

# **Lumbar Laminectomy/Decompression Post-Operative Rehabilitation Guidelines**

- No driving while on narcotics
- No brace typically
- No scar mobilization for 6months
- 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 UE/LE
    - Bridges
    - Birg 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)

**Suggested components for daily HEP:**

- Pain management - PRN
- Stretches as appropriate
- LE strengthening with neutral spine
- 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 (2-3 x 10 → 15 → 20)
      - Hook-lying pelvic neutral (hip at 90°): marches → SL heel slides → 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, 2-3 x 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 → \_E\_C, no UE movement, stable → unstable surface
- Begin light ergonomics and simulated work activities
- Pain modulation
  - ice/modalities
    - ok for U/S after 8 weeks

**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

## **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 - 2-4 x 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 2-4 x 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:**

- Maintenance therapy including lumbar stabilization exercises, trunk and LE strength/mobility, proper lifting, and functional movement, etc.
- **Continue progressive walking program**

**Recommendations for return to work based on job type:**

**Work Type:**

Sedentary (<10lbs) or Light (frequently 10lbs, occasionally 20lbs)

Moderate (frequently 20lbs, occasionally 50lbs)

Heavy (frequently 50lbs, occasionally 100lbs)

**Return to Work:**

- After 6-8 weeks, with limited sitting duration for 30 min at a time for 6 weeks
- 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
- 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

**Return to Sport Guidelines (discuss with Dr. Krob if any concerns exist):**

<b>Activity</b>	<b>No earlier than</b>	<b>Activity</b>	<b>No earlier than</b>
<i>Walking Progression</i>	<i>At least 30 minutes per day</i>	<i>Skiing</i>	<i>12-16 weeks</i>
<i>Stationary Bike</i>	<i>Gradual increase in resistance over 4 weeks</i>	<i>Yoga</i>	<i>12-16 weeks</i>
<i>Hiking</i>	<i>6 weeks</i>	<i>Swimming</i>	<i>6 weeks (incision entirely healed)</i>
<i>Outdoor Biking</i>	<i>8 weeks</i>	<i>Running</i>	<i>12-16 weeks</i>
<i>Pilates (neutral spine)</i>	<i>8 weeks</i>	<i>Golf</i>	<i>12-16 weeks</i>
<i>Elliptical</i>	<i>8 weeks</i>	<i>Soccer/Basketball/Contact sports</i>	<i>16 weeks (Contact sports clear with Dr. Krob)</i>

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