

PHASE I:	Generally 0 - 4 weeks post-op
<b>PHASE I GOALS:</b>	Protect surgical graft Normal gait and stair ambulation ROM: full knee extension, $\geq 120^\circ$ knee flexion
<b>PRECAUTIONS:</b>	*Wear brace at all times (even while sleeping)* * <b>NO</b> open kinetic chain strengthening exercises* * <b>NO</b> running until 3-4 months post-op*
<b>CRUTCHES:</b>	Weight-bearing as tolerated - (suggest a gradual increase as follows): <ul style="list-style-type: none"> <li>o Week 1: partial weight-bearing @ 25-50% body weight</li> <li>o Week 2: partial weight-bearing @ 50-75% body weight</li> <li>o Week 3: weight-bearing as tolerated @ 75-100% body weight</li> </ul>
<b>BRACE:</b>	Locked at $0^\circ$ until able to do 15-30 SLRs without a lag. Then, open to current ROM.
<b>WOUND:</b>	Post-op dressing remains intact until post-op day #2 (~48 hours after surgery) May begin showering after post-op day #2 (no need to cover incision site) * <b>Do NOT</b> submerge knee in tub or pool for 4 weeks Suture/staple removal @ 10-14 days per Ortho/PT
<b>REHABILITATION:</b>	Frequent use of cryocuff and/or ice with lower extremity elevated Begin patellar mobilizations (10 reps each direction TID) after suture/staple removal Begin scar massage after incision site sloughs/scar is formed Begin with the first 5 exercises below and add others gradually as tolerated
~Days 1-7	Calf pumping w/ tubing Heel slides - assisted as needed Static quad sets (with estim until patient able to do 10 SLRs without extension lag) Supine passive extension with towel under heel (prone hangs as needed) Gentle hamstring stretching
~Days 8-14	SLRs: All directions - may add light weight when pain free Stationary bike for ROM - progress to biking for conditioning Seated ankle disk training
~Days 15-28	Heel raise progression: begin bilateral heel raises - progress to unilateral Double leg mini-squats ( $0-45^\circ$ ) - progress to single leg Gait training (cone walking, marching, retrowalking, cariocas, shuffles, etc.) Forward, lateral, and retro step-ups (start with 2", progress as tolerated) Leg press & hamstring curls (bilaterally with light weights) UBE and/or well leg cycle
<b>FOLLOW-UP:</b>	Physical Therapy: Weekly; Ortho: ~4 weeks post-op; Supervised rehab: 2-3 x per week
<b>DOCUMENTATION:</b>	Precautions, pain level, medications and modalities Observation: (incision sites) - Signs/symptoms of infection? Site healing well? Effusion? Neurovascular status: Distal pulses, motor and sensation intact? Presence of calf pain? Knee ROM, quadriceps function, & gait

**PHASE II: Generally 2-4 months post-op**

**PHASE II GOALS:** Full knee ROM and minimal or no effusion  
≥ 80% quadriceps and hamstring strength compared to the uninvolved side  
Hop without pain using good form

**PRECAUTIONS:** \***NO** open kinetic chain strengthening exercises\*  
\***NO** running until 3-4 months post-op\*

**BRACE:** Based on control of quad w/ SLR and normalization of gait cycle. Wear during PT

**REHABILITATION:** Continue phase I exercises as needed  
Progress to the following exercises and increase intensity gradually when patient is ready  
(i.e., no increase in knee pain or effusion since the previous exercise session)  
\*Note: all strengthening should be done with the brace on, starting with low weights,  
high repetitions, and in a painless ROM\*

**~5-8 weeks** Aggressive stationary biking for conditioning - may add elliptical gradually  
Beginning level pool exercises - primarily sagittal plane exercises (No "whip" kicking)  
General LE stretching (calf, HS, quads, HF, hip adductors)  
Progressive standing balance exercises (body blade, plyoball, platform training, etc.)  
(progress in duration, intensity, double leg to single leg, etc.)  
Progressive strengthening (calf press, leg press, squats (0-45°), HS curls, hip abd/add)  
(first set: 30 repetitions, then 1 additional set at the same weight to muscle failure)

**~9-12 weeks** Progressive pool program as tolerated  
Elliptical and/or stairmaster  
Progressive strengthening (calf press, leg press, squats (0-45°), HS curls, hip abd/add)  
(first set: 20 repetitions, then 2 additional sets at the same weight to muscle failure)

**~13-16 weeks** Progressive functional training (2 legged plyometrics, jump roping, etc.)  
Progressive strengthening (calf press, leg press, squats (0-45°), HS curls, hip abd/add)  
(first set: 10 repetitions, then 2 additional sets at the same weight to muscle failure)  
\*Optional: If phase II goals are met by the ortho/PT evaluation at 12 weeks post-op  
(i.e., ≥ 80% quad & HS isokinetic peak torque (at 60° per second) compared to the  
uninvolved side, hop without pain using good form, full ROM, and no knee effusion), the  
patient may begin a clinic-supervised treadmill jogging program. Jogging may not exceed  
10 minutes per session or 30 minutes per week.

**FOLLOW-UP:** PT: Bimonthly; Ortho: ~12 weeks post-op;  
Supervised rehabilitation: 2-3 x per week as needed

**DOCUMENTATION:** Precautions  
Pain level, medications, modalities  
Effusion  
Knee ROM, quadriceps function, & gait

**PHASE III: Generally 5-6 months post-op**

<b>PHASE III GOALS:</b>	Jog at own pace and distance without pain Strength return of ~90% for quadriceps and hamstring compared to uninvolved side
<b>PRECAUTIONS:</b>	* <b>NO</b> participation in sports*
<b>BRACE:</b>	Hinged knee sports brace (as needed per ortho)
<b>REHABILITATION:</b>	Continue other phase II exercises as needed Progress in duration and intensity of exercise only if there is no increase in knee pain or effusion since the previous exercise session. Warm-up: 5-10 minutes (bike, elliptical, stairmaster) General LE stretching: 5-10 minutes (calf, HS, quads, HF, hip adductors) Progressive strengthening (calf press, leg press, squats (0-60°), HS curls, hip abd/add) (first set: 6-8 repetitions, then 2 additional sets at the same weight to muscle failure) Progressive balance training as needed Progressive jogging program (increase time and/or distance no more than 10-20% per wk) Progressive functional training: Begin at 25-50% intensity and progress gradually (jumping, hopping, directional jogging, cariocas, shuffles, etc.)
<b>FOLLOW-UP:</b>	PT: Monthly; Ortho: ~6 months post-op; Supervised rehab: 1-2 x per week as needed
<b>DOCUMENTATION:</b>	Pain level & medications Effusion Knee ROM & quadriceps function Hop for distance Isokinetic testing at 6 months post-op
<b>MISCELLANEOUS:</b>	After 6 months post-op: Exercises in phase III are continued, gradually increasing intensity & duration as tolerated. The recommendation is to wait until 9-12 months post-op to return to contact/collision Sports. This time period may be adjusted slightly by the surgeon and therapist according to patient progress.