

### **Anterior Cruciate Ligament (ACL) BEAR Repair Protocol**

The patient received the BEAR ACL Repair Implant as surgical treatment for a torn ACL.

***This is not an ACL Reconstruction! Please do not follow a rehabilitation protocol for ACL reconstruction on this patient.***

#### **Pre-Operative**

- Brace – As directed by your doctor
- Weight Bearing – Full, use crutches as necessary
- ROM (range of motion) – Full, no restrictions
- Therapeutic Exercise - Learn exercises for post op regimen
  - Calf stretching
  - Quad sets
  - Four-way straight leg raises (SLR)
  - Heel slides
  - ‘Propped’ knee extension
- Modalities - Cryotherapy (Ice) six to eight times per for 15 to 20 minutes each time
  
- **Goals for Surgery**
  - Minimal to no swelling
  - Full ROM
  - Normal strength

### **Post-Operative Phase I: Weeks 0 to 4**

- Brace - Locked at 0° for ambulation
- Weight Bearing – 50% Partial weightbearing
- ROM
  - Week 0-2: 0-45°
  - Week 2-4: 0-90°
- Therapeutic Exercise - *All exercises without weight*
  - 'Preoperative' exercises
  - Glute sets
  - Ankle pumps
  - Quad sets at 0°
  - No closed kinetic chain (CKC) terminal knee extension
  - No short arc quads
  - *No Passive ROM*
- Modalities
  - Patella mobilizations, *no scar massage*
  - NMES (neuromuscular electrical stimulation) for quadriceps atrophy
  - HVPC (high volt pulsed current) for effusion (swelling) reduction
  - Cryotherapy six to eight times per day for 15 to 20 minutes each
- Cardio - UBE (arm bike)
  
- **Goals for Phase II:**
  - Hip flexion SLR without knee extension lag
  - Full knee extension
  - Knee flexion to 90°
  - Minimal joint effusion

**Post-Operative Phase II: Weeks 4 – 12**

**\*\*\*Include single-leg exercises on non-involved side\*\*\***

- Brace
  - Unlock for ambulation and transition into ACL functional brace
  - *ACL functional brace at all times when weight-bearing*
- Weight Bearing as tolerated with ACL functional brace
- ROM
  - Full Active ROM
  - *No Passive ROM*
- Therapeutic Exercises – Continue Phase I exercises
  - Double-leg Wall slides
  - Heel slides
  - Mini-squats
  - Reciprocal stair training
  - Hamstring curls
  - Side-lying hip adduction + abduction
  - Prone hip extension
- Modalities
  - Scar and soft tissue massage, patella mobilizations
  - NMES (neuromuscular electrical stimulation) for quadriceps atrophy
  - HVPC (high volt pulsed current) for effusion (swelling) reduction
  - Cryotherapy six to eight times per day for 15 to 20 minutes each
- Cardio
  - UBE
  - Stationary bike without resistance
  - Pool walking @ Week 8
- **Goals for Phase III:**
  - Normal gait
  - Knee ROM 0°- 90°
  - Good eccentric control of involved knee

**Post-Operative Phase III: Weeks 12 – 20**

- Weight Bearing - weight bear as tolerated without ACL brace
- ROM - Full
- Therapeutic Exercises – Continue Phase II exercises
  - Quad sets, Step-ups, mini-squats, wall squats
  - Leg press
  - Resistive back SLR with sports cord *for hamstring only (not quad)*
  - Shuttle press without jumping action
  - Seated calf press
- Modalities
  - Scar and soft tissue massage, patella mobilizations
  - NMES (neuromuscular electrical stimulation) for quadriceps atrophy
  - HVPC (high volt pulsed current) for effusion (swelling) reduction
  - Cryotherapy six to eight times per day for 15 to 20 minutes each
- Proprioception
  - Wobble board
  - Rocker board
  - Single-leg stance
  - Slide board
- Cardio
  - Stationary bike
  - Elliptical
  - Pool running
  - Swimming
- **Goals for Phase IV:**
  - Full ROM
  - No effusion
  - No pain
  - Functional strength and control in ADLs
  - *Minimum of 20 weeks post-op*

\*\*\*\*OK FOR LACHMAN AND PIVOT SHIFT TEST @ 6 MONTHS\*\*\*\*

**Post-Operative Phase IV: Weeks 20 – 30**

- Therapeutic Exercises – Continue Phase III exercises
  - Single leg squats
  - Step-ups and Step-downs
  - Shuttle
  - Sports cord
  - Double-leg jumping progressing into hopping
- Proprioception – Progress Phase III tolerance
  - Perturbation training
  - Uneven surfaces
- Cardio
  - UBE
  - Stationary bike with increasing resistance
  - Pool running
  - Swimming
  - Treadmill running with brace
- **Goals for Phase V:**
  - Running without pain or swelling
  - Hold single-leg balance for 10 seconds
  - 50% hop height
  - #1 RTS testing - *Endurance + Functional Strength only*

#### **Post-Operative Phase V: Weeks 30 – 36**

Transitional Therapy for return to sport activities during this phase with progression based upon patient progress through earlier protocol.

**Perform at 50-75% speed and effort**

In addition to ongoing strength, balance, agility, and cardio conditioning, initiate sport specific plyometric activities as tolerated such as:

Soccer/Football: Two foot ankle hop, double-leg hop, front barrier hop, lateral barrier hop, single-leg hop, power skip, backward skip, double arm alternate leg bound, and cycled split squat jump

Basketball/Volleyball: Two foot ankle hop, double-leg hop, squat jump, double-leg vertical jump, single-leg hop, single-leg vertical jump, power skip, backwards skip, double-arm alternate-leg bound, alternate leg push off box drill, and side-to-side push off box drill

Baseball/Softball/Overhead throwing sports: Two foot ankle hops, double-leg hop, front barrier hop, lateral barrier hop, single-leg hop, power skip, backward skip, double arm alternate leg bound, cycled split squat jump, and return to throwing program

- **Goals for Phase VI:**

- #2 RTS testing – 85% of *contralateral leg*
- 85% of running speed

### **Post-Operative Phase VI: Return to Sports**

Return to sports is based on provider team (physician, physician assistant, athletic trainer, therapist) input. Transitional Therapy at 100% effort and speed should continue during this time as the patient prepares to return to sports and athletic activities.

Clearance for return to full sports activities will be determined with input from the entire health team. When cleared by the provider, patients should return to their sports with a *4-week progression plan* as determined by the health team and coaches. This allows the athlete to acclimate to the mental and physical demands of sports and athletics in safe manner.

- **Goals for Phase VI:**

- #3 RTS testing – 95% of *contralateral leg*
- Single-leg balance for 30 seconds
- Single-leg squat – get to 60° without hip IR or knee valgus