

## Appendix 1. General Rehabilitation Guidelines Used for ACL Rehabilitation

Time	Goals	Points to Emphasize
<b>Week 1</b>	<ul style="list-style-type: none"> <li>• Decrease swelling</li> <li>• ROM Exercises 0-90°</li> <li>• Regain full knee extension/hyperextension as compared to contralateral side</li> <li>• Quad Electrical Stimulation/Biofeedback for muscle re-education (use until Excellent Quad Control &amp; No Extension Lag)</li> <li>• Patellar mobilization exercises</li> <li>• Cryotherapy for 20 minutes on and 30 to 40 minutes off – Multiple times daily</li> <li>• <b>Patient must have and maintain full knee extension by no later than week 1</b></li> </ul>	<ul style="list-style-type: none"> <li>• Full knee extension equal to non-surgical side</li> <li>• Patellar mobility</li> <li>• Improve quad control</li> <li>• Control pain/effusion</li> </ul>
<b>Weeks 2-4</b>	<ul style="list-style-type: none"> <li>• Trace to no effusion</li> <li>• Quad sets and straight leg raises with no extension lag</li> <li>• Non antalgic gait</li> <li>• Minimal pain over patellar/quad tendon</li> <li>• Continue with cryotherapy as needed</li> <li>• Focusing on normalizing flexibility of quadriceps and hamstring strengthening/stretching</li> <li>• Patient should have full passive knee extension and hyperextension equal to non-surgical leg</li> <li>• Balance and proprioception (per WB restriction)</li> <li>• Can begin Scar massage/mobilization</li> </ul>	<ul style="list-style-type: none"> <li>• Normalize gait pattern</li> <li>• Normalize patellar tracking</li> <li>• Trace/No effusion</li> <li>• Goal FWB without AD by 4 weeks</li> <li>• Full knee ROM by 4 weeks</li> </ul>
<b>Weeks 5-12</b>	<ul style="list-style-type: none"> <li>• Continue exercises from weeks 2-4 and ice as necessary</li> <li>• Advance loading with single leg, balancing eccentric control of both extremities</li> <li>• Continue to progress towards passing Leg Press Test</li> <li>• Lateral/Posterior Hip and Core Strength</li> <li>• Begin/Continue to improve cardio fitness</li> </ul>	<ul style="list-style-type: none"> <li>• Quadriceps strength/hip &amp; core strength</li> <li>• Eccentric quadriceps control</li> <li>• 6 inch step down test (perform 10 repetitions with good control and no abnormal compensations)</li> </ul>

<b>Months 3-4</b>	<ul style="list-style-type: none"> <li>• Continue to progress towards passing Leg Press Test</li> <li>• Allow Aquatic Therapy if requested (all incision are completely scarred over/ Flutter Kick only No whip Kicks)</li> <li>• Continue to increase/improve cardio fitness</li> <li>• Ratio of handheld dynamometer at least; Quadriceps- 90%/Hamstring- 65%</li> <li>•</li> </ul>	
<b>Months 4-6</b>	<ul style="list-style-type: none"> <li>• Continue to work towards passing Leg Press Test</li> <li>• Advance strengthening of both extremities</li> <li>• Continue to advance cardio fitness</li> <li>• Agilities (can begin once they have passed the Leg Press Test)</li> </ul>	
<b>Months 6-9</b>	<ul style="list-style-type: none"> <li>• Continue to progress towards passing Leg Press Test</li> <li>• Begin cutting/pivoting</li> <li>• Sports Specific exercises</li> </ul>	
<b>Months 9+</b>	<ul style="list-style-type: none"> <li>• Full Functional range of motion and satisfactory muscle strength</li> <li>• No pain/tenderness or swelling</li> <li>• Satisfactory clinical examination</li> </ul>	