

## ACL Reconstruction Rehabilitation Protocol

### GENERAL GUIDELINES

- Program is designed to protect the graft and **get full extension early**
- **Meniscal repairs take priority and require more protection than standard ACL**
- Allografts heal more slowly than bone-patellar tendon or hamstring grafts
- Assume at least 5-7 months graft to bone healing time
- Return to sport is customized to each patient

### GENERAL PROGRESSION OF ACTIVITIES OF DAILY LIVING

- Patients may begin the following activities at the dates indicated (unless otherwise specified by the physician): Expect 16 to 30 total PT visits
- Showering – once dressing removed (at 3-4 days); no immersion until stitches/staples removed and wounds healed; may remove brace for shower.
- May sleep without brace after 10 days if full knee extension is achieved
- Driving: when safely able to operate the controls of the vehicle (recommend 10 days) and off of pain pills. Usually 2 weeks for left knee surgery (assuming automatic transmission), and 6 weeks for right leg surgery.

### PHYSICAL THERAPY ATTENDANCE

- Specific PT appointments may be limited by insurance or other factors
- Formal PT ideally begins after 5-7 days
- 3 times per week is optimal for the first month
- Home exercises daily as instructed by the therapist
- Supervised physical therapy takes place for approximately 3-5 months post-op

### PHASE I: (0 to 4 weeks)

Begins immediately following surgery and lasts approximately one month. Patient is to perform ROM exercises and hip, knee and ankle strengthening as directed daily.

### Goals:

- Protect healing bony and soft tissue structures
- Minimize quadriceps atrophy and joint stiffness through:
  - Early range of motion with emphasis on **full extension**, patella mobilizations and control of swelling/pain, ice 3 times a day for first 7 days
  - PRE's for quadriceps, hip and calf

### Weight bearing Status:

- 0-1weeks: Partial weight bearing with two crutches to assist with balance (in brace)

- 1-2 weeks: Partial weight bearing with normal gait mechanics
- After 2 weeks, full weight bearing allowed based on quad function

\* With meniscal repair weight bearing in locked brace for 6 weeks

\*\* Non-weightbearing for 6 weeks for microfracture, OATS, Biocartilage procedures

### **Therapeutic Exercises:**

0-2 weeks

- Hip flexion, extension, abduction and adduction as tolerated
- Straight leg raises and quad sets for quads tone
- Ankle Pumps
- Patella mobilizations
- Passive and active full extension drills to include prone hangs, quad sets, straight leg raise
- Active flexion to 90 if possible
- E- stim may be helpful

Add at first post-op visit 2 weeks out through week 4:

- Standing toe raises for calf muscle tone
- For bone-tendon-bone may begin AAROM for full ROM, begin exercise bike, balance training
- For hamstrings or Allograft same exercises as above but limit flexion to 90 (i.e., mini-squats, balance, bicycle with low resistance) after 4 weeks (no mini-squats with meniscal repair)
- After sutures out at 2 weeks if pool available may begin aquatics (walk in pool, mini-squats). Pool is helpful but not essential.

### **PHASE II: (4 to 12 Weeks)**

#### **Goals:**

- Increase ROM; progress to full flexion; must have full extension. Minimal to no limp
- Progress in weight bearing for all patients/all grafts according to previous precautions (i.e., lateral side surgery 6-8 weeks of crutch/brace)
- Continue lower extremity muscle toning, hip and core strengthening, wobble board
- Begin functional restoration of leg function for balance and ADL
- Begin total patient reconditioning with non-impact cardiovascular exercise
- Continue to protect graft

### **Therapeutic Exercises:**

- Continue isometric quads and co-contraction of quads/hams
- Progress to mini-squats when able to be full weight bearing, graduated step ups OK
- May continue hip flexion/extension/Abduction/Adduction
- Closed kinetic chain for knee extension utilizing resisted band while standing and weight machines as follows. Leg press/Total Gym may be used. Avoid leg extension machine.
- Stationary bike, XC ski machine, Stairmaster and/or elliptical machines can be used for cardio and leg conditioning
- Balance and proprioception activities (e.g. single leg stance or mini- trampoline)
- Meniscal repair – use caution with squatting for at least 12 weeks

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### **PHASE III: (3-6 months)**

#### **Goals:**

- Must have full ROM to progress to Phase III
- Improve overall knee and core strength as well as proprioception
- Continue to work on restoration of functional progression of the extremity while protecting the graft in preparation for return to activity or sports

#### **Therapeutic Exercises:**

- Continue lower extremity exercise progression with emphasis on quads tone and strength
- Avoid hamstring curls for 6 months if hamstring graft utilized
- Treadmill walking progress to jogging as tolerated
  - **Must pass return to running tests prior to running:**
  - 20 single leg squats, squat without knee valgus collapse, minimal atrophy or swelling
- Stairmaster/elliptical trainer, swimming is OK (no breast stroke)
- May progress to outdoor biking, walking and ultimately running at 3-4 months
- May golf or bowl at a low level
- No twisting, turning or jumping activities yet

### **PHASE IV:**

Return to sport at approximately 6-8 months if pain free and passed all functional tests

#### **Goals:**

- Safe and gradual return to work or athletic participation
- This may involve sports specific training, work hardening or job restrictions as needed
- Running progression to sprinting and agility drills
- Figure 8 progression, Carioca, Backward running, cutting
- Jumping (plyometrics) if needed for sport (i.e., volleyball or basketball)
- Continue ACL prevention (PEP or Sportsmetrics) program

### **RETURN TO SPORT**

This is individualized to each patient and requires certain criteria must be met including full ROM, no pain or swelling and confidence in the knee. Sport-specific training and drills must be completed. Single leg and triple leg hop test must be 90% of non-operative knee. In many cases an ACL brace will be used for the first 1-2 years after surgery. Much of this is patient and sport-specific.

\* Meniscal repair patients will ambulate with locked brace for 6 weeks. May remove brace for active and passive ROM but avoid forced flexion past 90 degrees for first 4 weeks. No squatting past 90 degrees for 12 weeks

\*\*\*These instructions are to be used as general guidelines, but it is crucial not to advance outside the protocol before 12 weeks even if the patient seems ready. **Re-rupture is devastating and must be avoided!** Please contact us if there are questions or concerns

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