

**Dr. Matthew R. Byington**  
**Orthopaedic Surgeon – Board Certified**  
**Sports Medicine & Arthroscopic Surgery // Knee & Shoulder Reconstruction**  
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**REHABILITATION GUIDELINES: KNEE Postop TOTAL KNEE ARTHROPLASTY**

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**I. Immediate Postoperative Phase (Day 1 to 10)**

- Goals:**
- 1) Active quadriceps muscle contraction
  - 2) Safe (isometric control), independent ambulation
  - 3) Passive knee extension to 0 degrees
  - 4) Knee flexion to 90 degrees or greater
  - 5) Control of swelling, inflammation, bleeding

**Day 1 to 2**

**Weight Bearing** – WBAT with Walker x 2 weeks and then Cane x 2 weeks (exception: formal PT)

**ROM** – 0-100°

**Cryotherapy** – 40 minutes at a time every 4 hours

**Exercises:**

- \* Ankle Pumps with leg elevation
- \* Passive knee extension exercise
- \* Electrical stimulation to quad
- \* Straight leg raises (SLR)
- \* Quad sets
- \* Knee extension exercise 90-30 degrees
- \* Hamstring stretches (gentle)

**Day 4 to 10**

**Weight Bearing** - WBAT with Walker x 2 weeks and then Cane x 2 weeks (exception: formal PT)

**ROM** – 0-100°

**Exercises:**

- \* Ankle pumps with leg elevation
- \* Passive knee extension stretch
- \* Active assistive ROM knee flexion
- \* Quad Sets
- \* Straight leg raises
- \* Hip abduction/adduction
- \* Knee extension exercise 90-0 degrees
- \* Continue use of cryotherapy

**Gait Training** - Continue safe ambulation. Instruct in transfers

**II. Motion Phase (Week 2-6)**

- Goals:**
- 1) Improve range of motion
  - 2) Enhance muscular strength/endurance
  - 3) Dynamic joint stability
  - 4) Diminish swelling/inflammation
  - 5) Establish return to functional activities
  - 6) Improve general health

**Criteria to enter Phase II**

- 1) Leg control, able to perform SLR
- 2) Active ROM 0-90 degrees
- 3) Minimal pain/swelling
- 4) Independent ambulation/transfers

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**Week 2-4**

**Weight Bearing** - WBAT with Walker x 2 weeks and then Cane x 2 weeks (exception: formal PT)

**Exercises:**

- \* Quad Sets
- \* Knee extension exercise 90-0 degrees
- \* Terminal knee extension 45-0 degrees
- \* Straight leg raises (flexion/extension)
- \* Hip abduction/adduction
- \* Hamstring curls
- \* 1/4 Squats
- \* Stretching
  - Hamstrings, Gastrocnemius, Soleus, Quads
- \* Bicycle ROM Stimulus
- \* Continue passive knee extension stretch
- \* Continue use of cryotherapy
- \* Discontinue use of TEDS hose at 4 weeks

**Week 4-6**

**Exercises:**

- \* Continue all exercises listed previously
- \* Initiate:
  - Front and lateral step-ups (minimal height)
  - 1/4 front lunge
  - Pool program
  - Continue compression, ice, elevation for swelling

**III. Intermediate Phase (Week 7-12)**

**Goals:**

- 1) Progression of ROM (0 to 120 degrees and greater)
- 2) Enhancement of strength/endurance
- 3) Eccentric/concentric control of the limb
- 4) Cardiovascular fitness
- 5) Functional activity performance

**Criteria to enter Phase III**

- 1) Range of motion 0-110 degrees
- 2) Voluntary quadriceps muscle control
- 3) Independent ambulation
- 4) Minimal pain/inflammation

**Week 7-10**

**Exercises:**

- \* Continue all exercises listed in Phase II
- \* Initiate progressive walking program
- \* Initiate endurance pool program
- \* Return to functional activities
- \* Lunges, 1/2 squats, step ups (2" to start)
- \* Emphasize eccentric/concentric knee control

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**IV. Advanced Activity Phase (Week 14-26)**

- Goals:**
- 1) Allow selected patients to return to advanced level of function (recreational sports)
  - 2) Maintain/improve strength and endurance of lower extremity
  - 3) Return to normal life style

**Criteria to enter Phase IV**

- 1) Full non-painful ROM 0-115 degrees
- 2) Strength of 4+/5 or 85% of contralateral limb
- 3) Minimal to no pain and swelling
- 4) Satisfactory clinical examination

**Exercises:**

- \* Quad Sets
- \* Straight Leg Raises (flexion/extension)
- \* Hip abduction/adduction
- \* 1/2 squats
- \* Lateral step ups
- \* Knee extension exercise 90-0 degrees
- \* Bicycle for ROM stimulus and endurance
- \* Stretching
  - Knee extension to 0 degrees
  - Knee flexion to 105 degrees
- \* Initiate gradual golf, tennis, swimming, bicycle, walking program