

## Physical Therapy Protocol: Total Hip Arthroplasty

### Philosophy:

Total hip arthroplasty (THA) is an elective procedure to relieve pain and restore function to a joint with end-stage arthritis. Predictable results come only with good pre-operative planning and integrated patient participation in rehab. Physical therapy is important prior to undertaking surgery as well as throughout the recovery phase. Strict adherence to the initial range-of-motion restrictions is essential to prevent a hip dislocation, followed by a lifelong commitment to sensible hip positioning. Prevention of infection via antibiotic prophylaxis for all dental procedures is necessary. For posterior hip approaches, the following are guidelines for successful recovery from total hip arthroplasty.

### ***PHASE I, Surgery to 6 weeks Post-Op***

#### **Rehabilitation Goals:**

- Protection of the post-surgical hip through WBAT gait and education on ROM precautions (*posterior approach*: flexion  $<90^{\circ}$ , no internal rotation or adduction past midline)
- Restore hip ROM within the above precautions.
- Normalize gait with assistive device. Dependent upon previous functional level before THA, as well as patient progress post THA. Between post-operative weeks 3 and 6 most patients should be able to transition to 1 crutch or use of cane and begin walking short distances without assistive device. This needs to be useful, functional gait, non-antalgic Trendelenburg negative.
- Restore leg control: Patients should be able to perform repeated standing hip abduction on the affected side, and demonstrate fluent movement patterns while considering dislocation precautions
- Transition from narcotic pain meds to NSAIDs
- Prevent deep venous thrombosis via bilateral TED hose use during the day and anticoagulation per MD

#### **Precautions:**

- Use assistive device(s) for normal gait, WBAT unless otherwise specified by physician
- ROM should be regained mostly through active/active assistive movement exercises (within precautions). Passive forced stretching and joint mobilizations should be avoided secondary to potential for hip dislocation/subluxation
  - Maintain traditional THA precautions (no hip flexion greater than  $90^{\circ}$ , no hip IR or adduction past midline)
  - Abduction pillow between the legs while in bed x 6 weeks

- Encourage normal extension/stride with gait
- Limit passive extension and ER
- No yoga for 6 weeks post op

**ROM Exercises:**

- AAROM and gentle PROM of hip in all planes, within the ROM restrictions

**Suggested Therapeutic Exercise/Treatment:**

- Gait activities (marching, heel-toe rocking, sidestepping) – may utilize pool for gait activities once the suture sites are healed without drainage or scab (4 weeks post-operatively at earliest, unless otherwise indicated by the surgeon). Aquatic exercise/pool should be strongly considered if Trendelenburg is not improved by 6 weeks post-op.
- Isometric hip flexion, extension, abduction, adduction, internal rotation and external rotation
- Weight shifting – progressing to balance exercises
- Hip abduction, adduction, flexion, and extension active range of motion (AROM) without resistance. (With reduction in substitution patterns)
- Begin with short arc movements and progress to full arc
- Begin in gravity minimized positions and progress to anti-gravity positions (i.e., abduction in side-lying)
- Bridging, supine hip dangle, grade 1-2 hip mobilizations

**Cardiovascular Exercises:**

- Upper body circuit training or UBE if patient desires
- Treadmill, elliptical, Nordic Track

## ***PHASE II, 6-8 weeks***

**Rehabilitation Goals:**

- Regain muscular strength (focus on abduction)
- Progress off assistive device for all surfaces and distances, demonstrating normal gait pattern
- Single leg stance control
- Good control and no pain with functional movements, including step up/down, sit to stand, squat
- Functional progress with donning socks and garments

**Precautions:**

- Discontinue (D/C) crutch/cane when gait is normal and pain free. Do not encourage discontinuing device if pain or Trendelenburg remains
- Post-activity soreness should resolve within 24 hours
  - Continue to maintain traditional THA precautions based on each individual patient during this time period
  - Typically, precautions are lifted at 6 weeks
  - Patients should regain full functional AROM through active movements at controlled speeds. Avoid passive/forced movements
  - Begin with single plane, non-weight bearing movements. Avoid multi-planar weight bearing movements within the ROM restrictions until patient demonstrates good control with single plane movements

#### **Suggested Therapeutic Exercises:**

- Stationary bike (10-20 minutes)
- Transfer training to and from the ground
- ROM exercises to assist donning socks and LE garments
- Gait and functional movement drills
- Non-impact LE and core strengthening
- Non-impact balance and proprioception training
- Hip AROM with progression of resistance
- Progressive hip abduction strengthening is the focus of this phase
  - Standing/side-lying abduction exercises
  - Functional closed chain abduction strengthening
  - Aquatic pool exercises if Trendelenburg persists

#### **Cardiovascular Exercises:**

- Lo-impact endurance training; stationary bike, Nordic track, flutter kick with kickboard, deep water run, elliptical

#### **Progression Criteria:**

- Achievement of goals above

## ***PHASE III, 9-12 weeks***

#### **Rehabilitation Goals:**

- Improve muscular strength and endurance
- Good control and no pain with all activities of daily living (ADL) as well as work specific movements.
- Able to walk longer distances (1 mile) without a limp



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### **Precautions:**

- Post-activity soreness should resolve within 24 hours
- No impact activities (running and jumping are **highly** discouraged).
- Use of sensible hip positioning

### **Suggested Therapeutic Exercise:**

- Strength and balance exercises with progression from double leg to single leg and single plane drills to multi-plane drills
- Dynamic control exercise beginning with low velocity, single plane activities and progressing to higher velocity, multi-plane activities
- Continue ROM/stretching towards (and potentially above) 90 degrees flexion with ER for those patients who are allowed to exceed this for shoe and sock donning
- Advance aerobic training as tolerated (walking, swimming, golf, hiking, Stairmaster, weight training, elliptical trainer). Experienced cross-country skiing, doubles tennis, bicycle and downhill skiing allowed.
- Antibiotic prophylaxis for any dental procedures.
- A lifelong commitment to exercise is encouraged for the continued successful joint arthroplasty.

### **Cardiovascular Exercise:**

- Replicate work specific energy demands (non-impact)
- Lo-impact sports, weight training, or yoga are all allowed

### **References:**

- Argillo J, Barerera S, Dynan M. Lahey Hospital and Medical Center: *Rehabilitation Protocol: THA*. 2015.
- The Specialty Team for Arthroplasty Rehabilitation (STAR) Team in conjunction with the UW Health Joint Replacement Surgeons. (2014, May). *Outpatient Rehabilitation Guidelines for Traditional (Metal on Polyethylene) Total Hip Arthroplasty*. Retrieved from <http://www.uwhealth.org/orthopedic-surgery-rehab/total-hip-replacement/11209>.

\*\*\*NOTE: All protocols should be used as a **guideline only**. Progression will be based on individual patient presentation, which is discussed throughout treatment by therapist and physician