Lumbar Decompression/Fusion Protocol

Phase 1: Initial evaluation (PT to Begin At 6 Weeks Post-op)

Rehabilitation Goals	• Educate patient on physical therapy and expectations of recovery • Pain/surgical sequelae management via passive and active modalities • Protect surgical site, promote bone healing and lumbar AROM within tolerance • Discharge of any brace unless instructed otherwise • Maintain LE and lumbar mobility • Initiate walking program if not done so already
Precautions	• BLT- avoid excessive bending/lifting/twisting • Avoid lumbar stretching with OP
Interventions	**Edu:** • Gradual reintroduction of lifting/functional activities (10# initially, progress slowly), return to driving if narcotics d/c • Scar management with gentle mobilization, may benefit of scar care lotion **Modalities:** heat prior to PT, ice after PT, TENS/IFC (if needed) **Manual Therapy:** • STM lumbar paraspinals • Thoracic GR I-II joint mob • Scar mobilization **Therex:** • Isometrics: TrA holds, glute set, ADD/ABD isos, hooklying hip flexor iso • Nerve glide/flossing: Seated and supine • Lumbar/hip mobility: SKTC, figure 4 stretch, piriformis stretch, mid-range LTR
Red/Yellow flags	• Incision: s/s of infection/cellulitis • Pain: normal to have pain but should be improving and should not be excessive at this time • Neurological: some symptoms may persist and new symptoms may arise due to post-op swelling. Symptoms should not be worsening significantly. Monitor for myelopathic symptoms. • ROM: excessive loss • Fear avoidance behavior

Phase 2: weeks 6–12

Rehabilitation Goals	• Continue protecting surgical site • Progress strength and mobility exercises • Improve functional tolerance • Edu on proper postural control/ergonomics
Precautions	• No impact activities until 12-weeks • Avoid excessive lifting/carrying (gradually increase from 10# restriction in phase 1)

Interventions	**Modalities and Manual therapy:** Continue as necessary, should be discontinued by end of this phase
	Activity progressions:
	• Mobility
	  • Supine/seated hamstring stretch, prone quad stretch, standing hip flexor/adductor stretch
	  • Full LTR, DKTC, open book, child's pose/seated prayer stretch, foot on step flexion stretch
	• Progressive loading: abdominal/TrA activity cued during all exercises
	  • Supine: pelvic tilting, march, dead bug variations, bridge variations
	  • Side lying: clamshell/reverse > hip abd, side plank variations
	  • Prone: hamstring curl, windshield wiper, shoulder/hip lifts UL/BL
	  • Quadruped: cat/camel, bird dog variations, plank variations, push-up variations
	  • Standing: pelvic tilts, anti-ext/flx/rot/side bend variations
	  • Functional: Step taps > hurdle walking, sit to stand > squat, step up > heel tap > slider lunge > split squat/ground transfers
	  • Machine resisted: Leg press, leg curl, leg extension with light resistance

Phase 2: weeks 6–12 (Continued)	
Interventions	• Functional resistance training (lifting/carrying/pushing/pulling/overhead activities) as patient approaches 8-10 weeks post-op • Balance/proprioceptive training • Cardiovascular training- Bike, TM, Elliptical
Progression Criteria	• Adequate tolerance to activity progressions made • Min pain/limitations with functional activities/PT interventions

Phase 3: (12+ weeks)	
Rehabilitation Goals	• Continue to progress axial/LE loading • Introduce impact activities if needed • Work hardening if necessary • Return to PLOF

Interventions	**Activity progressions:**
	• Return to work, non-contact sporting activities and higher-level activities including swimming, jogging, agility and racket sports
	   • See interval return to sport protocols
	• No contact sports for 12+ months
	• Lifting/carrying progressions:
	   • Hip hinge > RDL > kb dead lift from box > kb dead lift from ground
	   • Lift and carry from box/table > lift and carry from ground > farmer's carry > chaos carry
	Education
	• Mobility, strength and residual pain/neurological symptoms will continue to improve slowly over the course of 12-18 months
	• Multilevel fusion will regain less mobility as compared to single level
	• Some neurological deficits will take over a year to improve, others may be permanent based off patient condition prior to surgery