

Northeast Orthopaedics & Sports Medicine

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orthopaedic care



Orthopaedic Surgery - Arthroscopic Surgery - Joint Replacement - Sports Medicine - Fracture Care

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ACL Reconstruction Postoperative Protocol: BTB and Hamstring

Patient Name: _____

DOS: _____

Please call with questions:

[ACL Reconstruction with *Meniscal Repair*:

- PWB (50%) with brace (→→→→→→→→→→)
locked in **extension** for 4-6 weeks
 - restrict NWB flexion to $< 90^\circ$



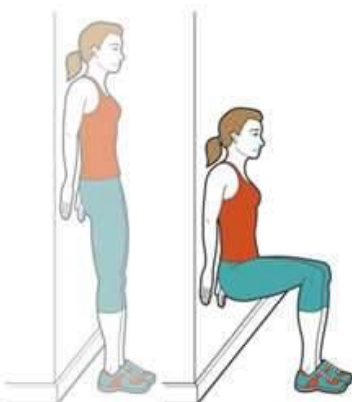
PHASE I - 1-4 weeks:

Goals: Quad activation, control effusion, early ROM, normalize gait, single leg balance [SLB] 30 sec.

WBAT with crutches, brace locked in extension until good quad control.

Exercises

- Patellar mobilizations
- ROM:
 - Flexion:
 - ←picture← Wall slides [0-30 degrees until wk 3]
 - heel slides
 - stationary bike.
 - Extension: Prone hangs, heel sags if not equal to opposite



- Strengthening:
 - Quad/Ham/Glut sets
 - Straight Leg Raises x4
 - Toe-raises
 - Assisted squats
 - Hip & core strengthening
 - Leg-curls [as tolerated with hamstring graft]
- Stretching: Calves, hams (no quad stretch)
- Function:
 - SLB (eyes open/closed) →→→→→
 - weight shifting all planes
- Gait:
 - Gait training with brace
 - progress to without crutches (fwd, bwd, side-step, high knees, step-overs)
- Modalities:
 - ES for quad activation as needed
 - Ice
 - IFC
- Aquatics: Address problem areas [if wound healed, contact doc with wound issues]



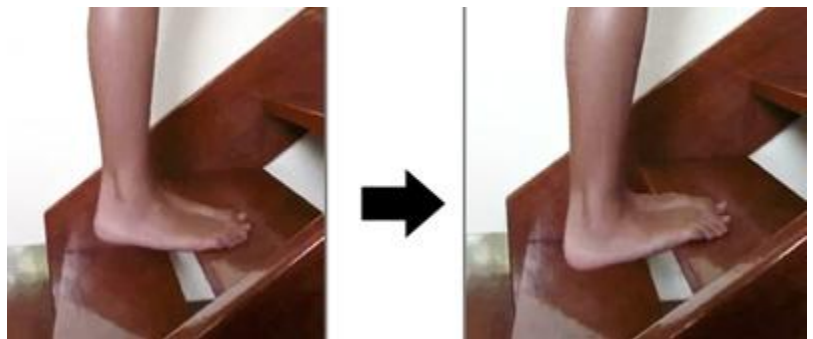
Phase II - 2-6 weeks:

Goals: FWB without assistive device, no gait deviations AROM equal to opposite

Exercises

- ROM:
 - Flexion: Heel slides, stationary bike, wall slides [0-60 degrees]
 - Extension: heel sags →

***Add weight to prone hangs if ROM not equal to opposite side ↓



- Strengthening:
 - SLR's x4 [add weight if no extensor lag]
 - assisted squats/ wall squats
 - bilateral leg press [0-60 degrees] / shuttle
 - hip and core strengthening
 - SL toe raises
- Hamstring only:
Add isotonic hamstring curls at week 4
- Proprioceptive Exercises:
 - Dynamic SLB
 - standing Biomechanical Ankle Platform System [BAPS]
 - SLB reach progressing below waist level
 - *avoid rotation*
- CV conditioning:
 - Stationary bike [high seat/low resistance initially]
 - treadmill walking forward and backward
 - Stairmaster after week 4
- Aquatics: Address problem areas **[if wound healed, contact doctor with wound issues]**



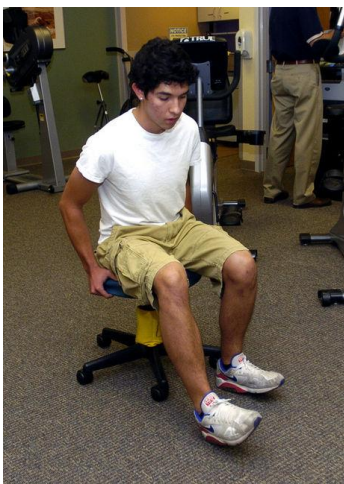
- Function:
 - Single leg step and squat
 - ← side-step with tubing
 - forward step-ups
 - medial step-downs
- Gait: On land or in pool as needed, all directions

Phase III Progressive Rehabilitation- 6-12 weeks:

Goals: No PF symptoms, increase eccentric neuromuscular control to allow acceptance of impact activities, full ROM

Exercises

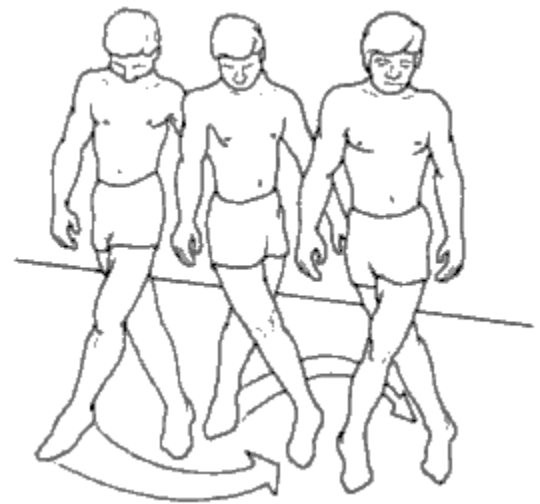
- ROM: PROM or bike with low seat, if not meeting flexion goals, at 6 weeks may add quad stretch with belt
 - Strengthening: Advance as appropriate
 - Add unilateral leg press
 - and/or shuttle if not doing so already
 - Hip and core strengthening
 - Leg extension 90°-40° if needed, single leg wall squats.
 - ↓ Stool scoots or MRE hams to increase ham strength.
 - Proprioceptive Exercises:



- Progress as tolerated on gradually less stable surfaces, eyes closed, perturbation training, sport-specific exercises, etc.
 *****Avoid rotation.*****
- CV Conditioning:
 - Stationary bike or in pool, treadmill walking, Stairmaster. Elliptical after 6 weeks
- Functional exercises:
 - Progress step-ups medial step-downs
 - Progress to multi- plane strengthening and functional exercises
 - Forward, side, retro lunges, medial rotation lunges at 8-10 weeks
 - Single leg squat
 - Pre-jump exercises (side jumps, calf jumps)
 - Single leg wall squats, slide board, sport cord.

8-10 weeks:

- Begin walk/jog program
- Carioca →
- Side shuffle
- High knee skipping
- Jump rope
- Functional knee class if >70% pre-op scores. +/- functional brace



Phase IV- Return to Full Function: 10-16 weeks

*****Progress to Phase IV when Phase IV goals met and MD approval*****

Goal: Running/cutting without a limp

Exercises:

- Plyometric Exercises:
 - Start with two leg jumping on level surface
 - [Head up, Land soft, flexed knees, knees pointing straight ahead]
 - AP, ML, box, horseshoe patterns
- Ice skater
- Progress to single leg hopping program with good technique
 - (if can single leg press body weight)
- Running: Gradually progress program, add cutting, turns
- Strengthening:
 - Open chain knee extension full ROM if needed →



- Continue hip and core strengthening
- Function:
 - Progress difficulty of lunges
 - Sport specific balance
 - Agility and functional strengthening activities
- Proprioceptive Exercises: Progress difficulty; sport specific
- CV Conditioning: Continue as previous

Physical Performance Testing

****when requested by physician****

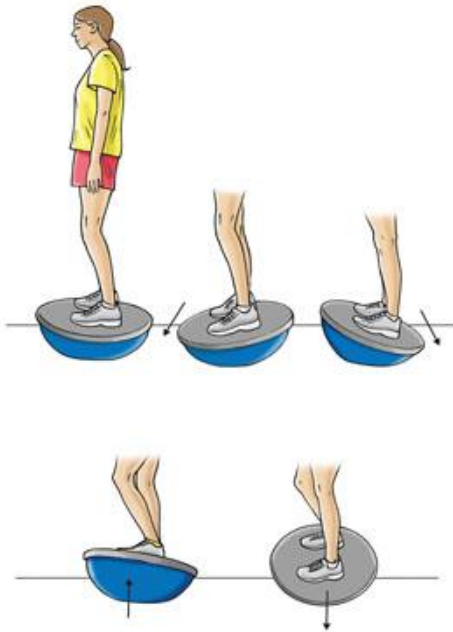
Pre-operatively

- KT-1000 Arthrometry: bilateral
- Biodex of uninvolved LE: 6 reps at 60° and 180° per second
- Single leg balance reach of uninvolved LE, best of 3 attempts
- Single leg hop for distance of uninvolved LE, best of 3 attempts
- Range of motion of uninvolved LE

4 months Post-Operatively

- KT-1000 Arthrometry: bilateral
- Biodex bilateral LEs: 6 reps at 60° and 180° per second: should be > 85% to return to sport
- Single leg balance reach of surgical leg(s), best of 3 attempts: should be > 85% to return to sport
- Range of motion of the surgical leg

Anterior Cruciate Ligament (ACL) Injury Rehabilitation Exercises



Wobble board exercise: A



Wobble board exercise: B



Wobble board exercise: C



Wobble board exercise: D



Wobble board exercise: E

Anterior Cruciate Ligament (ACL) Injury Rehabilitation Exercises



Heel slide



Quad Sets



Passive knee extension



Wall squat with a ball



Balance and reach exercise A



Balance and reach exercise B



Knee stabilization: A



Knee stabilization: B



Knee stabilization: C



Knee stabilization: D



Resisted terminal knee extension