 <math>\square</math> = 3+/5, 45 <math>\square</math> = 4-/5, 30 <math>\square</math> = 4/5, 15 <math>\square</math> = 4+/5, 0 <math>\square</math> = 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