

# ORTHOPEDIC AND SPORTS MEDICINE CENTER

SPORTS MEDICINE DIVISION  
COMBINED REHAB PROTOCOLS



Anne Arundel  
Medical Group  
Orthopedic and Sports  
Medicine Specialists

**AAHS OUTPATIENT  
PHYSICAL THERAPY**

Office: (443) 481-1140

**ACL Rehab Protocol  
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Office: (410) 268-8862  
Fax: (410) 268-0380

## TIMELINE

## GOALS

## EXERCISES/METHODS

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

## 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

<b>Weeks 10-12</b>	+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>
<b>Weeks 12-14</b>	+ 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>
<b>Weeks 14-16</b>	+ 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>
<b>Weeks 16+</b>	+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><li>• single hop</li><li>• triple hop for distance</li><li>• timed 6m straight</li><li>• crossover hop</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