

ACL Reconstruction

Pre-operative Rehabilitation

Some patients will attend therapy prior to ACL reconstruction in an effort to minimize swelling, achieve full knee and patellar range of motion, to improve gait, and normalize quadriceps dysfunction that results from the injury. During that course of therapy, the patient can be educated on early ROM exercises that can be done post-operatively.

Post-Operative Instructions and Precautions

1. Immediately post-op the patient is placed in a TROM brace and locked in full extension in most cases
2. Cryocuff / ice
3. WBAT(*unless meniscal repair or microfracture) with the brace on and locked
4. The brace can be removed when seated or supine, but is to be on a locked anytime the patient is up
5. May take down dressing and shower post-op day 3; no soaking or bath
6. Wear your brace and use your crutches as instructed- crutches may be d/c when the patient can do a SLR in the brace and hold it for 10 seconds
7. First post-op appointment is between 5-7 days; ideally, PT begins immediately following the post-op visit or sooner in some cases
8. Pain, swelling and limping are the guidelines to indicate that the patient is doing too much and needs to back off. Teach the patient to adhere to these symptoms when progressing activities and exercises

Phase I-- Weeks 1-4

1. Patient education regarding precautions, brace and crutch use, icing, wound care etc.
2. Ranging of motion is the primary focus in the phase- it is unrestricted unless the meniscus was repaired. With a meniscus repair, restrict flexion to 90 for the first 4 weeks to avoid loading the posterior horn.
3. Gait training
4. Pain and inflammation control
5. Graft protection
6. Exercise and therapy activities:
 - Quad sets
 - Heel slides, wall slides, AROM for knee flexion and extension
 - Prone hangs

- Straight leg raises
- Isometrics with biofeedback or NMES
- crutch /gait training- in therapy practice without brace when quad control is sufficient- teach proper heel-toe pattern
- Begin closed and open chain strengthening as the phase progresses including but not limited to:
 - toe/heel raises, stationary bike, stairmaster, leg press or total gym, hamstring curls (avoid for hamstring grafts for the 1st 4-6 weeks), hip extension/abduction/adduction and unilateral and bilateral balance and proprioception training

Phase II-- Weeks 5-8

Dr. Branam sees the patient back at 4 weeks post-op and expects that by that time they will be off the crutches and have nearly normal ROM—**especially full extension**. There should be no reason to have an extension lag due to the brace wear in a locked position of extension.

Patients can typically have their brace unlocked at this time if progressing as expected.

The goal is not to be able to determine a difference between the operative and “normal” leg if the patient is ambulating and wearing long pants i.e. no limp. Patients can d/c TROM brace and go into a hinged knee sleeve if they are progressing as expected.

1. Continue balance and proprioception activities
2. Maintenance of ROM
3. Continue development of strength and endurance
4. Graft protection
5. Physical therapy activities:
 - Proprioceptive activities on a mini-tramp or other unstable surfaces as appropriate
 - Continue quad strengthening 0-90 only until after 8 week point
 - Therapy mostly remains the same as toward the end phase I

*Remind the patient of the most importance of doing the exercises 5-6 days/week and not just while they are in physical therapy. Also, tell them that rehab after an ACL reconstruction is aimed at developing quad strength as it shuts down with the injury and surgery.

Phase III-- Weeks 8-12

*If the patient does not have full ROM at the 8 week point, they are very much behind and aggressive measures need to be taken to restore it.

1. Progression of quadriceps strengthening at 8 weeks and beyond
 - Elliptical and stairmaster
 - Half squats, lunges (progress to unstable surfaces)
 - Step ups (increase speed in forward and lateral planes as strength improves)
 - Unilateral eccentric leg press

Phase IV-- Weeks 12- 4 to 5 months

Patients are seen back in the office around 3 months post-op and if all is well, they may start jogging in a controlled environment.

At 4-5 months, they can do some more sport specific exercise dependent upon what they are returning to.

1. Progress to jogging
2. Maintenance of knee ROM, muscle strength and endurance
3. Progress balance and proprioception
4. Begin light sports related activities
5. Physical therapy activities include:
 - Light cutting (figure 8's, lateral slides and crossover drills)
 - Progress from rapid walking to light straight jogging to jogging with acceleration/deceleration patterns (usually around 4-5 months)
 - Continue with lower extremity strength and endurance building
 - Biodex testing done at 6 months if any questions about return to sport