

# POSTERIOR CERVICAL FUSION CLINICAL CARE GUIDELINE

## **Phase 1 (POD 1 – 6 weeks)**

- +/- C-Collar x 6 weeks; may have associated c-spine fractures that we were stabilizing. Patient specific
- Typically, will wait to start PT until > 6 weeks

## **Phase 2 (6weeks – 8 weeks)**

- Begin regimented PT program (2-3x/wk) as needed
- No overhead lifting/weights
- No cervical ROM exercises or prone exercises
- 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 < 20 lbs until 3 months post op
      - Can incorporate light weights or resistant bands
- ***Suggested Interventions***
  - UBE (upper body ergometer)
  - 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):
    - sidelying: 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 2 months post op
    - Running/horseback riding for at least 6 months
    - Cervical ROM exercises until > 8 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 (8 weeks – 3 months/12 weeks)**

- Continue to progress strength & endurance with goal to return to baseline standing/walking duration & distance
  - Typically most post op patients at this time will be totally out of c-collar
  - Weight limit < 20 lbs
  - May be appropriate to start home regimen instructions
- **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 intrinsic
  - dexterity
- Scapular stabilization exercises (dumbbells):
  - sidelying: ER
  - supine: punches
- Shoulder shrugs & rolls, scapula retraction/depression
- Joint mobilizations (grades I-II) above/below surgical site for pain modulation
- Thoracic spine joint mobilizations (grades III-IV) or on foam roll
- Soft tissue mobilization for hypertonic paraspinal muscles
- Postural education and cueing (shoulders back, chest out and up)
- Scar mobility/cross friction massage at (10-12 weeks)
- Ice/modalities for pain/inflammation (no U/S)
- Computer/desk ergonomic workstation
  - arms 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

- Consult doctor for return to driving
- 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 at 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
- Progressive walking program
- Independent with HEP
- Progress exercises once patient demonstrates proper form/technique and control of neutral spine with each repetition
- D/C collar/brace per surgeon's orders

#### **Phase 4 (3months – 6months)**

- Continue progressing activity strengthening
  - Increase weight by 5 lbs per week as long as patient is tolerating ok
- May start using elliptical for more cardio exercises
- May take NSAIDs at this time

- **Suggested Interventions**

- UBE (forward & backward)
- Gentle Cervical AROM (all directions), shoulder shrugs & rolls, scapula retraction/depression
- Cranio-cervical flexion with pressure cuff stabilizer
  - Inflate to 20 mmHg and place behind neck at suboccipital level while supine → increase pressure by 10 mmHg with upper cervical nod
- Cervical isometrics
  - flexion
  - extension
  - side-bending
  - rotation
- 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)
- Cervical retraction (off end of table)
  - prone
  - supine
  - sidelying
- Thoracic spine joint mobilization/manipulation (grades IV-V)
- Light progressing to Full work simulation activities

• **Goals:**

- Volitional contraction of deep neck flexors for 10 x 10 sec
- 0/10 pain with all or most activities
- Able to tolerate work simulation activities without increase in symptoms
- Verbally understands the return to work progression
- Complete progressive walking program
- Independent with HEP
- Achieve *Neck Disability Index* MCID

**Phase 5 (6months +)**

- May initiate jogging/running/horseback riding
- Should be able to return to most recreational activity/sports
- May take NSAIDs now (Ibuprofen, Aleve, Naproxen, Motrin, etc.)

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

<b>Distance</b>	<b>Time</b>
1 mile	20min at 6 weeks
2 miles	30min at 9 weeks
3 miles	45min at 12 weeks



## **Reviewers**

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