

Inland Orthopaedic Surgery & Sports Medicine

Dr. Ed Tingstad

825 SE Bishop Blvd., Suite 120 Pullman, WA 99163 (509)332-2828

TOTAL KNEE ARTHROPLASTY REHABILITATION PROTOCOL

Phase 1: Immediate Post-Operative Phase (Days 1-10)

Goals:

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

Days 1-2

Weight bearing

- Walker / two crutches WBAT

Continuous Passive Motion

- 0-70° as tolerated if stable wound and no contraindications. Take knee out of CPM several times a day and place in a knee immobilizer with pillows under the ankle (not the knee) to encourage passive knee extension (2 hr 3 x qd)

Cryotherapy

- Commercial unit used or ice pack: 25 minutes 4 times daily

Deep Vein Thrombosis Prophylaxis

- Per physician / TED stockings as ordered

Exercises

- Ankle pumps with leg elevation
- Passive knee extension exercise
- SLR if not contraindicated
- Quad sets
- Knee extension 90-30°
- Knee flexion exercises (gentle)

Days 4-10

Weight bearing

- As tolerated

Continuous Passive Motion

- -5 to 110° as tolerated

Exercises

- Ankle pumps with leg elevation
- Passive knee extension stretch
- Active-assisted ROM Knee flexion
- Quad sets
- SLR
- Hip abduction / adduction
- Knee extension exercise 90-0°
- Continue use of cryotherapy

Gait Training

- Continue safe ambulation

Phase 2: Motion Phase (Weeks 2-6)

Criteria for Progression to Phase 2

- Leg control, able to perform SLR's
- Active ROM 0-90°
- Minimal pain and swelling
- Independent ambulation and transfers
- CPM discontinued after 2 weeks

Goals:

- Improve ROM
- Enhance muscular strength, endurance
- Dynamic joint stability
- Diminish swelling and inflammation
- Establish return to functional activities
- Improve general health

Weeks 2-4

Weight bearing

- WBAT

Exercises

- Quad sets
- Knee extension 90-0°
- Terminal knee extension 45-0°
- SLR (flexion / extension)
- Hip abduction / adduction
- Hamstring curls
- Squats
- Stretching
 - Hamstrings, gastrocnemius, soleus, and quads
- Bicycle ROM stimulus
- Continue passive knee extension stretch

Cryotherapy

- Continue use of cryotherapy

DVT

- Discontinue use of TED stocking at 2-3 weeks (with physician's approval)

Weeks 4-6

Exercises

- Continue all exercises listed above
- Initiate
 - Front and lateral step-ups (min. height)
 - Front lunge
 - Pool program

Cryotherapy

- Continue compression, ice and elevation

Phase 3: Intermediate Phase (Weeks 7-12)

Criteria for progression to Phase 3

- ROM 0-110°
- Voluntary quadriceps muscle control
- Independent ambulation
- Minimal pain and inflammation

Goals:

- Progression of ROM (0-115° and greater)
- Enhancement of strength & endurance
- Eccentric / Concentric control of the limb
- Cardiovascular fitness
- Functional activity performance

Weeks 7-10

Exercises

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

Phase 4: Advanced Activity Phase (Weeks 14-26)

Criteria for progression to Phase 4

- Full, non-painful ROM (0-115°)
- Strength of 4+/5 or 85% of contra lateral limb
- Minimal or no pain and swelling
- Satisfactory clinical examination

Goals:

- Allow selected patients to return to advanced level of function (recreational sports)
- Maintain and improve strength and endurance of lower extremity
- Return to normal lifestyle

Exercises

- Quad sets
- SLR (flexion / extension)
- Hip abduction / adduction
- Squats
- Lateral step-ups
- Knee extension exercise 90-0°
- Bicycle for ROM stimulus and endurance
- Stretching
 - Knee extension to 0°
 - Knee flexion to 105°
- Initiate gradual golf, tennis, swimming, bicycle, walking program