

Anterior 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. Krob 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 15-20 pounds or more for twelve weeks*
- *Wear Lumbar brace as directed, if indicated*
- *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 (supine with pillow under knees/legs; side with pillow between knees)*
- *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

- *Keep spine in a neutral position 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 as tolerated*
- *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 Krob 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.)*
- *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
<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</i>	<i>8 weeks</i>	<i>Golf</i>	<i>12-16 weeks</i>

<i>spine)</i>			
<i>Elliptical</i>	<i>8 weeks</i>	<i>Soccer/Basketball /Contact sports</i>	<i>16 weeks (Contact sports clear with Dr. Krob)</i>