

AMIS TOTAL HIP ARTHROPLASTY

(Post-Operative Protocol)

Prepared for Dr. J.N. Cakic

*This protocol is designed to serve as a guideline for clinicians and therapists.
One should consider the general health, bone quality and anticipated functional demands of each patient;
continual assessment is essential when considering patient progression.
Should you have any queries or concerns, please consult with the surgeon or rehabilitation team.*

**Your post-operative rehabilitation forms an integral aspect in the success outcome of your joint replacement.
Active participation and education are encouraged throughout your rehabilitation.**

WHAT IS ANTERIOR MINIMALLY INVASIVE SURGERY (AMIS)?

This is an anatomical approach to hip replacement that preserves the peri-articular muscles (muscles that surround the hip). A skin incision of 5-8 cm is made about 2.5 cm lateral to the anterior superior iliac spine, this runs obliquely downwards over the proximal aspect of the thigh. This approach is muscle sparing and access to the hip joint between the muscles (*intermuscular*) and does not damage any of the adjacent muscles. It is for this reason that the patient has improved function following this particular joint replacement approach.

RANGE OF MOVEMENT RESTRICTIONS:

Hip Extension : minimal / limited - initial 3 weeks following surgery
Hip External Rotation : $\leq 45^\circ$ / No FABER position - initial 6 weeks following surgery

WEIGHT BEARING / CRUTCHES:

The majority of patients are *partial weight bearing* following surgery.
Should you be an exception this will be discussed on an individual basis between medical team and patient.

Crutches are utilized until you regain the correct GAIT (walking) pattern.

As a general rule: 0 – 3 weeks x2 crutches
3 – 4 weeks x2 crutches → x1 crutches (weaning phase)
4 – 6 weeks x1 crutches → normal ambulation (weaning phase)

NOTE ~ UNCEMENTED TOTAL HIP REPLACEMENT ~ NOTE

Protection of prosthesis-bone interface

No axial loading for initial 6 weeks

No jumping / hopping on operated leg for initial 3 months

MANDATORY FOLLOW-UP ASSESSMENT BY MEDICAL TEAM?

Week 3: Nurse Wound check
Ultrasound Duplex doppler scan to exclude deep vein thrombosis (Prevention)
Physiotherapist Ensure that patient is adhering to protocol and milestones are met

HOW DOES AMIS DIFFER FROM OTHER TOTAL HIP REPLACEMENT APPROACHES?

- Hip flexion is permitted $\geq 90^\circ$
- Sitting on a regular chair is permitted
- No need for a raised toilet seat
- Normal sleeping position. No abduction pillow required
- When lying / sleeping on your side a pillow is placed between the legs for comfort

STAGE 1 (0 - 4 weeks)

AIM	<p>The average length of hospital stay is 3-5 days Your hospital-based physiotherapist will provide twice-daily treatment during your hospital stay Patient will be discharged with a HOME exercise program (refer to end of protocol) Commence outpatient treatment 7-10 days following surgery</p> <ul style="list-style-type: none"> • Restore range of movement (within prescribed ROM) • Maintain muscle function, prevent muscle inhibition • Educate & Correct GAIT (crutch walking, active daily functions, home exercise) • Osseointegration and mature bone in-growth (prosthesis-bone interface)
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PHYSIOTHERAPY <i>(Must respect healing phase)</i>	<ul style="list-style-type: none"> • Passive and active hip mobilization • Restore normal crutch gait pattern – some patients may advance to x1 crutch by week 3 <i>(This is not a general rule, but based on a clinical decision at Week 3 assessment)</i> • Patient education and prosthetic care – including day-to-day daily activity • Soft tissue mobilization – hip, thigh, buttock, lumbar spine (include spinal mobilization) • Commence stretching (within ROM guidelines) • Address chronic pain (if present), and address any muscle wasting and shortening • Commence stationary cycling with <u>NO</u> resistance • Initiate core muscle exercises (bed, mat programme) • Commence gluteal activation (bed, mat programme) • Hydrotherapy / Swimming / Bathing: May commence after the end of the 4th post-operative week. This is dependent upon the 3-week follow-up • No breaststroke swimming for 3 months • Driving – usually permitted around the 4th post-operative week. One needs to consider wound healing, driving position, proprioception, adequate muscle control and response time. THIS DECISION IS MADE AT THE OBLIGATORY 3rd WEEK FOLLOWUP ASSESSMENT
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~ MANDATORY FOLLOW-UP ASSESSMENT BY MEDICAL TEAM ~

Week 3: Nurse Wound check
 Ultrasound Duplex doppler scan to exclude deep vein thrombosis (Prevention)
 Physiotherapist Ensure that patient is adhering to protocol and milestones are met

<p>CRITERIA TO PROGRESS TO STAGE 2:</p> <ul style="list-style-type: none"> • No pain during active achieved ROM or with Stage 1 exercise • Protective - Full weight bearing (1 crutch or unless advised differently) i.e. heavy patients • Proper muscle firing patterns • No compensatory GAIT patterning

STAGE 2 (4 - 12 weeks)

AIM	<ul style="list-style-type: none">• Gradual introduction of hip extension• Maintain / improve ROM• Maintain / improve normal arthrokinematics / GAIT pattern• Maintain / improve muscle function and endurance• Introduce standing proprioception• Introduce cardiovascular endurance (e.g. weight bearing protective exercise – cycling / elliptical cycle)• Continue to respect osseointegration and mature bone in-growth (prosthesis-bone interface)• Advance weight bearing status
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PHYSIOTHERAPY <i>(Must respect healing phase)</i>	<ul style="list-style-type: none">• Continue / increase hip mobilization• Maintain / improve GAIT pattern (wean from crutches)• Soft tissue mobilization – hip, thigh and lumbar spine (include spinal mobilization)• Advance stretching (focus on hip flexors)• Increase cycling activity (no interval training or spinning)• Advance core muscle exercises• Advance gluteal strength• Maintain / improve proprioception• Assess and treat adjacent joint (remember chronicity and possible other pathologies<ul style="list-style-type: none">○ (SIJ, Lx spine, concomitant OA)○ Continue hydrotherapy (if prescribed) - Remember NO breaststroke for 3 months• <i>Optional</i> – Alter-G Anti Gravity Treadmill© may be introduced•
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RESTRICTIONS / PRECAUTIONS:

Uncemented prostheses - NO full force axial loading until end of 3rd month.
Normal walking permitted after 6 weeks with distance in patient comfort zone.

CRITERIA TO PROGRESS TO STAGE 3:

- Full ROM (especially anatomic hip extension)
- No pain during full ROM or with Stage 2 exercise
- No GAIT pathology or compensatory patterning during GAIT
- Adequate abdominal core and gluteal strength to perform Hip Stage Screening 2 – 3
- Hip Stage Screening 2- 3 \geq 5 Points (**refer to Hip Stage Screening**)

STAGE 3 (3 – 6 months)

AIM	<ul style="list-style-type: none"> • Optimize neuromuscular control and proprioception • Restore muscle endurance and strength • Increase cardiovascular endurance • Advanced core stability • Slow introduction of axial loading activities • Maintain hip ROM
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PHYSIOTHERAPY <i>(Must respect healing phase)</i>	<ul style="list-style-type: none"> • Maintain full ROM • Maintain / improve muscle strength and endurance (including abdominal core) • Re-assess GAIT pattern • Soft tissue mobilization / spinal mobilization – if required • Maintain stretching • Advance cardiovascular training • Advance neuromuscular control and proprioception with axial loading • Assess and treat concomitant pathologies • Full swimming – no restrictions
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BIOKINETICS:

Patients that lead a sedentary life-style e.g. elderly (Optional to pursue biokinetic assessment)

Advancing to biokinetic:

- Determined at 3rd month follow-up assessment (Doctor and / or Physiotherapist decision)
- No pain is permitted
- Adequate → Full ROM

Biokinetic Assessment:

- Postural assessment
- Muscle length / flexibility
- Functional movement screening & balance reaction
- Isokinetic strength test (**ONLY** required for manual labor, sporting activity, very active lifestyle)
 - Concentric vs. eccentric – Flexion : Extension / Abduction : Adduction
 - Check - Range of movement – SLR, IR, ER, Thomas test

CRITERIA TO DISCHARGE PATIENT FROM THERAPY:

- Full ROM
- No residual pain
- Full return to active daily function
- Able to perform unsupervised maintenance gym programme
- Hip Stage Screening 2- 3 Screening Full Points (**refer to end of Hip Stage Screening**)

DOCTOR FOLLOW-UP

6th Week	Doctor & Physio	X-Ray, Passive & Active ROM check (including PROM's) Functional milestone assessment
6th Month	Doctor	X-Ray, Passive & Active ROM check (including PROM's)
1 Year	Doctor	X-Ray, Passive & Active ROM check (including PROM's)



(Annually if required)		
5 Year (Mandatory)	Doctor	X-Ray, Passive & Active ROM check (including PROM's)

