

TOTAL KNEE ARTHROPLASTY REHABILITATION

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 - emphasis on full knee extension
 - 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

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
- ROM - Week 2: 100-105°
Week 3: 110-115°
Week 4: 125°+
- 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
 - Initiate pool program
 - Continue passive knee extension stretch

- Continue use of cryotherapy
- Discontinue use of TEDS hose at 2-3 weeks (physician's approval)
- Begin front lunge & lateral step up week 3
- Begin machine program (gentle) week 4
 - Leg press
 - Hip abduction/adduction

III. INTERMEDIATE PHASE (WEEK 5-12)

Goals

Enhancement of strength/endurance

Eccentric/concentric control of the limb

Cardiovascular fitness

Functional activity performance

CRITERIA TO ENTER PHASE III

1. Range of motion 0-115 degrees
2. Voluntary quadriceps muscle control
3. Independent ambulation
4. Minimal pain/inflammation

WEEK 5-10

- Exercises
 - Continue all exercises listed in Phase II
 - Initiate progressive walking program
 - Initiate endurance pool program
 - Continue closed kinetic chain & machine exercises
 - Progress to entire lower extremity strengthening
 - Return to functional activities
 - Emphasize eccentric/concentric knee control

IV. ADVANCED ACTIVITY PHASE (WEEK 10-26)

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 0-120/125 degrees
 2. Strength of 4+/5 or 85% of contralateral limb
 3. Minimal to no pain and swelling
 4. Satisfactory clinical examination
- Exercises
 - Continue maintenance program
 - Quad Sets
 - Straight Leg Raises (flexion/extension)
 - Hip abduction/adduction
 - 1/2 squats
 - Lateral step ups
 - Knee extension exercise 90-0 degrees
 - Machine weights as tolerated
 - 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