Lumbar Laminectomy Post-Operative Rehabilitation Guidelines

- No driving while on narcotics
- No brace typically
- No scar mobilization for 3 months
- Education booklet prior to surgery (include smoking cessation)
- Progress as appropriate...all patients progress at different rates

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

Focus:

- Mobilization, correctly performing ADLs
    - Putting shoes on, correctly picking items off ground, etc
- Ambulation, endurance, posture
- Correct usage of assistive device
- Walking (goal of 30 minutes twice per day)

Phase 2 (3-6 weeks post-op)

- Begin regimented OP PT (2-3/week) for recommended 6-8 weeks (12-24 visits)
    - ODI + FABQ at initial eval
        - FABQ at 6th visit as well
    - Education on precautions, anatomy/biomechanics, surgery, prognosis

Goals:

- Reduce pain (0-2/10 at rest)
- Maintain erect posture throughout 80% of the day
    - Encourage position changes, limiting sitting
    - Appropriate body mechanics
    - Reestablish neuromuscular control of lumbar stabilizers
    - Volitional contraction of TA, lumbar multifidi for 5 x 5 seconds
    - Improve LE strength/mobility
    - Demonstrate appropriate functional movement within precautions
    - Continue progressive walking program

Focus:

- Ambulation/endurance
    - Progress toward discontinuing assistive devices
    - Initiate aerobic conditioning
        - treadmill/track walking, recumbent bike
- Strengthening (legs, core, back)
    - Use light weights/pully system/resistance bands (note weight restriction for 3 mos)
    - maintain neutral spine – 2 x 10,15,20 (progress c resistance bands):
        - wall squats
        - supine abdominal crunch (not a sit-up)

        - hook-lying bent knee fall outs
        - side-lying hip abduction/clamshells
        - prone hip extension
- Flexibility, mobility
    - Soft tissue mobilization for hypertonic paraspinal muscles
    - Bilateral LE stretching 3 x 30-45 seconds
        - gastroc/soleus, hamstrings, hip flexor
    - Encourage movement
        - Avoid sitting for prolonged periods of time (30-45 mins)
- Balance, POSTURE, gait training
    - Neuromuscular activation of lumbar stabilizers (multifidi, TA)
        - Abdominal isometrics, drawing in maneuver for TA, VC for volitional multifidus contraction
        - Diaphragmatic breathing
    - Maintain neutral spine (pelvic tilt, lumbar lordosis)
        - Pelvic Tilts (all directions)
    - Stabilization/functional activities
        - Lumbar stabilization 2x10 → 15 → 20
            - Hook-lying pelvic neutral (hip at 45°): marches → SL heel slide → leg lift c knee ext.
            - Dead bug: alt UE → alt. LE → alt. opposite UE/LE
            - Bridges
            - Bird Dog: alt. UE → alt. LE → alt. opposite UE/LE
            - Pelvic tilts
        - Functional movements
            - Bend with knees to reach towards floor
            - Shift weight, avoid twisting
            - Lift slow and close to body
            - Bring feet/leg up to self when donning/doffing socks, shoes
            - Scoot to front of chair before standing
- + / - pool therapy
- Control pain, inflammation
    - Ice/modalities for pain/inflammation - NO U/S
- Facilitate healing of incision (watch for redness, drainage, swelling, etc)

<u>Suggested components for daily HEP:</u>

- o Pain management - PRN
- o Stretches as appropriate
- o LE strengthening with neutral spine
- o Postural awareness/pelvic tilts

- Abdominal hollowing/abdominal isometrics (in isolation and with extremity movement)
- **Progressive walking program** – walk as tolerated, wear pedometer, track # of steps
  - 1 mi in 20 mins at 6 weeks

Avoid:
- Lifting, push/pulling (yardwork, chores) >20 lbs up to 3 months post-op
- Stationary bike, rower
- Deep flexion/extension at hips
- Lumbar hyperextension
- Combination movements (bending, lifting, twisting at waist...BLTs)
- NO U/S

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 mins
  - Back support, with feet flat, knees level with hips
- 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
- Discharge visual biofeedback after 3-4 weeks
- Maintenance of trunk co-contraction throughout therapeutic activities
- Volitional contraction of TA and lumbar multifidi for 7 x 7 sec
- Maintenance of neutral spine during therapy interventions
- Improve trunk and LE strength
- Achieve functional ROM
- Demonstrate proper ergonomics and work simulation
- Continue progressive walking program
- 0-2/10 pain with activity
- Independent with HEP

Focus:
- Progress strength, endurance
  - ONLY IF LAMINECTOMY, NO DISCECTOMY can increase weight by 5 lbs every other week as tolerable
  - Aerobic conditioning
    - Walking, treadmill
  - Muscle strength of lumbar stabilizers (multifidi, TA)

- Abdominal isometrics/hollowing
- Dynamic, completing with trunk-co contraction (2-3x x 10 → 15 → 20)
    - Hook-lying pelvic neutral (hip at 90°): marches → SL heel slide → leg lift c knee ext.
    - sitting or standing pelvic neutral: alt. UE → marching → marching c alt. UE
    - SL bridges or DL c marches
    - prone and side-lying planks (on knees: 5-10 sec)
        - Can begin 2 months post-op
    - standing isometric core resistance c Theraband
    - standing pelvic neutral: shoulder ext, hor. abd., row, D1/D2 c Therband (bil → uni)
- LE strengthening with neutral spine (progress with resistance band, 2-3x 10 → 15 → 20)
    - Stability ball wall squats
    - Standing hip abduction, extension
    - Side stepping
    - Lunges (SP, FP)
    - SL deadlift

- Control pain/inflammation
- Trunk and LE mobility/flexibility
    - Dynamic BLE stretching (gastroc/soleus, hamstrings, hip flexor)
    - Lumbar spine ROM (flex/extension)
        - Quadruped rocking, cat/camel, prayer stretch
- Balance
    - DL → DL, EO → EC, no UE movement, stable → unstable surface
- Begin light ergonomics and simulated work activities
- Pain modulation
    - ice/modalities - NO U/S

Suggested components for daily HEP:

- Stretches and ROM
- Trunk and LE strengthening/stabilization
- **Progressive walking program**
    - 2 mi in 30 mins at 9 weeks
    - 3 mi in 45 mins at 12 weeks

Avoid:

- Lifting >20 lbs up to 3 months post-op
- NO U/S

Phase 4 (3+ months post-op)

- Can do scar mobilization at 3 months (Cross friction massage)
- ODI + FABQ at discharge
- Released to do most anything
    - Gradual progression with lifting
        - Extreme caution when lifting from ground...use good body mechanics, kneel down
        - Always avoid lifting with combo movements that require deep fwd hip flexion/bending/twisting...increases risk of re-herniation.
    - Gradual progression with strengthening

Goals:

- Volitional contraction of TA and lumbar multifidi 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 *Oswestry Disability Index* MCID

Focus:

- Muscle endurance of lumbar stabilizers (multifidi and TA)
- Trunk and LE strengthening - 2-4x 10 → 15 → 20
    - Stabilization exercises
        - bridges on Dynadisc or BOSU
        - upward/downward chops (cable column)
        - prone and side-lying planks (off knees: 5-10 sec)
        - walkouts/rollouts on stability ball
        - cable column resistance walking (close to body → away from body or OH)
        - prone superman's
    - LE strengthening with neutral spine 2-4x 10 → 15 → 20 c progressive resistance or on unstable surface
        - squats (DL → SL)
        - SL deadlift on Dynadisc or BOSU
        - lateral band walks
        - lunges (add TP)
        - stability ball H/S curl
- Full duty work simulation
- High level balance activities
    - Rebounder toss, medicine ball rotations on stability ball, etc
- Aerobic conditioning
    - walking/treadmill

Suggested components for daily HEP:

o Maintenance therapy including lumbar stabilization exercises, trunk and LE strength/mobility, proper lifting, and functional movement, etc.

o **Continue progressive walking program**

Recommendations for return to work based on job type:

Work Type:	**Return to Work:**
Sedentary (<10lbs) or Light (frequently 10lbs, occasionally 20lbs)	After 6-8 weeks, with limited sitting duration for 30 min at a time for 6 weeks
Moderate (frequently 20lbs, occasionally 50lbs)	At 8-10 weeks, patient may return to light duty if available – no lifting >10lbs At 12-14 weeks, return to full duty – no lifting >25lbs
Heavy (frequently 50lbs, occasionally 100lbs)	At 8-10 weeks, patient may return to light duty if available – no lifting >10lbs At 12-14 weeks, moderate duty – no lifting >25lbs At 20-22 weeks, return full duty

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