



ACL Reconstruction Post-operative Rehabilitation Protocol

Phase 1: 0-4 weeks post-operatively

Goals	<ul style="list-style-type: none"> • Protect graft • Minimize pain • Minimize swelling • Begin active range of motion of knee as tolerated
Brace/Crutch Use	<ul style="list-style-type: none"> • Wear knee immobilizer until nerve block wears off, then no immobilizer is needed • No brace needed • Weight bearing as tolerated using crutches • Wean from crutches as tolerated
Range of Motion	<ul style="list-style-type: none"> • Knee flexion 0-120° as tolerated • Work on restoring normal gait
Strengthening	<ul style="list-style-type: none"> • Ankle pumps • Work on quad control (quad sets, heel slides, straight leg raises) • For hamstring tendon autograft- delay hamstring strengthening for 12 weeks, heel slides to 90° • For patellar tendon autograft- hamstring curls adding weight as tolerated, Closed Kinetic Chain quadriceps strengthening as tolerated (wall sit, step ups, mini squats, leg press 90-30°)
Home Instructions	<ul style="list-style-type: none"> • Keep surgical dressings clear and dry • Change surgical bandages on 2nd day after surgery (keep covered until first clinic visit) • Can bathe on the 2nd day after surgery (do not scrub, soak, or submerge the incisions) • Sutures will be removed at first post-operative visit • Take Aspirin (or other DVT medication) twice daily for 2 weeks after surgery

Phase 2: 4-10 weeks post-op

Goals	<ul style="list-style-type: none"> • Restore normal gait • Maintain full extension, progress to full flexion range of motion • Protect graft • Increase hip, quadriceps, hamstring and calf strength • Increase proprioception
Brace/Crutch Use	<ul style="list-style-type: none"> • Weight bearing as tolerated
Range of Motion	<ul style="list-style-type: none"> • Continue progressing in range of motion/flexibility to achieve full knee flexion • Work on restoring normal gait • Continue hamstring, gastroc/soleus stretches

Strengthening	<ul style="list-style-type: none"> • Closed kinetic chain strengthening <ul style="list-style-type: none"> ○ Patellar tendon autograft procedures: one-leg squats, leg press, step ups at increased height, partial lunges, deeper wall sits, lunge walks ○ Initiate CKC quad strengthening and progress as tolerated for hamstring tendon autograft procedures: wall sits, step-ups, mini-squats, Leg press 90o-30o, lunges • Stairmaster – begin with short steps, avoid hyperextension • Nordic Trac or elliptical machine for conditioning • Stationary bike – progress time and resistance as tolerated • Continue to progress proprioceptive activities for patellar tendon autograft procedures; initiate for hamstring tendon autograft procedures: ball toss, balance beam, mini-trampoline balance • Continue to progress hip, hamstring, and calf strengthening as tolerated • If available, begin running in pool (waist deep) or an unweighted treadmill at 8 weeks
Home Instructions	<ul style="list-style-type: none"> • Continue physical therapy and home exercises • Work on achieving full range of motion

Phase 3: 10-16 weeks post-op

Goals	<ul style="list-style-type: none"> • Full range of motion • Improve strength, endurance, and proprioception of lower extremity • Protect patellofemoral joint • Normal running mechanics/gait • Strength approximately 70% of the uninjured lower extremity (using isokinetic evaluation if available)
Brace/Crutch Use	<ul style="list-style-type: none"> • Full weight bearing
Range of Motion	<ul style="list-style-type: none"> • Continue range of motion exercises to maintain full active ROM
Strengthening	<ul style="list-style-type: none"> • Initiate OKC knee extensions 90°-30°, progress to eccentrics • Begin swimming if desired • If available, isokinetics (with anti-shear device) – begin with mid-range speeds (120o/sec – 240o/sec) • Progress toward FWB running at 12 weeks for BTB autograft, 16 weeks for hamstring tendon autograft • Progressive hip, quadriceps, hamstring, and calf strengthening • Advance proprioceptive activities to initiate agility activities • Recommend isokinetic test with anti-shear device at 12 weeks for BTB autograft, 14-16 weeks for hamstring tendon autograft- used to guide continued strengthening

Phase 4: 4-6 months post-op

Goals	<ul style="list-style-type: none"> • Symmetric performance of basic and sport specific agility drills • Single hop and 3 hop tests 85% of uninjured lower extremity (STEP and LEAP testing will need to be scheduled 4 months and 6 months after surgery – information will be given at follow-ups appointments in the Sports Medicine clinic) • Quadriceps and hamstring strength at least 85% of uninjured lower extremity per isokinetic strength test
Brace/Crutch Use	<ul style="list-style-type: none"> • Full weight bearing

Range of Motion	<ul style="list-style-type: none"> Maintain full knee range of motion
Strengthening	<ul style="list-style-type: none"> Continue and progress flexibility and strengthening program based on individual needs and deficits Initiate plyometric program as appropriate for patient's goals Agility progression including, but not limited to: <ul style="list-style-type: none"> Side steps, crossovers, figure 8 running, shuttle running, one leg & two leg jumping, cutting, acceleration/deceleration sprints, agility ladder drills, sport-specific drills as appropriate for patient Assessment of running on treadmill for proper running mechanics Continue progression of running distance based on patient needs

Phase 5: 6 months post-op and beyond

Goals	<ul style="list-style-type: none"> Safe return to athletics/work Maintenance of strength, endurance, proprioception Educate patient with regards to any possible limitations
Brace/Crutch Use	<ul style="list-style-type: none"> Full weight bearing
Range of Motion	<ul style="list-style-type: none"> Maintain full knee range of motion
Strengthening	<ul style="list-style-type: none"> Maintenance program for strength and endurance with a gradual return to sports participation/work

All patients should consult with their operating surgeon on specific return to work/ return to play release.

For any questions about operative details or rehabilitation guidelines, please contact the respective surgeon's Athletic Trainer at the contact information found at this link: <https://med.virginia.edu/orthopaedic-surgery/orthopaedic-divisions/sports-medicine/protocols/>