

# CERVICAL ARTHROPLASTY POST-OPERATIVE REHABILITATION PROTOCOL

- No driving while on narcotics
- NSAIDs are okay to help with pain and inflammation
- +/- C-Collar per surgeon
- Initiate PT 1-6 weeks status-post surgery
- No scar mobilization until closure (approximately 6-8 weeks)
- Sedentary occupation- return 1-4 weeks Post-Op
- Manual labor occupation- restricted activity between 6-16 weeks Post-Op
- May initiate jogging after 6 weeks
- Running/sports activities are okay after 3-6 months
- Progress as appropriate

## **Phase 1 (POD 1 - 3 weeks post-op)**

### **Goals:**

- Wound healing (<10 lb lifting limit, NSAIDs are okay)
- Performing ADLs correctly
  - Don/doff shoes, correctly picking items off ground, etc
- Sitting no greater than 30 minutes at a time
- Appropriate sitting posture- suggest using a lumbar roll and cervical/thoracic retracted positioning
- Walking program (30 minutes per day)
- Correct usage of assistive device as indicated

## **Phase 2 (3-6 weeks post-op)**

- Begin regimented PT program (2-3x/week) for recommended 6-8 weeks (12-24 visits)
  - NDI at initial evaluation
  - Education on precautions, prognosis

### **Goals:**

- Pain control (modalities, manual therapy soft tissue mobilization as needed)
- Wound healing (<10 lb lifting limit)
- Begin gentle overhead reaching no sooner than 4 weeks
- Improve endurance
  - Maintain erect posture throughout the day
  - Encourage position changes, limit sitting to 30 minutes
  - Appropriate body mechanics with ADLs (<10 lb weight limit)
  - Reestablish neuromuscular control of cervical and scapulothoracic muscle stabilizers
  - Improve UE and cervical mobility, wean collar usage
  - Continue progressive walking program

### **Suggested Interventions:**

- Ambulation/endurance
  - Progress toward discontinuing assistive devices
  - Initiate aerobic conditioning



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- UBE no resistance/treadmill/recumbent bike
- Cervical/Upper Extremity/Core conditioning
  - Cervical retractions
  - Scapular retractions, shoulder shrugs, scapular clocks
  - Biceps/triceps/shoulder ER/IR/Flex/EXT
  - Fine motor function with hands
  - Core: tra/multifidi/glute med/max isometrics
- Flexibility, mobility
  - Soft tissue mobilization for hypertonic paraspinal muscles
  - Light/gentle cervical AROM with neutral spine
  - Encourage movement
    - Avoid sitting for prolonged periods of time (30-45 mins)
- Balance, POSTURE, gait training
  - Heels together, semi-tandem, tandem, SL stance with eyes open/closed
  - Functional activities
    - Functional movements
      - Bend with knees to reach towards floor
      - Lift close to body
- + / - pool therapy based upon wound healing
- Control pain, inflammation
  - Grade I-II joint mobilizations above/below surgical site for pain
  - Ice/modalities for pain/inflammation
- Facilitate healing of incision (watch for redness, drainage, swelling, etc)

**Avoid:**

- Lifting, push/pulling (yardwork, chores) >20 lbs up to 3 months post-op
- End range cervical stretching/movements
- Overhead lifting

**Other Considerations/Precautions:**

- Consult doctor for return to driving, returning to work
  - Return to work may be shorter for sedentary jobs
- Sitting
  - No longer than 30-45 minutes
  - Good work/home ergonomics
- Avoid lotion/cream, submerging incision underwater until fully healed

**Phase 3 (6 weeks - 3 months post-op)**

**Goals:**

- Return to baseline standing/walking duration and distance
- Achieve functional cervical/shoulder AROM
- Improve UE/cervical strength (<20 lbs through 8 weeks)
- Demonstrate proper posture, ergonomics and work simulation
- Continue progressive walking program
- Independent with home exercise program



### **Suggested Interventions:**

- Progress strength, endurance
  - Aerobic conditioning
    - UBE, treadmill, upright/recumbent bicycle
  - Muscle conditioning of cervical and scapulothoracic spine
    - Cervical isometrics in neutral
    - Incorporate resistance bands/light weights/pulley system including in standing/side-lying/prone including: mid back rows, lat pull downs, high rows, PNF D1/D2 pattern, shoulder ER/IR, shoulder ADD/ABD
    - Dynamic core co-contraction conditioning (2-3x x 10 → 15 → 20)
      - Hook-lying pelvic neutral (hip at 90°): marches → SL heel slide → leg lift c knee ext, dead bugs
      - Bridges with postural cuing
      - Quadruped isometric, unilateral shoulder flexion, bird dogs
      - Prone and side-lying planks (on knees: 5-10 sec)
        - Can trial >2 months post-op
      - LE strengthening with neutral spine (progress with resistance band, 2-3x 10 → 15 → 20)
        - Stability ball wall squats
        - Standing hip abduction, extension
        - Side stepping, side step with shoulder abduction
        - Lunges (forward, lateral, posterior), lunges with military press
  - Mobility/flexibility
    - BUE pectoralis major/minor stretching (supine/standing)
    - Cervical AROM 30 sec x 3 exercises
  - Balance
    - DL → DL, EO → EC, no UE movement, stable → unstable surface, dynamic movements
  - Initiate simulated work activities
  - Pain modulation
    - Grade I-II joint mobilizations above/below surgical site
    - Ice/modalities as needed for pain management

### **Avoid:**

- Lifting >20 lbs up to 2 months post-op

### **Phase 4 (3+ months post-op)**

- NDI at discharge
- Can begin gradual progression back to run/jog/horseback riding/contact sports
- Released to do most anything
  - Gradual progression with lifting and strengthening 5 lbs. per week

### **Goals:**

- Proper sitting/standing posture
- Minimal to no pain with all or most activities
- Return to work/prior level of function or greater
- Within normal limits of cervical AROM and shoulder AROM
- Independent with home exercise program
- Achieve MCID on the Neck Disability Index outcome measure questionnaire

### **Suggested Interventions:**



- Muscle endurance of cervical and scapulothoracic stabilizers
  - UBE (fwd/retro standing), standing cervical retractions, prone off end of table cervical retractions, prone superman's, prone on stability ball Y, T, W, push up plus, rhythmic stabilization training (Thera band/body blade) and medicine ball wall circles.
- Trunk and LE strengthening - 2-4x 10 → 15 → 20
  - Stabilization exercises
    - Bridges
    - Planks
    - Upward/downward chops (cable column)
    - Prone and side-lying planks (5-30 sec)
    - Walkouts/rollouts on stability ball
    - Cable column resistance walking (close to body → away from body or OH)
    - Loaded carries (farmers walks, 90/90 bottoms up, kettle-bell carries)
    - Paloff Press
- Full duty work simulation

**Recommendations for return to work based on physical demand:**

Work Type:	Return to Work:
Sedentary (<10lbs) or Light (frequently 10lbs)	Within 1-6 weeks
Moderate (frequently 20lbs, occasionally 50lbs)	1-6 weeks restrictive duty (less than 10 lbs) 8-12 weeks restricted to less than 40 lbs 12-14+ weeks, return to moderate to full duties
Heavy (frequently 50lbs, occasionally 100lbs)	1-8 weeks, patient may return to light duty if available – no lifting >10 lbs the first 6 weeks and no greater than 20lbs up until 8 weeks  At 8-12 weeks, moderate duty – no lifting >40lbs  At 12-14+ weeks, return to moderate to full duty



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