Rehabilitation Protocol for Total Hip Arthroplasty

The intent of this physical therapy protocol is to provide the clinician with a guideline of the post-operative rehabilitation course of a patient who has undergone a total hip arthroplasty (THA) with Ortho Rhode Island. It is by no means intended to be a substitute for one's clinical decision making regarding the progression of a patient's postoperative course based on their physical exam/findings, individual progress, and/or the presence of post-operative complications. If a clinician requires assistance in the progression of a post-operative patient, the clinician should consult with the referring surgeon.

Phase 1: Immediate Post-Op (Day 0 – 3)	
Rehabilitation Goals	• Enable patient to perform bed/chair/toilet/commode transfers as independently as possible • Instruct patient on proper use of walker or crutches for ambulation and stair management • Decrease inflammation, swelling, and pain • Initiate home exercise program with emphasis on mobility and muscle activation

Precautions*	• **Direct Anterior: No Precautions**
	• **Posterior Approach:**
	  • Avoid excessive hip flexion when lifting/carrying
	  • Avoid sitting in deep chairs (hips above level of knees)

Interventions	• Modalities - RICE protocol • Gentle soft tissue mobilization, avoid incision until fully healed (ITB/hip flexor) • Therex- Ankle pumps, glut set, quad set, heel prop LLLD stretch (3-5 min), heel slides, seated flx/ext AAROM, heel/toe raise, bed mobility/transfers • Gait training- bend and kick, heel to toe, step through regardless of AD • Balance- weight shifts, narrow stance, tandem stance • Stair training- step to pattern, affected LE supported with AD/railing
Criteria to Progress	• Implementation of tolerable HEP • Independent/safe bed mobility transfers with least restrictive assistive device • Pt ambulating with least restrictive AD with min antalgic gait/limp

Phase 2: Early Rehab (Day 3 – 2 Weeks)	
Rehabilitation Goals	• Protect healing joint and prosthesis stabilization • Pain and edema control • Screen for/rule out DVT and infection • Improve pain-free hip ROM • Improve muscle activation • Ambulate independently with least restrictive assistive device • Modified Independence with all ADLs
Red/Yellow Flags	• Contact Doctor immediately if concerned about infection or DVT • Emphasize consistent education regarding pain/stiffness expectations and lengthy THA recovery
Interventions	Modalities - MT and Cryotherapy/Heat as needed, scar mobilizations (teach self) **Gait/Balance:** • Circle/cone/hurdle walking, sled push (bend and extend), side stepping, turning • Tandem walk, SLS, foam beams, foam pads **Therex:** • Stationary bike for ROM, beginning with partial revolutions (no resistance) • PROM within tolerable ROM-hip flexion, circumduction, abd, gentle IR/ER, log rolls • SKTC, supine hamstring 90-90, gastroc stretch seated/standing • Hip abd/add iso, supine abd AAROM/AROM, supine clamshells/bent knee fall out, LTR, SL clamshell/reverse clamshell, supine flx iso/march, bridge, standing hip flx/abd/add/ext
Criteria to Progress	• Hip MMT >/= 3/5 (posterior precautions) • Hip PROM within 20-30 degrees of unaffected LE (if posterior approach) • Discharged AD, good gait pattern • Minimal-Mod pain at most with functional activities/PT intervention • SLS for at least 10 seconds with minimal pain or hip drop/Trendelenburg

Phase 3: Mid Stage Rehab (Weeks 2 – 6)		
Rehabilitation Goals	• Pain and edema control • Improve and normalize PROM and AROM • Improve and normalize muscle strength	• Normalize gait pattern w/o AD • Progress functional movement patterns • Independent with all ADLs
Interventions *Cont. all exercises from previous phase as necessary*	Modalities - d/c or decrease frequency **Therex:** • UBE/Elliptical/Aerodyne as tolerated • PROM into limited ranges, foot on step hip flexion, Figure 4 (supine/seated), piriformis, Open book, standing hip flexor and adductor stretch, prone quad stretch, quadruped rocking • Band resisted bridge, march, clamshell/reverse, side stepping, SLR flx/abd/add/ext • Sit to stand>squat>wall sit, step up>lat>curtsy lat heel tap>ant, ¼ split squat>retro slider lunge>split squat • Hip hinge>RDL>dead lift from box>modified SL RDL • Machine resisted strengthening quad/hamstring, multi-hip, leg press **Balance/Gait training:** • Foam beam- tandem walking, hurdle walking lateral, hurdle walking forward, cone taps • Foam pad- SL RDL, 3-way hip • Bosu ball- BL balance, mini squat	
Criteria to Progress	• Hip MMT >/= 4-/5 (posterior precautions) • Hip PROM within 10-20 degrees of unaffected hip • No gait deviations	• Min difficulty/pain with ADLs (including stairs) • TUG and 30s STS ~80% of age predicted norms

Phase 4: Late-Stage Rehab (Weeks 6 – 12)		
Rehabilitation Goals	• Restore full PROM and AROM • Maximize muscular performance • Maximize functional performance of ADLs • Return to work related tasks if applicable	• Return to recreational activities if applicable (prepare for impact activities at ~12 weeks) • Decrease frequency of PT while maintaining progress, emphasize self-management
Precautions	• Terminate any remaining precautions • **Pending progress and pt confidence, d/c to self-management appropriate in this phase**	
Interventions	Modalities - consider dry needling if soft tissue restrictions persist **Therex:** • Elliptical/aerodyne/treadmill walking/aquatic program • 4-way slider lunge>curtsy step up>4-way lunge>RFE split squat>4-way heel tap • Single leg squat to box>shrimp squat>unsupported single leg squat • Ball bridge- BL straight leg, BL hamstring curl, single leg eccentric, single leg full • Dead lift from ground, lift and carry, chaos carry, waiter's carry • Front plank, side plank, adductor side plank • Walking dynamic stretching **Stability/Speed prep:** • Non-impact plyometrics- shuttle kick back (slow>fast), med ball slam to mini squat (BL/UL), Split squat med ball slam, SL RDL row (slow>fast), SL RDL med ball throw • Dynamic stability- bosu lunge (forward/lateral), bosu med ball catch and pass, bosu med ball slams, bosu SL RDL, foam beam med ball slams, SLS unstable surface catch and pass	
Criteria to Progress	• Hip ROM WNL • Hip strength>/= 4+/5 (~80% LSI) • TUG and 30s STS ~90% of age predicted norms	• No difficulty with ADLs/work tasks • Discharge majority of patients to self-management

Phase 5: Advanced Rehab (Weeks 12+)	
Rehabilitation Goals	• Return to appropriate recreational sports/activities as indicated • Enhance strength, endurance and proprioception as needed for ADLs, work tasks and recreational activities

Interventions	• Patients considering plyometrics with the intent to resume running should consult with their physician and be objectively assessed for return to sport readiness
	• Criteria to initiate impact activities
	  • Full and functional pain free ROM
	  • >/=90% LSI via dynamometry
	  • 10x pistol squats*/shrimp squats*/forward heel taps from 8-inch box* without hip compensatory pattern
	  • ~60 degrees of knee flexion during testing*
	  • Initiate with PWB- band assisted or shuttle BL jumps (assess landing mechanics) straight plane>AP/ML, scissor hops>SL jumps straight plane>SL jumps AP/ML
	• Initiate FWB- box jumps up>box jumps down>lateral box jumps up>lateral box jumps down, step down knee to foam roller>box jump up 2 to 1>box jump down 2 to 1, single leg box jumps up>down.
	• Progress FWB- in place jumps with reset>reactive>line jumps AP>line jumps ML>scissor hops>single leg jumps in place>AP>ML, jogging in place>jog in place land on one leg, jogging forward>skipping>high skipping>broad jump>lateral bound>diagonal bound>forward single leg bound
	• Once pt has demonstrated tolerance to 200-250 foot contacts without reactive effusion, may initiate return to running protocol

Criteria to Progress	• Return to sport testing
	  • 90-100% hip strength LSI
	  • Hop testing LSI 90-100% contralateral limb