



Pre-Operative ACL Repair Protocol

Pre-Operative Phases: (2 phases approx. 5-7 weeks of at least 10-15 sessions)

General Goals for both phases 1 and 2 are:

- Diminish inflammation, swelling, and pain
- Restore normal ROM, especially knee extension
- Restore voluntary muscle activation, especially quadriceps
- Improve Neuromuscular control including perturbation training
- Restore normal walking gait pattern

Phase One: Initial Phase-

- **Goal:**
 - Patients to fill out an the International Knee Documentation Committee Subjective Form (IKDC) **or** the Knee Injury and Osteoarthritis Outcome Score Form (KOOS)- age appropriate version, **and** the Knee Outcome Survey Activities of Daily Living Scale (KOS-ADL), and Lower Extremity Functional Scale (LEFS)
 - Resolve edema and/or ROM deficits-
 - As soon as this is accomplished patient can begin phase two.

Phase Two: Progressive Phase-

- **Goal:**
 - To restore adequate muscle strength and neuromuscular responses
- **Exercises:**
 - Warm-up on stationary bicycle, or treadmill- at least 10 minutes
 - Single-leg Squat- Maintaining knee-over-toe position- 8 reps, up to 3 sets
 - (ROM 0°- 45° to start)
 - Step-up- Maintaining knee-over-toe position- 10 repetitions, up to 2 sets
 - Starting with 4 inch/ 10cm step
 - Squats on BOSU- Maintaining knee alignment and core stability- 20 repetitions, one to 2 sets
 - Single-limb leg press- 90° of knee flexion- 6 repetitions, up to 3 sets
 - Single-Limb knee extension- 90° of knee flexion 6 repetitions, up to 6 sets, starting with number of tolerated sets
 - Squats- Squat slowly down to 90° of knee flexion, stop, lift quickly up again- 8 repetitions, up to 3 sets

- Leg Curl- Lift quickly up, stop, and slowly lower down into full extension- 8 repetitions, up 3 sets
- Bridges with hamstring curl (DL->progress to SL)- leg(s) on ball, Lift lower back and pelvis up, roll the ball towards you then away, and repeat. 6 repetitions up to 3 sets
- Single-Leg Hop- hop forward and stop with controlled landing up to 15 repetitions (Alternating LE's, with 30 second rests between repetitions)
- Sideways Single-Leg Hop- hop side-to-side quickly 3 times then stop. Perform 5 repetitions. (Alternating LE's, with 30 second rests between repetitions)- **Focus on soft landing and proper knee position**
- Perturbation training
- * **Patients should follow +2 principle of if the patient can perform an additional 2 repetitions of an exercise, with good form, they can progress the load the next session**
- **Patient Education:**
 - Post-op Rehabilitation Program (end of Pre-Op Rehabilitation sessions)