

# Total Hip Replacement

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# Introduction

- What is a total hip replacement?

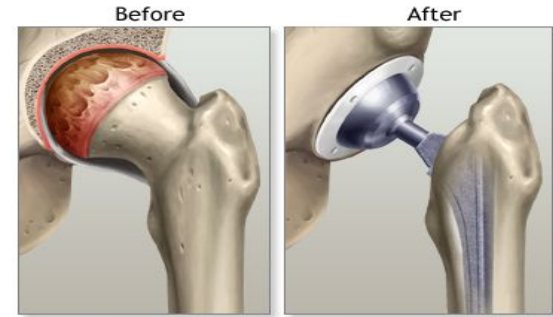
- A procedure in which the articular cartilage of the femoral head and the acetabulum are replaced with a synthetic material. This relieves pain, improving joint kinematics and improving function.<sup>3</sup>

- Why do people get a THA?

- Any condition that affects the integrity of the articular cartilage of either the femoral head or acetabulum can be a cause for a THA. The most common condition is osteoarthritis, but others include inflammatory arthritis (such as rheumatoid arthritis), developmental dysplasia, trauma, neoplasms, osteonecrosis, or childhood hip disorders (legg-calve-perthes disease, slipped capital femoral epiphysis).<sup>1</sup>

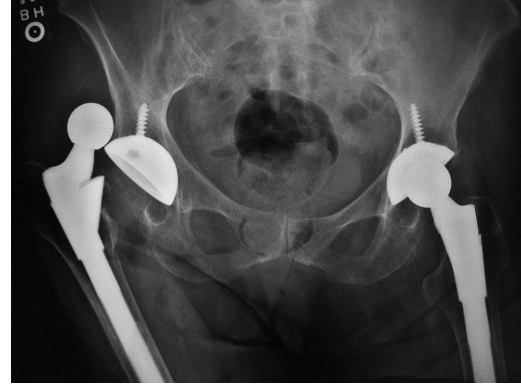
- Risk factors for OA

- Age, female > male, obesity, genetic elements, previous injury, occupation, muscle weakness,



ADAM

# Introduction Ctd'



- Signs/Symptoms

- Prior to THA, patient complaints include: patients with OA of the hip complain of pain in the hip (more in the groin) that is aggravated by activity and better with rest. additionally , pain with IR, IR less than 15°, flexion less than 115°, and morning stiffness.<sup>1</sup>
- After THA, primary symptoms include: pain, swelling, decreased hip strength, decreased hip ROM, impaired gait, decreased functional abilities.<sup>2</sup>

- Complications

- Complications that can arise during surgery are: fracture (0.1-18%), nerve injury (0-3%), vascular injury (0.2-0.3%), cement related hypotension (<5%).<sup>3</sup>
- Complications to be aware of post-operatively are: DVT, infection (0.4-1.5%), dislocation (0-2%), aseptic loosening, leg length discrepancy.<sup>3</sup>

# Case Study

- Sherry is a 67 year old overweight female with advanced osteoarthritis in the right hip. She experienced symptoms of hip and groin pain during weight bearing for over 10 years prior.
- Prior to surgery: pt was independent in activities of daily living but had difficulty walking up/down stairs and was limited to walking 1 block.
  - Right hip ROM restricted and painful.
  - X-rays indicated right hip degeneration
- Pt underwent right THA - anterior approach
  - No complications



# Impairments & Limitations

## Impairments

- Pain, swelling
- Weakness
- Decreased ROM
- Decreased balance

## Functional Limitations

- Unable to transfer - sit to stand from chair or toilet
- Unable to ambulate - uses FWW with limitations
  - Gait distance is limited to 4 steps
- Unable to use stairs
- Risk of falls
- Unable to stand for >1 min



# Treatment Plan - Hospital (Days 1-3)

- Reduce pain and swelling
  - Ice and pain medication
- Introduce ROM (2x10, 2x/day)
  - Knee flexion (heel slides)
  - Hip abduction (supine) and flexion (heel slides)
  - Ankle dorsiflexion and plantarflexion (ankle pumps)
- Bed Exercises (2x10, 2x/day)
  - Quad sets
  - Glute sets
  - Hamstring sets
  - Long arc quads (LAQ)
  - Seated hip flexion
- Education on bed mobility
  - Bridge, scoot, roll, up to elbows, up to hands, and sit on edge of bed
- Education on transfers
  - Bed to FWW/FWW to bed
  - FWW to toilet/toilet to FWW
- Education with FWW
  - Gait training as much as tolerated



# Ankle Pumps



# Isometric Knee Extension (“Quad Sets”)





# Gluteal Squeezes (“Glute Sets”)



# Supine Hip Abduction



# Supine Heel Slide



# Isometric Hamstring Contraction

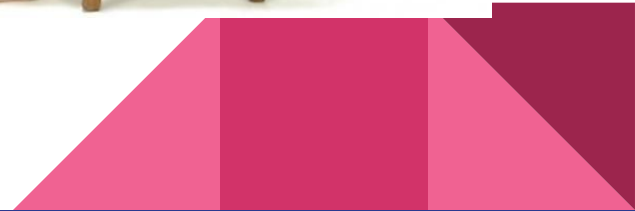


# Treatment Plan - Outpatient (Days 4-7)

- Reduce swelling
  - Ice
- Continue ROM & bed exercises (2x15)
  - Heel slides, hip abduction, ankle pumps
  - Quad sets, glute sets, hamstring sets, LAQ
  - Add in bridges
- Introduce standing exercises (2x10)
  - Abduction
  - Standing Hip Flexion (marching)
  - Balance training (progress to more narrow BOS)
- Emphasize more ambulation
  - Ambulate as tolerated
- Education for ADLs
  - In and out of car and shower
  - Use of stairs
- Continue education with FWW and progress to cane if possible



# Long Arc Quads “Kicks”



# Glute Bridge



# Standing Hip Abduction





# Standing Hip Flexion (Marching)



# Treatment Plan - Outpatient (Weeks 2-3)

- Continue ROM
  - Ankle pumps, heel slides
- Progress to gravity resisted exercise (2x10)
  - Continue bridges
  - Straight leg raise
  - Side-Lying abduction
- Continue balance training
  - Narrow BOS as patient improves
- Progress to close chain exercises (2x10)
  - Mini Squats
  - Step-Ups
- Continue emphasis on ambulation (As tolerated)
  - Educate on use of cane if not already done so
  - Progress to ambulation with cane if not already done so



# Straight Leg Raise



# Side-Lying Abduction



# Mini Squats



# Step Ups



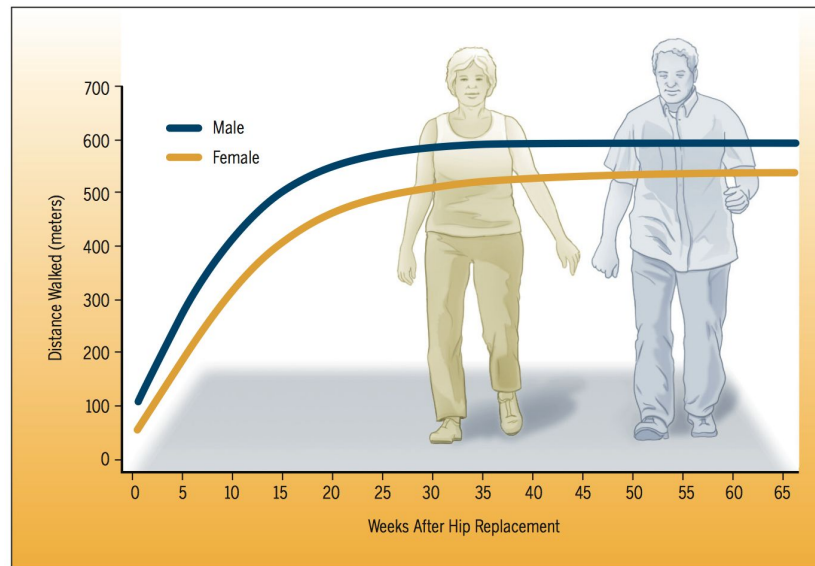
# Outcome Measures

**Lower Extremity Functional Scale (LEFS):** Questionnaire containing 20 questions about patient's ability to perform everyday tasks

- MCID- 9 LEFS points

**6 MWT:** Quantifies functional status

- Refer to average recovery Patterns to check patient progress and set goals



# Take Home Message

1. Ensure patient maintains precautions put in place by the surgeon
2. There is no agreed upon protocol for rehab following THA, therefore create program using sound clinical judgement and patient goals.
3. Main focuses of both the HEP and clinic therapy are: return to full ROM, strengthening, and return to functional ambulation and transfers.



# References

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