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ORTHOPEDIC SURGERY AND SPORTS MEDICINE

ACL Reconstruction Rehab **All grafts and with/without meniscal repair**

Rehabilitation Precautions

- Weight Bearing as tolerated without antalgic gait
- No resistive hamstring exercises for 8 weeks with hamstring autograft
- Delay guideline by two weeks if meniscal repair performed

- **Progression is time and criterion-based, dependent on soft tissue healing, patient demographics, and clinician evaluation**

(Post-operative-2weeks)

- **ROM**
 - Begin active-assisted ROM (no forced flexion beyond 90° with meniscal repairs)
 - Patellar mobilization
 - Edema control
- **Strengthening**
 - Neuromuscular re-ed with stim and/or biofeedback if less than good quad set
 - Quad Sets, HS sets, add sets, glut sets, SAQ, SLR, SLR with ER, clam shells
 - Relax quad between reps to improve quality of quad contraction
- **Goals to Progress to Next Phase**
 1. Good quad set
 2. ROM 0-90 degrees
 3. 20 SLR with minimal to no extensor lag
 4. Minimal to no edema

(Week 2-4)

- **ROM**
 - Begin ROM progression from active-assisted to active (no forced flexion beyond 90° with meniscal repairs)
 - Patellar mobilization
 - Edema control
 - Bike: Begin with ½ and progress to full revs per ROM precautions
- **Strengthening**
 - Neuromuscular re-ed with stim and/or biofeedback if warranted
 - Weightbearing exercises
 - Theraband terminal ex, hip 4-way, resisted knee flex
 - Single leg balance with contralateral leg multidirectional
 - SLR (multi-directional) without extensor lag
 - Heel/toe raises
 - PWB bilateral to single-leg squats per tolerance and good mechanics
- **Goals to Progress to Next Phase**
 1. No antalgic gait without use of assistive device
 2. Good quad set
 3. Able to stand on single-leg with moderate-good balance

4. No exacerbation with PWB strengthening

(Week 4-6)

- **ROM**
 - Continue as before (no forces flexion beyond 90°)
 - Exercise bike full revolutions for ROM and endurance
- **Strength**
 - Multi-angle straight leg raises
 - Resisted side stepping
 - Step-ups progressed to step downs (heel touch)
 - Lunges in protected range
 - Progress PWB (aquatics, Total Gym, etc) strengthening – no jogging or single-leg plyos
 - Mini-Squats on BOSU with UE assist if needed
 - Gait training if antalgic
 - Begin trunk and lumbosacral strengthening
- **Goals to Progress to Next Phase**
 1. Normal quad set and gait
 2. AAROM 0-120°
 3. No reactive effusion
 4. Completion of exercises without exacerbation of symptoms
 5. Complete reciprocal stair climbing

(Week 6-8)

- **ROM**
 - Continued with emphasis on terminal extension and pain-free flexion
 - Exercise bike for endurance
- **Strength**
 - Progress WB strengthening/stability/balance/proprioception exercise
 - Lunges, side-stepping, leg press, step up/down, etc
 - Begin sub-maximal leg extensions in protected range (see precautions above)
 - Step downs (provide verbal and visual feedback for proper technique)
 - Begin with bilateral and progress to unilateral
 - Begin with 2” and progress step height per mechanics
 - No plyometric training
 - Continue to progress lumbosacral strengthening
- **Goals**
 1. Increased strength/stability/proprioception with therapeutic exercise without exacerbation of symptoms
 2. No reactive instability or effusion with WB activity

(Week 8-10)

- **ROM**
 - Continue with exercise bike and stretching
- **Strength**
 - Initiate isolated hamstring strengthening per tolerance
 - Initiate jogging
 - Progress LE and trunk strength and stability exercises
 - Progress step downs from 2-4” height
 - Emphasis on appropriate mechanics/avoid dynamic valgus

(Weeks 10-12)

- **ROM**
 - Continue per tolerance and pre-exercise warm-up
- **Strength**
 - Full weight bearing plyometrics
 - Progress from straight-plane to diagonal/rotation exercise
 - Strength progression stable to unstable surface

- Emphasis on quad, hamstring and trunk dynamic stability
- **Goals to Progress to Next Phase**
 1. Complete plyometric/jogging activity without pain or dynamic instability
 2. No reactive effusion
 3. ROM 0-135 degrees
 - Begin agility exercises between 50-75% (utilize visual feedback to improve mechanics)
 - Side shuffling
 - Hopping
 - Carioca
 - Figure 8
 - Zig-Zag
 - Resisted jogging(Sports Cord) in straight planes, etc

(Weeks 12-16)

- **ROM**
 - Continue per tolerance and pre-exercise warm up
- **Strength**
 - Emphasis on quad, hamstring and trunk dynamic stability
 - Continue jogging progression
 - FWB Plyometrics
 - May begin single leg if no reactive instability
 - Progress agility exercises between 75%-100% (utilize visual feedback to improve mechanics) – See above
- **Goals to Progress to Next Phase**
 1. **Functional Test**
 - Single –leg and 3 cross-over hop test for distance (within 15% of uninvolved limb)
 2. Complete sport specific drills without exacerbation of symptoms or reactive instability

(4-6 Months) – Sports Specific Training

- **This sports specific phase should transition from the rehab specialist in the clinic to athletic trainer in the field as appropriate**
- **Strength**
 - Emphasis on quad, hamstring and trunk dynamic stability
 - Continue sport-specific agility exercises (utilize visual feedback to improve mechanics) – See above
 - Progress gradually to 100% per tolerance
 - Emphasis on power and change of direction
 - Utilize both indoor and outdoor surfaces
- **Goals to Return to Sport**
 - Physician clearance at 6 month check up (not required if pt doing well)
 - Symmetry with functional testing (3 single-leg cross-over, etc)
 - No reactive effusion or instability with sport-specific activity
 - Complete Return to Sport Class and pass Return to Sport Test