



Advanced Orthopedic Specialists, P.C.

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ACL Reconstruction Rehabilitation Protocol

Please note, that for ACL reconstructions accompanied by meniscal repairs, follow restrictions for ROM and weight-bearing on flexed knee as indicated on Meniscal Repair Rehabilitation Protocol.

Therapy is generally the same for all types of ACL grafts used, except for return to high-demand sports.

WEIGHTBEARING AND AMBULATION: 50% WB with crutches until 7 days post-op. May wean from crutches and progress to FWB at 7-10 days post-op.

Brace is locked in extension from 0-2 weeks post-op for all ambulation and WB.

At 14 days post-op, may begin to open brace for ambulation and WB as quad strength allows; progress to fully open brace by 6 weeks post-op

1 to 3 DAYS

Pain Control	Cryotherapy, electrical stimulation, narcotics.
ROM	Passive knee extension (full, foot propped on pillows, extension lock brace). Passive knee flexion (0°-90°), Patellar mobilization.
Strengthening	Quadriceps and hamstring sets, straight leg raises, sidelying hip abduction, and prone extension exercises, ankle pumps, weight shifts.

4 To 14 DAYS

Pain Control	Continue cryotherapy, electrical stimulation (suggest dual channel e-stim activating hamstring group first then quadriceps), oral narcotic medication and NSAIDS as needed
ROM	CPM only if needed, passive knee extension (foot propped, prone hangs), Active-assisted knee extension (with assistance of contralateral leg), active knee extension (no resistance), passive and active knee flexion (0° -90°); patellar mobilization.

Strengthening Quadriceps and hamstring sets including co-contractions, straight leg raises (side-lying, prone, supine),
Standing hip abduction, adduction, and extension exercises, toe raises, ankle flexion/extension exercises.

2 TO 3 WEEKS

Pain Control Cryotherapy and/or electrical stimulation as needed; NSAIDs as needed

ROM Discontinue CPM, full passive extension (foot propped, prone hangs), passive flexion (0° - 115°), patellar mobilization

Strengthening Wall slides, calf raises, step-ups, leg presses, bilateral and unilateral knee bends, hamstring curls, stationary bicycle, PNF techniques

Ambulation Begin progression to normal gait pattern in brace (open hinges)

Comments Initiate proprioceptive training with BAPS, balance training.

3 TO 6 WEEKS

Pain Control Cryotherapy and/or electrical stimulation as needed; NSAIDs as needed

ROM Full passive extension, Passive (0°-120°), Patellar mobilization

Strengthening Wall slides, calf raises, step-ups, leg press, closed chain exercises (avoid flexion beyond 45° to protect patellofemoral joint), flexion to extension exercise (90° - 45°) - use anti-shear apparatus and/or proximal tibial contact, bilateral knee bends, hamstring curls, stationary bicycle, PNF technique.
Isokinetic parameters: initial concentric/eccentric hamstrings through available range; controlled isokinetic extension and flexion; hamstrings at 10° to 90° using slower speeds (more torque), quadriceps at 45° to 90° degrees at intermediate speeds (less torque) using anti-shear apparatus.

Ambulation Normal gait, brace (open)

Comments Continue proprioceptive training.

6 TO 12 WEEKS

Pain Control	Discontinue
ROM	Full active and passive (0° -130°)
Strengthening	Continue closed kinetic chain exercise program. Progressive resistance exercise program, mini squats, leg presses, stationary bicycle for endurance, stair climbing. Can begin swimming (avoid kicking at knee - train to kick from hip) and Nordic track at 10-12 weeks.
Ambulation	Discontinue brace for daily activity (per physician) at 8-12 weeks post-op. Patient <i>may</i> be given a sports brace for "high demand" activities - determination made on a case-by-case basis.
Comments	Continue proprioceptive training. The graft is weakest during this period! Avoid cutting, jumping, and pivoting.

LATE-STAGE POSTOPERATIVE ANTERIOR CRUCIATE LIGAMENT REHABILITATION

12 TO 16 WEEKS

Strengthening	Continue closed kinetic chain exercise program, knee extension exercises (90°-40°), jumping rope, swimming program, begin plyometric training.
Ambulation	Begin jogging program, elliptical trainer.
Skill Acquisition	Begin agility training (pattern running, figure eight's, lateral shuffles, backward running). Continue proprioceptive training
Comments	Isokinetic testing (12th week), If functional brace was provided it must be worn for agility and plyometric drills

16 TO 20 WEEKS

Strengthening	Continue closed kinetic chain exercise program, if no patellofemoral pain, can begin knee extension exercise (90° -0°) with limited weight, progress with plyometric program, begin isokinetic training for endurance
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Ambulation	Progress with jogging program to running program, begin sprints as running program improves.
Skill Acquisition	Progress with agility training (cariocas), sport- specific training and drills
Comments	Knee arthrometer testing (at approximately 20 weeks)

>20 WEEKS

Strengthening	Continue strengthening program, continue plyometric program
Ambulation	Continue running program
Skill Acquisition	Continue agility program. Cutting program (figure 8 patterns over large displacement progressing to smaller displacement, lateral shuffle, 45 degree cuts to 60 degree cuts to 90 degree cuts, cariocas). Jumping program (mini-trampoline, hop on involved leg, sport cord side to side hop, bilateral side to side hop).

Return to Sport (unlimited activity)

Criteria for return Isokinetic testing at 85% or better, functional testing.

General timelines:

Bone-Tendon-Bone	5-6 months
Quadriceps Tendon	5-6 months
Hamstrings	6 months
Allograft	7-8 months