



**Lahey Hospital
& Medical Center**

**Rehabilitation Protocol:
Total Hip Arthroplasty
(THA)**

Department of Orthopaedic Surgery

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◀ Overview

Total hip arthroplasty (THA) is an elective operative procedure to treat an arthritic hip. This procedure replaces your damaged hip joint with an artificial hip implant. Hip implants consist of (1) a smooth ball on a stem that fits into your thigh bone (the femoral stem), and (2) a metal socket with a smooth liner that is attached to your pelvis (acetabular cup). Once in place, the artificial ball and socket function like your natural hip.

There are several surgical approaches to hip replacement surgery, and each is effective. Your surgeon will determine which surgical approach is best for you. The goals of this surgery are to decrease pain, maximize function of ADLs, reduce functional impairments and maximize quality of life.

This protocol applies to the routine primary total hip arthroplasty procedure. For a revision total hip arthroplasty additional limitations and/or precautions may apply. Contact your surgical team to discuss specific parameters if you are having a revision surgery.

◀ **Phase I Protective Phase 0–1 Week, Hospital Stay**

Goals

- Allow soft tissue healing
- Reduce pain, inflammation, and swelling
- Increase motor control and strength
- Increase independence with mobility
- Educate patient regarding dislocation and weight bearing

Precautions

- Patients are generally WBAT with assistive device for primary THA, unless otherwise indicated by MD
- Keep incision clean and dry
- No showering until staples out and MD approves
- Coordinate treatment times with pain medication
- Dislocation precautions depend on surgical approach noted below
- Posterior approach: Patient must use hip chair and abductor pillow for OOB
- Posterior approach: No hip flexion > 90 °, no hip internal rotation or adduction beyond neutral
- Direct anterior approach: Active hip extension and external rotation is allowed. Limit passive extension and external rotation
- Lateral approach: Avoid passive and active extension with external rotation for 6 weeks post-op
- While in bed, patient to be positioned to prevent heel ulcers

Post-op Days (POD) 1–4

- PT evaluation and initiation of mobility on POD#1
- Patient to be seen by PT 1x/day, thereafter
- Cold pack or ice pack to manage pain, inflammation, and swelling
- Patient education for positioning and joint protection strategies
- Bed mobility and transfer training, including sit-stand
- Therapeutic exercises: ankle pumps, quadriceps sets, gluteal sets
- Gait training on flat surfaces and on stairs with appropriate assistive device per discharge plan
- Physical therapist to coordinate patient receiving appropriate assistive device for home discharge
- OT evaluation-seen on consultation basis. Patients being discharged home prioritized. Orders obtained during daily rounds or page MD for orders as needed.

◀ Phase II – Transitional Phase (Guided by home or rehab therapist)

Weeks 1-3

Goals

- Allow healing/maintain safety
- Reduce pain, inflammation, and swelling
- Increase range of motion (ROM) while adhering to precautions
- Increase strength
- Increase functional independence
- Gait training – Appropriate use of assistive device to emphasize normal gait pattern and limit post-operative inflammation

Precautions

- Posterior approach: No hip flexion > 90 ° no hip internal rotation or adduction beyond neutral. No combination of above motions allowed for 6 weeks post-op
- Direct anterior approach: Active hip extension and external rotation is allowed. Limit passive extension and external rotation. Encourage normal extension/stride with gait
- Lateral approach: Avoid passive and active extension with external rotation for 6 weeks post-op

Therapeutic Exercise (To be performed 3x/day after instruction by therapist)

- Passive/Active Assisted/Active range of motion (P/AA/AROM) exercises in supine position (lying on back): ankle pumps, heel slides. Hip abduction/adduction, hip internal/external rotation, hip flexion/extension only to be performed within ROM precaution guidelines noted above.
- P/ AA/AROM exercises in sitting: long arc quads, ankle pumps. All exercises to be performed within ROM precaution guidelines.
- Strengthening: Quadriceps sets in full knee extension, gluteal sets, short arc quadriceps (SAQ), hooklying ball/towel squeeze.

Gait Training

- Continue training with assistive device. Wean from walker to crutches to cane only when patient can make transition without onset of gait deviation.
- Encourage all normal phases of gait pattern using appropriate device.

Modalities

- Cold pack or ice pack for 10-15 minutes 3x/day to manage pain and swelling. Instruct patient to monitor for adverse reaction to cold.

Criteria for progression to next phase:

- Minimal pain, inflammation, and swelling
- Pt ambulates with assistive device without pain or gait deviation
- Independent with current daily home exercise regimen

- Progression to driving: must be off all narcotic analgesics in order to concentrate on driving tasks. Discuss specifics with surgeon

◀ **Phase III – Outpatient Early Phase (Weeks 3-6, guided by outpatient physical therapist)**

Goals

- Reduce pain, inflammation, and swelling
- Increase range of motion (ROM) while adhering to precautions
- Increase lower extremity and trunk strength while adhering to precautions
- Balance and proprioceptive training to assist with functional activities
- Gait training: Wean off assistive device when patient can ambulate without deviation
- Functional activity training to enhance patient autonomy with ADLs/mobility

Precautions

- Posterior approach: No hip flexion > 90 °, no hip internal rotation or adduction beyond neutral. No combination of above motions allowed for 6 weeks post-op
- Direct anterior approach: Active hip extension and external rotation is allowed. Limit passive extension and external rotation. No yoga for 6 weeks post-op
- Lateral approach: Avoid passive and active extension with external rotation for 6 weeks post-op

Therapeutic Exercise progression of exercise from Phase II (To be guided by outpatient physical therapist)

- Stationary Bike
- Initiate transverse abdominus and level 1 trunk stabilization
- 3-way straight leg raise (SLR) (flexion, abduction, extension-no extension for lateral approach until week 6)
- Closed chain weight shifting activities including side-stepping
- Balance exercises: single leg stance, alter surface, eyes open/closed
- Lateral step up and step down with eccentric control
- Front step up and step down

Functional Activities

- Sit to stand activities
- Lifting and carrying
- Ascending/descending stairs
- Gait Training

Modalities

- Cold pack or ice pack for 10-15 minutes 1-3x/day to manage pain, inflammation and swelling

Criteria for progression to next phase:

- Minimal pain, inflammation, and swelling
- Pt ambulates without assistive device without pain or deviation
- Good voluntary quad control

◀ **Phase IV – Outpatient Intermediate Phase (Weeks 6-12, guided by outpatient physical therapist)**

Goals

- Increase overall strength throughout lower extremities
- Return to all functional activities
- Begin light recreational activities

Precautions

- Precautions are lifted at 6 weeks post-op unless otherwise specified by surgeon

Therapeutic Exercise

- Progress **Phase III** exercises by increasing resistance and repetitions
- Progress trunk stabilization exercises
- Front lunge and squat activities
- Progress balance and proprioception activities (STAR and ball toss, perturbations)
- Initiate overall exercise and endurance training (walking, swimming, progress biking)

Criteria for discharge

- No pain with functional activities of daily living
- Good lower extremity strength of $\geq 4/5$ throughout
- Patient is independent with reciprocal stair climbing
- Patient consistently adheres to plan of care and home exercise program

◀ **Phase V – Return to High Level Activity (3+ months)**

Activities

- Continue walking, swimming and biking programs for aerobic conditioning/endurance
- Begin playing golf and outdoor cycling
- Obtain clearance from surgeon for return to impact sports such as tennis or jogging

Rehabilitation Protocol for Total Hip Arthroplasty

Post –op Phase/Goals	Interventions/Activities	Precautions
<p>Phase I Protective Phase 0- 1 Week Hospital Stay</p> <ul style="list-style-type: none"> • Reduce pain, inflammation, and swelling • Increase range of motion (ROM) while adhering to precautions • Increase lower extremity and trunk strength while adhering to precautions • Balance and proprioceptive training to assist with functional activities • Gait training: Wean off assistive device when patient can ambulate without deviation • Functional activity training to enhance patient autonomy with ADLs/mobility 	<p>PT evaluation and initiation of mobility on POD#1</p> <p>Patient to be seen by PT 1x/day, thereafter</p> <p>Cold pack or ice pack to manage pain, inflammation, and swelling</p> <p>Patient education for positioning and joint protection strategies</p> <p>Bed mobility and transfer training, including sit-stand</p> <p>Therapeutic exercises: ankle pumps, quadriceps sets, gluteal sets</p> <p>Gait training on flat surfaces and on stairs with appropriate assistive device per discharge plan</p> <p>Physical therapist to coordinate patient receiving appropriate assistive device for home discharge</p> <p>OT evaluation-seen on consultation basis. Patients being discharged home prioritized. Orders obtained during daily rounds or page MD for orders as needed.</p>	<ul style="list-style-type: none"> • Patients are generally WBAT with assistive device for primary THA, unless otherwise indicated by MD • Keep incision clean and dry • No showering until staples out and MD approves • Coordinate treatment times with pain medication • Dislocation precautions depend on surgical approach noted below • Posterior approach: Patient must use hip chair and abductor pillow for OOB • Posterior approach: No hip flexion > 90 °, no hip internal rotation or adduction beyond neutral • Direct anterior approach: Active hip extension and external rotation is allowed. Limit passive extension and external rotation • Lateral approach: Avoid passive and active extension with external rotation for 6 weeks post-op • While in bed, patient to be positioned to prevent heel ulcers

Post –op Phase/Goals	Interventions/Activities	Precautions
<p>Phase II – Transitional Phase (Guided by home or rehab therapist) Weeks 1 - 3</p> <ul style="list-style-type: none"> • Allow healing/maintain safety • Reduce pain, inflammation, and swelling • Increase range of motion (ROM) while adhering to precautions • Increase strength • Increase functional independence • Gait training – Appropriate use of assistive device to emphasize normal gait pattern and limit post-operative inflammation 	<p>(To be performed 3x/day after instruction by therapist)</p> <ul style="list-style-type: none"> • Passive/Active Assisted/Active range of motion (P/AA/AROM) exercises in supine position (lying on back): ankle pumps, heel slides. Hip abduction/adduction, hip internal/external rotation, hip flexion/extension only to be performed within ROM precaution guidelines noted above. • P/ AA/AROM exercises in sitting: long arc quads, ankle pumps. All exercises to be performed within ROM precaution guidelines. • Strengthening: Quadriceps sets in full knee extension, gluteal sets, short arc quadriceps (SAQ), hooklying ball/towel squeeze. <p><u>Gait Training</u></p> <ul style="list-style-type: none"> • Continue training with assistive device. Wean from walker to crutches to cane only when patient can make transition without onset of gait deviation. • Encourage all normal phases of gait pattern using appropriate device. <p><u>Modalities</u></p> <ul style="list-style-type: none"> • Cold pack or ice pack for 10-15 minutes 3x/day to manage pain and swelling. Instruct patient to monitor for adverse reaction to cold. 	<ul style="list-style-type: none"> • Posterior approach: No hip flexion > 90 ° no hip internal rotation or adduction beyond neutral. No combination of above motions allowed for 6 weeks post-op • Direct anterior approach: Active hip extension and external rotation is allowed. Limit passive extension and external rotation. Encourage normal extension/stride with gait • Lateral approach: Avoid passive and active extension with external rotation for 6 weeks post-op

Post –op Phase/Goals	Interventions/Activities	Precautions
<p>Phase III – Outpatient Early Phase (Weeks 3-6, guided by outpatient physical therapist)</p> <ul style="list-style-type: none"> • Reduce pain, inflammation, and swelling • Increase range of motion (ROM) while adhering to precautions • Increase lower extremity and trunk strength while adhering to precautions • Balance and proprioceptive training to assist with functional activities • Gait training: Wean off assistive device when patient can ambulate without deviation • Functional activity training to enhance patient autonomy with ADLs/mobility 	<p><u>Therapeutic Exercise progression of exercise from Phase II (To be guided by outpatient physical therapist)</u></p> <ul style="list-style-type: none"> • Stationary Bike • Initiate transverse abdominus and level 1 trunk stabilization • 3-way straight leg raise (SLR) (flexion, abduction, extension-no extension for lateral approach until week 6) • Closed chain weight shifting activities including side-stepping • Balance exercises: single leg stance, alter surface, eyes open/closed • Lateral step up and step down with eccentric control <p><u>Functional Activities</u></p> <ul style="list-style-type: none"> • Sit to stand activities • Lifting and carrying • Ascending/descending stairs • Gait Training <p><u>Modalities</u></p> <ul style="list-style-type: none"> • Cold pack or ice pack for 10-15 minutes 1-3x/day to manage pain and swelling 	<ul style="list-style-type: none"> • Posterior approach: No hip flexion > 90 °, no hip internal rotation or adduction beyond neutral. No combination of above motions allowed for 6 weeks post-op • Direct anterior approach: Active hip extension and external rotation is allowed. Limit passive extension and external rotation. No yoga for 6 weeks post-op • Lateral approach: Avoid passive and active extension with external rotation for 6 weeks post-op

Post –op Phase/Goals	Interventions/Activities
<p>Phase IV – Outpatient Intermediate Phase (Weeks 6-12, guided by outpatient physical therapist)</p> <ul style="list-style-type: none"> • Increase overall strength throughout lower extremities • Return to all functional activities • Begin light recreational activities 	<p><u>Therapeutic Exercise</u></p> <p>Progress Phase III exercises by increasing resistance and repetitions</p> <p>Progress trunk stabilization exercises</p> <p>Front lunge and squat activities</p> <p>Progress balance and proprioception activities (STAR and ball toss, perturbations)</p> <p>Initiate overall exercise and endurance training (walking, swimming, progress biking)</p> <p><u>Criteria for discharge</u></p> <p>No pain with functional activities of daily living</p> <p>Good lower extremity strength of $\geq 4/5$ throughout</p> <p>Patient is independent with reciprocal stair climbing</p> <p>Patient consistently adheres to plan of care and home exercise program</p>
<p>Phase V – Return to High Level Activity (3+ months)</p>	<p>Continue walking, swimming and biking programs for aerobic conditioning/endurance</p> <p>Begin playing golf and outdoor cycling</p> <p>Obtain clearance from surgeon for return to impact sports such and tennis or jogging</p>