# Cervical Posterior Fusion Post-Operative Rehabilitation Guidelines

- No driving while on narcotics
- NO NSAIDS, time frame per surgeon
- No Tobacco!
- +/- C-Collar per surgeon order based on history of osteoporosis, poor bone quality noted during surgery or smoker
- Initiate Outpatient PT 12 weeks status-post surgery; Home PT at discharge as needed
- Progress as appropriate

**Phase 1 (POD 1 – 12 weeks)**

- +/- C-Collar x 6 weeks; may have associated c-spine fractures that we were stabilizing with longer duration of collar wear
- Patient specific; typically, home PT for transfer training, mobilization
- Walking (goal of 30 minutes twice per day)
- Typically, will wait to start PT until 12 weeks

**Phase 2 (12 weeks – 16 weeks)**

- Begin regimented PT program (2-3x/wk) as needed
- No overhead lifting/weights
- No cervical ROM exercises or prone exercises until 12 weeks and posterior wound well healed
- Focus on:
    - Basic mobilization & correctly performing ADL
    - Using assisted devices correctly (walker/cane/etc) for those who suffered severe myelopathy issues
    - Endurance (walking on treadmill/track/pool or recumbent bike)
    - Balance; Posture, Proprioception, and Gait training
    - Fine motor function with hands for those with myelopathy
    - +/- Pool Therapy
    - Can begin light strengthening exercises
        - Weight limit of < 8-10 lbs until 3 months post op
            - Can incorporate light weights or resistant bands
- ***Suggested Interventions***
    - UBE (upper body ergometer)
    - Cervical isometrics
        - flexion

        - extension
        - side-bending
        - rotation
    - Bilateral stretching – 3 x 30sec
        - e.g. pec. major/minor, lats, etc.
    - Teach chin tuck and VC for volitional deep cervical muscle contraction
    - Cranio-cervical flexion with visual biofeedback (pressure cuff stabilizer) – constant feedback
        - Inflate to 20 mmHg and place behind neck at suboccipital level while supine → increase pressure by 10 mmHg with upper cervical nod
    - UE strengthening exercises (maintain chin tuck): progress c resistance
        - elbow flex/ext
        - wrist flex/ext
        - grip/hand intrinsics
        - dexterity
    - Scapular stabilization exercises (dumbbells):
        - Side-lying: ER
        - supine: punches
    - Shoulder shrugs & rolls, scapula retraction/depression
    - Soft tissue mobilization for hypertonic paraspinal muscles
    - Postural education and cueing (shoulders back, chest out and up)
    - Ice/modalities for pain/inflammation (no U/S)
    - Education: review precautions, anatomy/biomechanics, surgical procedure, prognosis, etc.
- **Avoid**:
    - Overhead activity until after 3 months post op
    - Cervical ROM exercises until > 12 weeks post op.
- **Considerations**
    - Consult doctor for return to driving
    - Avoid lotions/creams or submerging incision under water until fully healed

- ***Goals:***
    - ↓ pain, 0-2/10 pain at rest
    - Improve UE strength/mobility
    - Progressive walking program
    - Progress exercises once patient demonstrates proper form/technique and control of neutral spine with each repetition

**Phase 3 (16+ weeks)**

- Continue to progress strength & endurance with goal to return to baseline standing/walking duration & distance
- ***Suggested Interventions***
    - UBE (upper body ergometer)
    - Bilateral stretching – 3 x 30sec
        - e.g. pec. major/minor, lats, etc.
    - Gentle Cervical AROM (all directions), shoulder shrugs & rolls, scapula retraction/depression.
    - Teach chin tuck and VC for volitional deep cervical muscle contraction
    - Cranio-cervical flexion with visual biofeedback (pressure cuff stabilizer) – constant feedback
        - Inflate to 20 mmHg and place behind neck at suboccipital level while supine → increase pressure by 10 mmHg with upper cervical nod
    - UE strengthening exercises (maintain chin tuck): progress c resistance
        - elbow flex/ext
        - wrist flex/ext
        - grip/hand intrinsics
        - dexterity
    - Scapular stabilization exercises (dumbbells):
        - Side-lying: ER
        - supine: punches
    - Scapular stabilization exercises:
        - standing: rows, extension, hor. abd, ER (Theraband or cable column)
        - prone (on stability ball): Y, T, W (dumbbells)

        - standing (facing wall): push-up plus
        - standing (back to wall): arm slide for low trap activation
        - standing: PNF D1/D2 patterns (Theraband or cable column)
        - rhythmic stabilization/perturbations (Theraband or BodyBlade)
        - wall circles (medicine ball)
    - Shoulder shrugs & rolls, scapula retraction/depression
    - Soft tissue mobilization for hypertonic paraspinal muscles
    - Postural education and cueing (shoulders back, chest out and up)
    - Scar mobility/cross friction massage at (12 + weeks)
    - Ice/modalities for pain/inflammation (no U/S)
    - Computer/desk ergonomic workstation
        - arm's length away
        - top of screen in line with forehead
        - elbows and hips at 90°
        - wrists neutral/keyboard downward slope
        - mouse same height as keyboard
        - sit in swivel chair to avoid twisting
    - Education: review precautions, anatomy/biomechanics, surgical procedure, prognosis, etc.

- **Considerations**
    - Avoid lotions/creams or submerging incision under water until fully healed
    - Consult doctor for return to work
        - Shorter for sedentary jobs

- ***Goals:***
    - ↓ pain, 0-2/10 pain with most activities, 0/10 with rest
    - Improve scar mobility
    - Reestablish neuromuscular control of deep cervical stabilizers
    - Volitional contraction of deep neck flexors for 5 x 5 sec
    - Improve UE strength/mobility

- Verbalize proper workstation set-up
- Verbally understands the return-to-work progression
- Independent with HEP
- Progress exercises once patient demonstrates proper form/technique and control of neutral spine with each repetition
- Light progressing to Full work simulation activities
- Able to tolerate work simulation activities without increase in symptoms
- Complete progressive walking program
- Achieve *Neck Disability Index* MCID

**Progressive walking program** – begin post-op Day 1

| **Distance** | **Time** |
|---|---|
| 1 mile | 20min at 6 weeks |
| 2 miles | 30min at 9 weeks |
| 3 miles | 45min at 12 weeks |

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

| **Work Type:** | **Return to Work:** |
|---|---|
| Sedentary<br>(<5-8 lbs) or Light (frequently 5 lbs) | Within 6-12 weeks |
| Moderate<br>(Frequently 20lbs, occasionally 50lbs) | 6-12 weeks restrictive duty (less than 5-8 lbs)<br>Next 3-4 weeks (week 12-16 post op) may start to increase weight tolerance by 5# every other week and no overhead lifting<br>Week 16+ post op, return to moderate to full duties progressing 5 lbs every other week starting week 12 |
| Heavy (frequently 50lbs, occasionally 100lbs) | Week 6-12 post op, patient may return to light duty if available – no lifting >5-8 lbs the first 12 weeks, no overhead reaching<br>Next 3-4 weeks (week 12-16 post op) may start to increase weight tolerance by 5# every other week and no overhead lifting<br>Week 16+ post op, return to moderate to full duties progressing 5 lbs every other week starting week 12 |

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