



# PALM BEACH ORTHOPAEDIC INSTITUTE

KYLE A. PETERSEN, M.D.

## Lumbar Fusion 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. Petersen 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

*Patients with multi-level fusions may progress slower and more cautiously*

### Phase I (0 to 12 Weeks): Protective Phase

#### Precautions

- Avoid bending, twisting, lifting, pushing and pulling 15 pounds or more for twelve weeks
- Wear Lumbar brace as directed
- Limit sitting, (including in a car for) for more than 30 minutes, take walking/standing breaks

#### 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 30 minutes two times a day

#### Education

- Postural Education: Sitting posture with lumbar roll at all times; frequent change in positions; 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 to at least 30 minutes.
- **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
- **Neural Mobilization:** Performed as needed, gentle with caution not to flare up nerve roots
- **Light Stretching:** Hip flexors, quads, hamstring, gastrocs

### Phase II (12+ weeks): Strengthening Phase

#### Precautions

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- Keep spine in neutral for all strengthening and make sure to achieve proper neuromuscular control of transverse abdominis before progressing exercises.
- Lifting: During weeks 12 through 24, gently progress up to 40 pounds. After 24 weeks, progress per Dr. Petersen's orders.
- Minimize any rotation exercises long-term (even after fully healed).
- Full healing takes up to six months. Patients are cautioned not to overdo their activities before this time.

## Goals

- Complete light strength training with a neutral spine and correct firing of stabilization muscles
- Release soft tissue restrictions, muscle spasms, scar
- Increase aerobic endurance less than 30 minutes
- Body mechanics review (see above)

## Flexibility

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

## Strength

*Only initiate these once patient can complete Phase I exercises. Then begin with light resistance and slowly progress. Emphasize good posture 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 lower extremity/upper extremity 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 glut 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)

## Cardio

- Time frames may vary per patient, consult with Dr. Petersen if you have questions.

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- (Eg.: an avid cyclist with proper bike fit might start sooner)
- Emphasize correct form and equipment setup (eg.: elliptical, bike, walking terrain, etc.)
- Prefer Pilates over yoga. If returning to yoga, ensure it's with an experienced instructor.
- When initiating running and sports below, slowly increase in the six month time frame.

## 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 (16+ Weeks): Return to Work/Work Conditioning/ Return to Sport

- Functional/sport/job drills may begin now with supervision
- Possible referral to work reconditioning programs

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

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