Lumbar Disc Replacement Physical Therapy Prescription

The intent of this protocol is to provide guidelines for rehab. It’s not intended as a substitute for clinical decision making.

If any of the following occur, contact Dr. Poulter and hold off on physical therapy:
- Any signs of infection
- Worsening of radicular symptoms, including progressive weakness
- Unexpectedly high self-reports of pain in comparison to pre-surgical state

Progress patients with multi-level fusions slower and more cautiously.

Phase I (0 to 12 Weeks): Protective Phase

Therapy
- First visit at two weeks post-op (outpatient)

Precautions
- Avoid bending, twisting, lifting, pushing and pulling **15 pounds or more for two weeks**.
- Limit sitting, including in the car, to no more than 30 minutes at a time (standing/walk breaks).
- No extension range of motion, nor rotation exercises, for eight weeks.

Goals
- Diminish pain/inflammation, minimize lower extremity radiating symptoms (ice, modalities as needed)
- Learn correct body mechanics, transfers, positioning
- Achieve proper muscle firing for transverse abdominis, multifidi and glutes
- Focus on walking program, increasing tolerance to 10 minutes or more, two times a day

Education
- **Postural Education:** Upright sitting posture with lumbar roll at all times, frequent changes in positions and sleeping positions
- **Body Mechanics:** Light lifting, transfers (include log rolling), positioning, etc.
Exercises

- **Walking Program:** Begin one to two times a day for 10 minutes or less. Continue to progress as tolerated.
- **Transverse Abdominis Bracing:** 10” isometrics with normal breathing (without pelvic tilt)
- **Multifidi:** 10” isometrics with normal breathing in prone (if able to tolerate)
- **Glute Set:** 10” isometrics with emphasis on proper glute firing
- **Light Stretching:** Hip flexors, quads, hamstring, gastrocs

Phase II (2 to 6 Weeks): Initial Strengthening Phase

**Therapy**

- One to two times per week for four or more weeks

**Precautions**

- Keep spine in neutral for strengthening with a focus on proper neuromuscular control. Do not progress without good control.
- **Lifting Restrictions:** Begin at 20 pounds and slowly increase to no restrictions at week six
- No extension range of motion. No rotation exercises for eight weeks.

**Goals**

- Complete light strength training with a neutral spine and correct firing of stabilization muscles
- Able to tolerate at least 30 minutes of cardio a day
- Release soft tissue restrictions/muscle spasm (monitor incision region)
- Independent with body and lifting mechanics

**Strength**

*Only initiate these once patient can complete Phase I exercises. Then begin with light resistance and slowly progress. Emphasize good posture during each exercise and correct muscle firing of transverse abdominis. (This is not a complete list.)*

- **Transverse Abdominis/Multifidi Progression** *(maintain neutral spine)*
  - Start at table (supine, prone, quadruped) 10” isometrics
  - Progress with lower extremity/upper extremity movements (eg.: marches, straight leg raises, upper extremity lift and lowers, planks, etc.)
  - Progress to weight bearing, balance, Swiss Ball, reformer, etc.
  - Progress to multi-planar exercises with upper extremity/lower extremity's while maintaining a neutral spine only *(no twisting)*.

- **Continue with Proper Glute Activation Exercises**
  - Eg.: prone hip extensions, bridges, side lying clams, side lying 90/90 leg lifts, side lying abduction, quadruped hip extension, bird-dog

- **Lower Extremity and Upper Extremity Strength Training** *(once proper transverse abdominis and glit firing achieved)*
  - Step ups, leg press, wall squats, squats, etc.
  - **Balance** *(with transverse abdominis bracing)*: Single leg stance, tandem, foam, etc.
  - Upper extremity light resistive exercises (machines, Theraband, free weights)

**Flexibility**

- **Stretching:** Hamstrings, gastroc/soleus, quadriceps, hip flexors, piriformis, etc.
- **Neural Mobilization:** Performed as needed, gentle with caution not to flare up nerve roots

**Aquatic Physical Therapy** *(less than four weeks if available once incision has healed)*

- No rotation and transverse abdominis bracing during all exercises
- Walking all directions, balance, lower extremity and upper extremity strengthening
Phase III (6 to 8 Weeks): Progression to Advanced Strengthening

Therapy
- One to two times per week (as needed for return to sport or work)

Precautions
- No extension range of motion. No rotation exercises for eight weeks.

Goals
- Independent home exercise program for advanced strengthening, return to sport and work
- Increase lower quarter flexibility and strength with focus on proper transverse abdominis and glute activation
- Typically released to full activities without restrictions at six to eight weeks (when approved by Dr. Poulter)

Strength
- Advanced core strength and stabilization exercises:
  - Progress to weight bearing, balance, Swiss Ball, reformer, etc.
  - Progress to multi-planar exercises with lower extremities and upper extremities
  - Progress lower extremity/upper extremity strengthening
  - Begin running, agility and plyometrics for return to sport at 8 to 12 weeks (if symptoms stable and cleared by Dr. Poulter)
- Possible referral to work reconditioning program

Flexibility
- Lumbar spine more than eight weeks: work on improving lumbar extension range of motion, but avoid end-range
  - Eg.: prone lying, prone on elbows, press-ups and/or gentle standing extensions (if no peripheralization)

Cardio
- Time frames may vary per patient, consult with Dr. Poulter if you have questions (eg.: an avid cyclist with proper bike fit might start sooner).
- Emphasize correct form and equipment setup (eg.: elliptical, bike, walking terrain, etc.).
- Preference of Pilates over yoga. If returning to yoga, ensure it with an experienced instructor.
- When initiating running and sports below, slowly increase in the 8 to 12 week time frame.

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<thead>
<tr>
<th>Activity</th>
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<tbody>
<tr>
<td>Walking</td>
<td>Continue to progress</td>
<td>Outdoor Biking</td>
<td>Six weeks</td>
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<tr>
<td>Stationary Bike</td>
<td>Add resistance</td>
<td>Skiing</td>
<td>Eight weeks</td>
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<tr>
<td>Swimming</td>
<td>Six weeks</td>
<td>Yoga</td>
<td>Eight weeks</td>
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<td>Pilates</td>
<td>Six weeks</td>
<td>Running</td>
<td>8 to 12 weeks</td>
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<tr>
<td>Hiking</td>
<td>Six weeks</td>
<td>Soccer/Basketball</td>
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<tr>
<td>Elliptical</td>
<td>Six weeks</td>
<td>Golf</td>
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