

Total Knee Arthroplasty

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Phase I - Immediate Postoperative Phase (Weeks 0-2)

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

Days 1 - 2

Weight Bearing – Walker/two crutches WBAT

ROM – 0-70 degrees

Cryotherapy – Ice Machine or Bag of ice 20 mins every hour if possible.

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)

Days 4 - 10

Weight Bearing – Walker/two crutches WBAT; can advance to cane

ROM – 0-90 degrees

Cryotherapy – Ice Machine or Bag of Ice at least 3 times per day

Exercises

- Ankle Pumps with leg elevation
- Passive knee extension exercise
- Electrical stimulation to quads
- Straight leg raises (SLR)
- Quad sets
- Knee extension exercise 90-0 degrees
- Hip abduction/adduction

Phase II - Motion Phase (Wks 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 2

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

Weeks 2 - 4

Weight Bearing – WBAT with cane if needed

ROM – 0-110 degrees

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

Weeks 4 - 6

Exercises – continue all exercises listed previously. Initiate:

- Front and lateral step-ups (minimal height)
- ¼ front lunge
- Pool Program
- Continue compression, ice, elevation for swelling

Phase III - Intermediate Phase (Wks 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

- Range of motion 0-110 degrees
- Voluntary quadriceps muscle control
- Independent ambulation
- Minimal pain/inflammation

Weeks 7 - 10

Exercises – continue all exercises listed previously. Initiate:

- Progressive walking program
- Endurance Pool Program
- Return to Functional Activities
- Lunges, ½ squats, step ups (2" to start)
- Emphasize eccentric/concentric knee control

Phase IV – Advanced Activity Phase (Wks 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

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

Exercises – continue all exercises listed previously. Initiate:

- 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, bicycle, walking program