

### ACLR Protocol with Patellar Tendon Autograft

Name \_\_\_\_\_ Date \_\_\_\_\_

Procedure \_\_\_\_\_

Procedure Date \_\_\_\_\_

Frequency 1 2 3 4 5 times/week Duration 1 2 3 4 5 6 weeks

\*\*\*Range of motion is an important progression of therapy, but limiting swelling is important.  
Respecting swelling will decrease pain and improve motion.\*\*\*

	MILESTONES	WEIGHT BEARING/ BRACE/ROM	THERAPEUTIC EXERCISE
<b>PHASE I 0-4 weeks</b>	1. Knee flexion greater than 110° 2. Walking without crutches 3. Use of cycle/stair climber without difficulty 4. Walking with full knee extension 5. Reciprocal stair climbing 6. Straight leg raise without a knee extension lag 7. Knee Outcome Survey activities of daily living (KOS-ADL) greater than 65%	<b>WB As tolerated with crutches</b> <b>BRACE 0-1 week:</b> locked in full extension for ambulation and sleeping <b>1-4 weeks:</b> <i>unlocked for ambulation remove for sleeping</i> <b>ROM</b> as tolerated  - Consider alteration of knee flexion angle to most comfortable between 45° and 60° for MVIC assessment and NMES treatments	Week 0-2 Heel slides Quad/hamstring sets Patella mobs NWB gastroc/soleus stretch, SLR with brace in full extension until quad strength prevents extension lag Week 2-4 Step-ups in pain-free range Portal/incision mobilization as needed (if skin is healed) Bike, StairMaster. Wall squats/sits Progress to functional brace as swelling permits Prone hangs if lacking full extension Patellar mobilization in flexion (if flexion is limited)

<p><b>PHASE II</b> <b>4-6 weeks</b></p>	<p>1. Knee flexion ROM to within 10° of uninvolved side 2. Quadriceps strength greater than 60% of uninvolved side - Be aware of patellofemoral forces and possible irritation during progressive resistive exercises</p>	<p>Gradually discontinue crutch use  Discontinue use when patient has full extension and no extension lag  Maintain full extension and progressive flexion</p>	<p>Progress to weight bearing gastroc/soleus stretch. Begin toe raises Closed chain extension Begin balance and proprioceptive activities Hamstring curls Tibiofemoral mobilizations with rotation for ROM if joint mobility is limited Progress bike and StairMaster duration (10-minute minimum) - Treat patellofemoral pain if it arises: modalities, possible patellar taping</p>
<p><b>PHASE III</b> <b>6 – 12 weeks</b></p>	<p>1. Quadriceps strength greater than 80% of uninvolved side 2. Normal gait pattern 3. Full knee ROM (compared to uninvolved side) 4. Knee effusion of trace or less</p>	<p>Full without the use of crutches and a normalized gait pattern  No Brace, but assessment for functional brace as early as week 9  Gain full and pain-free</p>	<p>Advanced closed chain strengthening, progress proprioception activities. Begin Stairmaster, Elliptical and running straight ahead at <b>12 weeks</b> if OK by Surgeon (see below) - Progress exercises in intensity and duration</p>
<p><b>PHASE IV</b> <b>12-24 weeks</b></p>	<p>1. Maintaining or gaining quadriceps strength (greater than 80% of uninvolved side) 2. Hop tests greater than 85% of uninvolved side (see below) at 12 weeks 3. KOS-sports questionnaire greater than 70% treatment</p>	<p>Measurements for Functional Brace</p>	<p>- Begin running progression (see running progression below); on treadmill or track with functional brace (if all milestones are met; may vary with physician or delayed if meniscal repair) - Transfer to fitness facility (if all milestones are met) - Progress flexibility/strengthening, progression of function, forward and backward running, cutting, grapevine, etc. - Initiate plyometrics double leg program at week 16 and sport specific drills. Progress to single leg plyometrics and lateral progressions around week 20 - Sports-specific activities - Agility exercises - Functional testing (see description below).</p>
<p><b>PHASE V</b> <b>6+ months</b></p>	<p>1. Maintaining gains in strength (greater than or equal to 90% to 100%) 2. Hop test 90% or greater</p>	<p>None</p>	<p>Gradual return to sport participation, maintenance program for strength and endurance</p>

	3. KOS-sports 90% or greater 4. Return-to-sport criteria (see below) <ul style="list-style-type: none"> <li>• Recommend changes in rehabilitation as needed. Progression may emphasize single-leg activities in gym, explosive types of activities (cutting, jumping, plyometrics, landing training)</li> </ul>		
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Running Progression (week 13 to week 20):

- Level 1 0.1 mile running, 0.1 mile walking, total 1 mile
- Level 2 0.2 miles running, 0.1 mile walking, total 2 miles
- Level 3 0.4 miles running, 0.1 mile walking, total 2 miles
- Level 4 0.5 miles running, 0.1 mile walking, total 2 miles
- Level 5 0.7 miles running, 0.1 mile walking, total 2.4 miles
- Level 6 1 mile running, 0.2 mile walking, 2 cycles
- Level 7 1.25 miles running, 0.25 mile walking, 2 cycles
- Level 8 1.5 miles running
- Level 9 2 miles running
- Level 10 track running

**Comments:**

FCE \_\_\_\_\_ Work Conditioning/Work Hardening \_\_\_\_\_ Teach HEP \_\_\_\_\_

**Every patient’s therapy progression will vary to a degree depending on many factors. Please use your best clinical judgment on advancing a patient. If other ideas are considered to improve patient’s outcome do not hesitate to call.**

**Patient’s recovery is a team approach: Patient, family/friend support, therapist, and surgeon. Every team member plays an important role in recovery.**

Signature \_\_\_\_\_ Date \_\_\_\_\_