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## Hip Arthroscopy Protocol

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The following protocol utilizes a blend of both criteria and timeframes as the determinants for advancement. It is recognized that many patients will be pain free relatively early in their rehabilitation and want to advance to higher level activities as a result. In spite of rapid functional progress, it is important to respect the biological healing component of recovery and limit advancement if the timeframe for a given stage has not been completed. Overall, this protocol suggests a gradual return to impact and sport activities beginning between 4-6 months once all criteria are met.

### Weeks 0 to 3: (Initial PT evaluation scheduled to begin within 2 weeks following surgery)

#### Precautions:

- ROM restrictions (**3 weeks**):
  - Limit hip flexion to 90°
  - Limit hip abduction to 30°
  - Limit hip extension to 0°
  - Limit hip external rotation (ER) to 0° in extension
  - Limit hip external rotation (ER) to 30° at 90° flexion
  - Limit hip internal rotation (IR) to 20° at 90° flexion
  - No restrictions for hip internal rotation (IR) in neutral extension
- Weight-bearing:
  - 25% foot flat weight bearing (FFWB) on involved LE for 3 weeks
    - If microfracture performed, then 25% FFWB for **6 weeks**
  - Avoid NWB and TTWB to minimize risk of hip flexor tendonitis or contracture
- No sitting > 30 minutes
- Sleep with pillow under knee
- No anti-gravity hip flexion for 4 weeks (no SLR)
- Brace use: If advised, use hip abduction brace based on surgeon's recommendations

#### Goals:

- Protect integrity of repaired tissue
- Reduce pain and inflammation
- Increase hip range of motion within restrictions
- Prevent muscular inhibition
- Avoid hip flexor contracture

#### Interventions:

- Ice: 15 minutes, 5 times per day
- PROM/AAROM/ Flexibility (caution to maintain hip ROM precautions as noted above)
  - If a CPM is available: begin at 30-70° and increase 10° per day to 0-90° as tolerated (not exceeding 90° of motion)
  - Lie flat on stomach for a total of 2 hours per day (Do not prop up on elbows)
    - May have to gradually work up to lying flat, can start with 1 pillow

- Stationary bike without resistance (seat elevated to avoid hip flexion >90°)
  - May start light resistance week 2
- Heel Slides
- Passive ROM/stretching:
  - Opposite knee to chest stretch
  - Prone quad stretch
  - Supine hamstring stretch (within hip flexion ROM precautions)
  - Supine gastroc stretch
- Strength
  - Quad/glute max/hamstrings/adductor isometrics
  - Resisted ankle pumps
  - Core stabilization
  - Prone hamstring curls
  - Short arc quads
- Soft tissue mobilization as needed to decrease scar tissue adhesions and prevent contractures
- Daily Home Exercise Program

### **Weeks 3 to 6:**

#### **Precautions:**

- ROM restrictions removed at 3 weeks (unless otherwise specified by surgeon)
- No antigravity hip flexion until at least 4 weeks post-op (no SLR)
- Weight-bearing: 25% FFWB → WBAT at 3 weeks post-op
- Brace use: If advised to use hip abduction brace, plan to wean by 4 weeks
- Avoid quick/ballistic movements and impact loading (no running/jumping until permitted)

#### **Goals:**

- Protect integrity of repaired tissue
- Normalize gait pattern
  - Gradually wean to single crutch and then discontinue crutches once pain free and no gait compensations present
- Minimize Pain and Inflammation
  - Monitor for hip flexor tendinitis/contracture
- Gradually restore normal hip range of motion
- Increase muscle strength

#### **Interventions:**

- Continue previous exercises as needed
- Gait training
- PROM/AAROM/Flexibility:
  - Hip flexor stretching
  - Hip ER/IR (hip extended and flexed)
  - Hamstring, quad and ITB stretching as needed
  - Stationary bike
- Strength
  - Isometric hip abduction/external rotation
  - Seated resisted knee extension
  - Hamstring curls (seated or prone)
  - Double leg mini squats
  - Heel raises
  - Quadruped → prone hip extension

- Supine → Side lying hip abduction
- Clams and reverse clams
- Lateral band walks
- Supine marching → SLR (start at week 4)
- Core stability progression
- Gait Training
  - Focus on decreasing Trendelenburg, compensated Trendelenburg, trunk shift, hip circumduction, etc. prior to discontinuing crutches
- Aquatics (as available, if surgical incision has healed): patients may begin walking (forward/backward, sidestepping) and standing therapeutic exercises
- Soft tissue mobilization to decrease scar tissue adhesions and prevent contractures
- Daily Home Exercise Program

### **Weeks 6 to 12:**

#### **Precautions:**

- Avoid weight bearing hip rotational activities until week 10
- No running or jumping until at least 3 months post-op (criteria below must be met)
- Avoid forceful or ballistic stretching

#### **Goals:**

- Pain-free and symmetrical gait pattern
- Achieve full pain free hip range of motion
- Restore muscle strength and endurance
- Optimize neuromuscular control

#### **Interventions:**

- Continue previous ROM/flexibility and strength exercises as necessary
  - Joint mobilizations and soft tissue mobilization as needed to restore normal hip ROM
- Cardiovascular endurance: Stationary bike, elliptical (forward and backward), stair climber, fast paced walking, swimming (no breaststroke), and aquatic running if available (no sooner than 12 weeks)
- Lateral hip strengthening with resistance (clamshells, fire-hydrants, lateral band walks, etc.)
- Functional Strengthening (bilateral → unilateral squats and bridges, lunges (forward → lateral), lateral step-downs, step-ups, deadlifts, single-leg RDL, etc.)
  - Add resistance/weights once able to control body weight
- Weight machines (bilateral → unilateral leg press, knee extension, hamstring curls, hip abductor and adductor machine, etc.)
- Balance/proprioception (static/dynamic, unstable surfaces, varying head movements and/or cognitive tasks)
- Core/pelvic stabilization (static, neutral spine → dynamic, functional movements, multiple planes of movement)
- Daily home exercise program

### **CRITERIA TO ADVANCE TO IMPACT ACTIVITIES – 3-4 month assessment**

- **Surgeon clearance** (assessment to be completed at CHOP sports PT location prior to surgeon office visit)
- **Full hip ROM**
- **Hip Strength** – using dynamometer
  - Hip Flexor  $\geq$  60% limb symmetry
  - All other directions  $\geq$  70% limb symmetry
- **Isokinetic strength testing** - Quadriceps and hamstring peak torque and total work  $\leq$  30% deficit at 180°/sec
- **Lateral step-down test (Set step height to achieve ~60° knee flexion):**  $\leq$  3/6 errors
- **Y balance test (anterior reach only):**  $\leq$  4 cm difference as compared to uninvolved

### **Months 3 to 6:**

#### **Goals:**

- Initiate return to running progression once above criteria have been met
- Gradually initiate plyometrics
- Gradually advance to agility training with proper mechanics
- Cardiovascular endurance equal to pre-injury levels
- Improve neuromuscular control and dynamic stability
- Improve muscular strength, power and endurance
- Begin gradual and progressive sport specific activities
- Promote sport specific fitness and prepare athlete for return to sport progression

#### **Interventions:**

- Advanced lower extremity/core strength and balance/proprioception exercises
- Running Progression
  - Gradually advance with straight ahead running on level surfaces/treadmill
  - Focus on a pain free and symmetrical gait pattern
  - Minimize pelvic drop
- Plyometric Progression
  - Begin with double leg jumps at 50% intensity, focusing on soft/symmetrical landings
  - Progress double leg jumps (height / distance, multiple jumps in same direction, varying surfaces, hopping over/onto objects)
  - Advance to single leg jumps/hops once patient demonstrates good and symmetrical neuromuscular control with all double leg jumping and single leg squats (progress to multi directional when appropriate)
- Sport specific cutting/pivoting drills
- High intensity aerobic/anaerobic training (progress resistance, speed, duration)
- Focus on demonstrating good tolerance for individual non-contact sport specific activities without asymmetrical movement patterns.
- Educate on final home exercise program and injury prevention program
- Gradually advance back to sport/full activity at 6 months post-op once below criteria are met

**CRITERIA FOR RETURN TO SPORT/FULL ACTIVITY – 6 month assessment**

- **Surgeon clearance** (assessment to be completed at CHOP sports PT location prior to surgeon office visit)
- **Hip strength** -  $\geq 85\%$  limb symmetry with dynamometer strength testing in all directions
- **Lateral step-down test (Set step height to achieve  $\sim 60^\circ$  knee flexion):**  $\leq 2$  errors
- **Y balance test (all directions):**
  - Composite score  $\geq 90\%$  (each side)
  - $\leq 4$  cm difference for anterior reach,  $\leq 6$  cm difference for posteromedial and posterolateral reach as compared to uninvolved limb
- **Functional hop testing battery:**  $\geq 90\%$  limb symmetry, pain free and good neuromuscular control
- **Drop vertical jump using Landing Error Scoring System (LESS):**  $\leq 2$  errors
- **Tuck Jump Test:** Score  $< 6$  (if patient age and skill level appropriate)

**Once return to sport criteria are met, the patient will be advised to follow a specific and gradual return to sport progression program which will be provided by surgeon or physical therapist.**

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