ROCKFORD ORTHOPEDIC
CRYSTAL LAKE ORTHOPEDICS
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ACL Reconstruction

(patellar tendon, hamstring, or allografts)

Precautions –

Revision ACL Reconstructions

Per specific physician recommendation, follow protocol until 12 weeks, then extend weeks 12 to 16 through to 5- to 6-month timeline, when patients can then begin running and progress to functional sports activities.

Meniscus Repair

If a meniscus repair was performed the patient is to remain foot flat (25%) weightbearing until 4 weeks.

Phase I (1 – 10 days post-op)

- Wound care: Observe for signs of infection. OK to remove dressing on post-operative day 5 and begin showering. Keep covered until day 5. Cover incision with gauze and ace wrap.
- Weight Bearing: Weight bearing as tolerated with the brace locked in extension. If a meniscus repair was performed, then foot flat (25%) weight bearing until week 4.
- Modalities: prn for pain and inflammation (ice, IFC)
- Brace: Immobilizer or brace if prescribed (hinged brace locked in full extension) To be worn at all times including when sleeping.
- ROM: Goal: Minimum 0 – 90 degrees, not more than 120 degrees
    - Passive positional stretches for extension and flexion
    - Ankle AROM

Phase II (10 days – 4 weeks post-op)

- Wound care: Observe for signs of infection and begin scar management techniques when incision is closed. OK to remove dressing on post-operative day 5 and begin showering. Keep covered until day 5. Cover incision with gauze and ace wrap.
- Weight Bearing: Weight bearing as tolerated with the brace unlocked. If a meniscus repair was performed, then foot flat (25%) weight bearing until week 4 with the brace unlocked.
- Brace: Hinged brace set 0 – 120 and unlocked for ambulation. On at all times except in PT clinic. Discontinue brace use at night.
- ROM: Goal: Minimum 0 – 90 degrees, not more than 120 degrees until 3 weeks, then gradually to full AROM.
    - Passive positional stretches and AROM for extension and flexion
    - Half revolutions on stationary bike and progress to full revolutions
    - Increase / maintain patellar mobility with emphasis on superior glide

- Strengthening:
    - No resisted open chain strengthening
    - Quad sets (open and closed chain multi angle)
    - SLR (eliminate extensor lag)
    - Emphasize closed chain activities for strengthening (step ups, light leg press etc.)
    - Proprioceptive activities added as soon as quad control allows.
    - Balance board bilateral in multiple planes
    - Single-leg balance eyes open/closed, variable surfaces
- Modalities:
    - NMES to quads if unable to perform quad sets and extensor lag with SLR
    - IFC and ice for pain and edema prn
    - sEMG neuromuscular re-education for quad sets
- Conditioning
    - Upper Body Cycle
    - Stationary bike with gradual progressive resistance

Phase III (4 – 8 weeks post-op)

- Wound care: Continue scar mobs
- Brace: Gradually discontinue brace from week 4 to 6
- ROM:
    - Emphasize full extension
    - Full flexion by end of 8 weeks
    - Patellar mobility
    - Rectus femoris/ hip flexor stretches
- Strengthening:
    - Continue Phase II, adding resistance as tolerated
    - Stationary bike: increase resistance and some light intervals
    - Squats/leg press: bilateral to unilateral (0–60 degrees) with progressive resistance
    - Lunges (0–60 degrees)
    - Stairs: concentric and eccentric (not to exceed 60 degrees of knee flexion)
    - Calf raises: bilateral to unilateral
    - Rotational stability exercises: static lunge with lateral pulley repetitions
    - Sport cord resisted walking all four directions
    - Treadmill walking all four directions
    - Balance board: multiple planes, bilateral stance
    - Ball toss to mini-tramp or wall in single-leg stance
    - Core strengthening: supine and prone bridging, standing with pulleys
    - Gait activities: cone obstacle courses at walking speeds in multiple planes
- Modalities:
    - Continue E-stim for re-ed or edema
    - sEMG to continue (for balance of VL to VMO or overall contraction)
    - Continue ice and IFC prn
- Conditioning:
    - Stepper (retro and / or forward)
    - Stationary bike
    - UBC
    - Pool if available
- Gait: Normalize gait pattern on level surfaces and progress to step-over-step pattern on stairs

Phase IV (8 - 12 weeks post-op)

- Wound care: Continue scar mobs
- ROM: Full ROM
- Strengthening:
    - Increase weights and reps of previous exercises
    - Squats/leg press: bilateral to unilateral (0–60 degrees) progressive resistance
    - Lunges (0–60 degrees)
    - Calf raises: bilateral to unilateral
    - Advance hamstring strengthening
    - Core strengthening
    - Combine strength and balance (e.g., ball toss to trampoline on balance board, mini-squat on balance board, Sport Cord cone weaves, contrakicks)
    - Advanced balance exercises (e.g., single-leg stance while reaching to cones on floor with hands or opposite foot, single-leg stance while pulling band laterally)
    - Lap swimming generally fine with exception of breaststroke; caution with deep squat push-off and no use of fins yet
    - Stationary bike intervals
- Modalities: continue prn

Phase V (12 – 16 weeks)

- Important – Focus on correct technique
    - Landing during exercises at low knee flexion angles (too close to extension)
    - Landing during exercises with genu varum/valgum (watch for dynamic valgus of knee and correct)
    - Landing and jumping with uninvolved limb dominating effort
- Exercises
    - Elliptical trainer: forward and backward
    - Perturbation training*: balance board, roller board, roller board with platform
    - Shuttle jumping: bilateral to alternating to unilateral, emphasis on landing form
    - Mini-tramp bouncing: bilateral to alternating to unilateral, emphasis on landing form
    - Jogging in place with sport cord: pulling from variable directions
    - Movement speed increases for all exercises
    - Slide board exercises
    - Aqua jogging

Phase VI (16 – 24 weeks)

- Exercises
    - Progressive running program
        - Always begin with warmup on the stationary bike or elliptical for >10 minutes prior to initiation of running.
        - Patient should have no knee pain following run.
        - Week 1: Run: walk 30 seconds: 90 seconds every other day (qod) (10–15 minutes)
        - Week 2: Run: walk 60:60 qod (10–20 minutes)
        - Week 3: Run: walk 90:30 qod (15–20 minutes)
        - Week 4: Run: walk 90:30 3-4x/week (20–25 minutes)
        - Week 5: Run continuously 15–20 minutes 3–5x/week
    - Hop testing and training
        - Single-leg hop for distance: 80% minimum compared to nonsurgical side for

running, 90% minimum for return to sport
        - Single-leg triple hop for distance: 80% for running, 90% for return to sport
        - Triple crossover hop for distance: 80% for running, 90% for return to sport
        - Timed 10-m single-leg hop: 80% for running, 90% for return to sport
        - Timed vertical hop test: 60 seconds with good form and steady rhythm considered passing
    - Vertical, horizontal jumping from double to single leg
    - Progressive plyometrics (e.g., box jumps, bounding, standing jumps, jumps in place, depth jumps, squat jumps, scissor jumps, jumping over barriers, skipping)
    - Speed and agility drills (e.g., T-test, line drills) (make these similar in movement to specific sport of athlete).
    - Cutting drills begin week 20
    - Progress to sport-specific drills week 20
    - Return to Sport at 6 months

Adapted From
1) Brotzman SB, Manske RC. Clinical Orthopedic Rehabilitation. 3rd Ed. Elsevier; 2011.