

# REHABILITATION FOLLOWING TOTAL KNEE ARTHROPLASTY

## I. IMMEDIATE POSTOPERATIVE PHASE (DAY 1 TO 10)

### Goals

- Active quadriceps muscle contraction
- Safe (isometric control), independent ambulation
- Passive knee extension to 0 degrees
- Knee flexion to 90 degrees or greater
- Control of swelling, inflammation, bleeding

### DAY 1 TO 2

- Weight Bearing - Walker/two crutches WBAT
- CPM - 20 to 70 degrees as tolerated
- ROM - 0-70°
- Cryotherapy - Commercial unit used continuously or ice 20 min of each hour
- Exercises:
  - Ankle Pumps with leg elevation
  - Passive knee extension exercise
  - Electrical stimulation to quads
  - Straight leg raises (SLR)
  - Quad sets
  - Knee extension exercise 90-30 degrees
  - Hamstring stretches (gentle)

### DAY 4 TO 10

- Weight Bearing - As tolerated
- CPM - 0 to 90 degrees as tolerated
- ROM - 0-90°
- 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

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## II. MOTION PHASE (WEEK 2-6)

### Goals

Improve range of motion

Enhance muscular strength/endurance

Dynamic joint stability

Diminish swelling/inflammation

Establish return to functional activities

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

### WEEK 2-4

- Weight Bearing - WBAT with assisted device
- 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 2-3 weeks (physician's approval)

## 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
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## III. INTERMEDIATE PHASE (WEEK 7-12)

### Goals

Progression of ROM (0 to 120 degrees and greater)

Enhancement of strength/endurance

Eccentric/concentric control of the limb

Cardiovascular fitness

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

Allow selected patients to return to advanced level of function (recreational sports)

Maintain/improve strength and endurance of lower extremity

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