

## **Total Hip Arthroplasty Rehabilitation Guidelines**

These rehabilitation guidelines are guidelines only and progression through them should be guided by the patient's symptoms and functional ability and/or any specific consultant requirements. This document is designed to guide rehabilitation only, and should not replace the clinical judgement of the instructing physiotherapist. All exercises should be performed within the patient's tolerance level.

ROM = Range of Movement
POLICE = Protection Optimal Loading Ice Compression Elevation
AROM = Active Range of Movement
ADL = Activities of Daily Living

Phase 1 [0-3 weeks]	
Goals	<ul> <li>Pain and swelling well controlled [1]</li> <li>Functional ROM [7] respecting postoperative precautions</li> <li>Continue activities / exercises as per post-operative booklet</li> <li>Begin early strengthening program guided by physiotherapist [4,5,6,7]</li> <li>Safe and independent transfers</li> <li>Independent with assistive aid, increasing weight bearing and improving gait pattern [8]</li> <li>Safe and independent on stairs with assistive aid as per post-op instructions</li> </ul>
Treatment	<ul> <li>Symptom Management and ROM:         <ul> <li>Maintenance of calm, quiet hip [1] through the use of cryotherapy and movement, pain and swelling management [1,2,3]</li> <li>AROM flexion, abduction, hip and knee extension [7]</li> </ul> </li> <li>Gait and cardiovascular:         <ul> <li>Gait retraining, can introduce Nordic pattern as comfortable [8]</li> <li>Graduated walking program to be progressed as symptoms allow</li> </ul> </li> <li>Strength and control:         <ul> <li>Strengthening exercises: adding resistance as tolerated guided by physiotherapist [4, 5, 6]. Working on resisted hip abduction, flexion, extension through banded standing exercises, groin angels, glute bridging, heel raises</li> <li>Lateral hip strengthening and control exercises: controlled marching on spot, hip hitch regressions etc</li> <li>Introduction of core activation and core control exercises</li> </ul> </li> </ul>

Phase 1 [0-3 weeks]	
	Functional training:
	- Incorporation of functional tasks into rehabilitation program [4]
Precautions	<ul> <li>Mobility: To use crutches for 6 weeks unless otherwise specified</li> <li>Avoid ambulation to fatigue</li> <li>Avoid pivoting during ambulation</li> </ul>
	<ul> <li>Movement within Safe Zone until precautions eased:</li> <li>Avoid hip flexion &gt;90°</li> <li>Avoid adduction past neutral / crossing legs</li> </ul>
	<ul> <li>Pain should not persist after rehabilitation visits for more than 24hrs and should be within patient's tolerance</li> </ul>
Progressions	Improvement in ROM (respecting safe zone), muscle function/strength and gait [8]

Phase 2 [4-6 weeks]	
Goals	<ul> <li>Continue to reduce pain and swelling [1,2,3]</li> <li>Decreased dependency on assistive aid with a view to weaning from aid and restore appropriate walking pattern at 6 weeks postoperatively</li> <li>Safe and independent on stairs with introduction of reciprocal pattern towards end of phase</li> <li>Continue lower limb strength input</li> </ul>
Treatment	<ul> <li>Symptom Management and ROM:         <ul> <li>Pain/ Swelling/ ROM: maintenance of calm, quiet hip [1] through the use of cryotherapy and movement</li> <li>Continue progressing AROM hip flexion, hip abduction, hip and knee extension through strengthening and facilitation of movement [7]</li> </ul> </li> <li>Gait and cardiovascular:         <ul> <li>Stationary bike (high saddle level with respect of precautions) [6,9]</li> </ul> </li> </ul>

Phase 2 [4-6 weeks]	
	<ul> <li>Floor pedals</li> <li>Gait retraining [8]</li> <li>Continue graduated walking program</li> <li>Strength and control:</li> <li>Resistance training increasing load as tolerated e.g. clamshells, leg press, crab band, glute bridge progressions, hip hitch, side lying hip abduction, hip flexor holds, side stepping, crab bands, mini squats, step up, inner</li> </ul>
	range quads, leg extension etc  Functional training:  Continue with the incorporation of functional tasks into rehabilitation program [4]  Balance and proprioception exercises
Precautions	<ul> <li>Hip precautions still apply</li> <li>Monitor wound healing</li> <li>Pain should not persist after rehab visits for more than 24hrs and should be within patients tolerance</li> </ul>
Progressions	Continuing improvement in ROM, lower limb strength, gait and load tolerance

Phase 3 [6-12 weeks+]	
Goals	<ul> <li>Maximise ROM</li> <li>Maximise lower limb strength and symmetry to opposite side [4,6]</li> <li>Normal gait pattern without assistive device</li> <li>Stairs independent with reciprocal pattern</li> <li>Graduated return to work depending on profession</li> <li>Graduated return to individual activities</li> <li>Independent with ADL's</li> </ul>
Treatment	<ul> <li>Mobility and cardiovascular exercise: wean off crutches and increase walking tolerance, stationary bike, road bike, elliptical, treadmill, aquatic exercise, low impact aerobics, Tai Chi etc</li> </ul>

Phase 3 [6-12 weeks+]	
	<ul> <li>Continue with lower limb strengthening program increasing load as tolerated [4,5,6] e.g. crab band, hip thrust, donkey kicks, step ups, wall sit, mini squats etc</li> </ul>
	<ul> <li>Core: activation of core control during activities especially in those with groin pain: pallof press, deadbug exercise</li> </ul>
	- Continue functional training [8]
	- Lifestyle advice e.g. weight management and maintenance exercise program [5]
	- Progress balance and proprioception as needed
	<ul> <li>Hydrotherapy can be started when there is an adequate wound healing;</li> <li>walking in pool (respectively to weight bearing status) [5,6] and gradual return to swimming</li> </ul>
	<ul> <li>Gradual return to higher level activities such as golf, doubles tennis etc ensuring adequate training and gradual return to twisting or swinging movement at 12 weeks post-surgery +</li> </ul>
Precautions	<ul> <li>Hip precautions may still apply depending on consultant preference</li> <li>Monitor wound healing</li> </ul>
	- Pain should not persist after rehab visits for more than 24hrs and should be within patients tolerance
Activity Timelines	Red Alert (not recommended): running, jogging, contact sports, jumping sport, high impact aerobics
	Orange Alert (should be avoided): vigorous walking/hiking, singles tennis, repetitive aerobic step climbing, repetitive lifts of greater than 25kg
	Green Alert (gradual return after 6-8 weeks): driving, recreational walking, light hiking, swimming (front and back crawl advised), recreational cycling, golf, ballroom dancing, sexual activity within comfortable limits
	* Activity timelines are both patient and consultant dependent. Patients should consult their surgeon before partaking in more strenuous activities

<sup>\*</sup> The patient is fit for discharge upon achieving all the goals and functional outcomes of the phase

## References

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- 3. Bleakley, C. (2004). The Use of Ice in the Treatment of Acute Soft-Tissue Injury: A Systematic Review of Randomized Controlled Trials. American Journal of Sports Medicine, 32(1), pp.251-261.
- 4. Kristensen, J. and Franklyn-Miller, A. (2011). Resistance training in musculoskeletal rehabilitation: a systematic review. *British Journal of Sports Medicine*, 46(10), pp.719-726.
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- 6. DiMonaco, M. (2013). Which type of exercise therapy is effective after hip arthroplasty? A systematic review of randomized controlled trials. *European Journal of physical and rehabilitation medicine*.
- 7. Haas, R., Sarkies, M., Bowles, K., O'Brien, L. and Haines, T. (2016). *Early commencement of physical therapy in the acute phase following elective lower limb arthroplasty produces favorable outcomes: a systematic review and meta-analysis examining allied health service models.*
- 8. Hodt-Billington, C., Helbostad, J., Vervaat, W., Rognsvåg, T. and Moe-Nilssen, R. (2011). Changes in gait symmetry, gait velocity and self-reported function following total hip replacement. *Journal of Rehabilitation Medicine*, 43(9), pp.787-793.
- 9. Liebs, T., Herzberg, W., Rüther, W., Haasters, J., Russlies, M. and Hassenpflug, J. (2010). Ergometer Cycling After Hip or Knee Replacement Surgery. *The Journal of Bone and Joint Surgery-American Volume*, 92(4), pp.814-822.