Post-operative Rehabilitation Protocol

Hip Arthroscopy

General guidelines:
- Despite the minimally invasive nature of hip arthroscopy, significant work was performed inside the hip joint and time is required for the repaired structures to heal.
- A systematic approach to rehabilitation (generally under the guidance of a physical therapist with experience in hip rehab) is critical to ensuring optimal outcome.
- Each patient’s recovery highly individual and therapy protocol should be customized to the patient.
- The patient should meet with physical therapist prior to surgery for a functional assessment and to review the protocol.
- Formal physical therapy should start within 1 to 3 days after surgery.
- Progression through therapy phases is pain- and function-dependent, not time-dependent.
- Pushing the rehabilitation too quickly may aggravate the hip and delay recovery.
- Precautions:
  - Crutches and partial weight-bearing to protect repair for 4 to 8 weeks depending on procedure.
  - Avoid excessive external rotation and flexion (stresses repair).
  - Avoid early active hip flexion that can lead to hip flexor tendonitis.
  - Avoid advancing too rapidly through therapy protocol to prevent flare-ups.
  - No driving until permission from surgeon (usually around 4 weeks).
  - Medications help reduce risk of abnormal bone formation (heterotopic ossification) and blood clot (DVT or deep venous thrombosis).
- Early post-operative goals include reducing post-operative pain, swelling and inflammation while avoiding stiffness and improving motion.
- Late post-operative goals include restoring motion and strength, normalizing gait, and conditioning.
- Ultimate goal is to return to prior or desired level of activity after eradicating the structural or mechanical problem responsible for symptoms.
- The degree of hip damage may require careful consideration of modifying activities to reduce stress on the joint and prevent further problems.

Phase I (weeks 0 to 3)
- Goals:
  - Recover from surgery.
  - Protect repair.
  - Reduce post-operative pain, swelling, and inflammation.
  - Crutch training to unload hip while normalizing gait.
  - Prevent muscular inhibition.
  - Encourage mobility.
  - Promote wound healing (sutures out 10 to 14 days).
- Protected weight-bearing (50% of body weight):
  - Use two crutches to limit weight while stepping on the operative leg.
o maintain foot flat on the ground (reduces force in the hip joint)
• hip joint mobilization
• manual therapy
• scar massage
• modalities to reduce swelling and inflammation
• hip passive range of motion within post-op restrictions
  o no external rotation > neutral
  o no hip flexion > 90 degrees
  o other precautions depend on the procedure performed
• muscle activation
  o hip isometrics (glut, quad, and hamstring sets, abductor and adductor isometrics)
  o heel slides (active-assisted range of motion)
  o pelvic tilts
  o double legged supine bridge
  o seated knee extension
  o prone knee flexion
• standing exercises (keep knee straight)
  o abduction and adduction without resistance
  o flexion and extension without resistance
  o double heel rises
• standard stationary bike with high seat (to prevent hip flexion >90) with no resistance
• criteria to progress to phase II
  o minimal pain with phase I exercises
  o minimal limitations in range of motion (90 degrees of hip flexion with minimal pain)
  o normalized heel to toe gait with two crutches and partial weightbearing

**Phase II (weeks 4 to 6)**
• goals:
  o protect repair
  o increase range of motion
  o transition from crutches
  o normalize gait
  o progressively increase muscle strength
• transition from crutches at the 4 week mark
  o start with single crutch on opposite side from surgery, unload the operative hip during gait
  o may transition to no crutches once comfortable and no significant gait deviations
  o may continue to need crutches when planning to walk a distance or be on your feet for a longer time
• progress with hip range of motion
  o no external rotation > 20 degrees
  o no hip flexion > 105 degrees
  o prone hip rotations
• manual therapy
  o massage portal sites
  o hip joint mobilizations
  o deep tissue mobilization
  o pelvic and lumbar spine joint mobilizations
- desensitize irritable nerve distributions
- muscle activation
  - progress core strengthening
  - hip strengthening
    - hip flexor activation (careful with active/ resisted hip flexion to prevent inflammation)
    - clam shells
    - single-leg bridges
    - leg presses (minimal resistance)
    - weight-shifting
    - ¼ mini squats
    - quadruped superman
- muscle activation
- standing exercises
  - abduction and adduction with low resistance
  - flexion and extension with low resistance
- standard stationary bike – increase duration and resistance as tolerated
- pool therapy recommended after portals healed
  - decrease depth with each successive week (start at chest deep and progress to waist deep)
  - 4-direction walking
  - step-ups
- criteria to progress to phase III
  - minimal pain with phase II exercises
  - 105 degrees of hip flexion, 20 degrees of external rotation with minimal pain
  - pain free/ normal gait pattern
  - hip flexion strength >60% of opposite side
  - hip abduction/adduction strength, internal/external rotation strength >70% opposite side

Phase III (weeks 7 to 10)
- goals:
  - protect repair
  - normalize motion and strength
  - normalize gait
  - improve endurance and conditioning
  - improve neuromuscular control, balance, and proprioception
- normalize hip range of motion
  - no restrictions
  - symmetry with unaffected side
- manual therapy
  - massage portal sites
  - hip joint mobilizations
  - deep tissue mobilization
- hip strengthening
  - increase resistance with active exercises
  - clamshells with theraband
  - sidelying planks
  - physioball hamstring
  - side-stepping with resistance
  - lunges
• neuromuscular training  
  o core stabilization  
  o single leg balance  
  o side steps over cups  
  o step-ups with eccentric lowering  
  o Bosu squats
• standard stationary bike – continue to increase duration and resistance, lower seat to allow increasing hip flexion
• elliptical machine with minimal resistance
• may use treadmill walking program
• continue pool therapy, increase speed and duration, decrease depth
• criteria to progress to phase IV  
  o symmetrical range of motion  
  o hip flexion strength >70% of opposite side  
  o hip abduction/adduction strength, internal/external rotation strength >80% opposite side  
  o cardiovascular fitness returning to pre-operative level

Phase IV (weeks 11 to 14)
• goals:  
  o normalize function  
  o sports specific training  
  o prepare return to activity
• continue phase III exercises with progressive increase in intensity
• manual therapy as indicated
• core strengthening
• advance proprioceptive training
• start introducing low-impact plyometrics
• increase resistance and duration on bike and elliptical
• pool running
• swimming as tolerated
• sport-specific agility drills

Final phase (14 weeks & beyond)
• traditional weight-training
• increased intensity of plyometrics
• start running progression
• sport specific drills without pain
• cardiovascular fitness at or better than pre-operative level

Return to sports / activities
• full pain-free range of motion symmetrical to opposite side
• symmetrical hip strength
• stable pelvis
• ability to perform sport-specific drills at full speed without pain