

# Northern New England Spine Center

## Post-Op Lumbar Fusion Protocol

<p><b>Brace Schedule:</b>  <i>Non-Instrumented Fusion</i>          0 to 6 weeks s/p surgery: Wear hard shell and soft shell          6 to 12 weeks s/p surgery: Soft portion of brace only          12 weeks: Wean out of soft brace</p>	<p><b>Scheduled Follow Up Visits with Physician:</b>          3 Week follow up          6 Week follow up          3 Month follow up          Optional 6 Month follow-up is dependent on the case or any change in status</p>
<p><i>Instrumented Fusion</i>          0 to 3 weeks s/p surgery: Wear hard shell and soft shell          3 to 6 weeks s/p surgery: Wear soft portion of brace only          6 weeks: Wean out of the soft brace.</p>	<p><b>Restrictions:</b>          No Lifting greater than 10# for 6 weeks.          No sitting (including driving) for greater than 30 minutes for 6 weeks          No end range bending and twisting for 6 weeks          No Smoking          Avoid NSAIDs for 3 months after fusion surgery</p>

\*De-bracing per discretion of the therapist is allowed while under direct supervision of therapist while in treatment session.

Evaluation:

- Hx: pre-morbid activity level/condition? Return to work plans?
- Pain: Local vs. radicular sx's, medication management, iliac crest donor site pain, symptoms prior to surgery compared to now- identify any residual symptoms?
- AROM: Defer end range trunk AROM, may observe patient's functional mobility and document limitation in ROM
- Flexibility: Hamstring, Hip Flexor, Deep Hip External Rotators and Achilles (care for neural tension irritation with hamstring assessment)
- Neuro: Myotomes, Dermatomes, DTR's, Slump/SLR
- Palpation: scar integrity, myofascial pain
- Strength: assess TA contraction, multifidus recruitment, trunk stability/control, hip girdle strength
- Gait: assess gait pattern- residual foot drop or quad weakness?

Education:

- Review above restrictions
- Spine neutral position education- household ADLs and driving
- Review sleeping postures/positioning
- Correct back brace education and proper use
- Review postural irritants- neural tension
- Home exercise program to complement fitness
- Support walking program and issue pedometer and walking log

Encourage an active lifestyle, join gym/fitness center, consisting of a cardiovascular component to increase heart rate 30 minutes a day for at least 3 days a week. Health status is worse with a patient with higher BMI. Obese patients displayed more severe pain symptoms than non-obese spine patients.<sup>1</sup> Encourage a safe, gradual increase in the activity level of the patient with the end goal being an active lifestyle.

#### Body Mechanics:

- Review Proper log roll and sidelying <-> sitting
- Review sit to stand functional squat, starting very shallow and progressing as their strength allows
- Review spine safe movements for ADLs (stair ambulation, light house cleaning etc)
- Review lifting techniques at 6 weeks s/p- partial lunge, squat, hip hinge movement for reaching- with proper breathing technique with lifting.<sup>2</sup>
- Review driving position
- Review ergonomic/work set up and change accordingly

#### Treatment:

The primary focus on post-op rehab should be on education and core stabilization and conditioning.(Strong Evidence)<sup>3</sup> There is evidence that strengthening exercises help with chronic low back pain, all treatment should be specific, tailored and appropriate for the patient.<sup>4</sup>

- Review spine neutral stabilization (position of comfort) using motor control exercises (MCE) to stabilize the core during movement and exercise.<sup>5,6,7</sup>
- Lower extremity strength and conditioning with a focus on hip and knee musculature in preferably closed chain fashion.
- Progress the patient from supine to quadruped to prone to functional stabilization exercises in standing as the patient demonstrates good form without increase in symptoms.
- Thoracic spine mobilizations/manipulation as indicated
- Perform mid back strengthening to improve posture
- Flexibility- when it limits functional movement, address tightness in hip flexor, hamstring, Achilles, deep hip rotators without causing nerve irritation
- STM to thoracic and lumbar spine as needed, scar massage as needed
- Neural glides- caution with any neural glides, if indicated, perform without irritation after 6 weeks s/p
- Modalities- moist hot pack, ultrasound, electric stimulation, ice use as needed for pain control
- If patient is unable to tolerate dry-land exercise/conditioning, initiate aquatics with surgeon approval.

#### Goals:

- Understand post-op restrictions
- Understand to limit excessive bending, stooping and twisting
- Use sound body mechanics
- Independent with self-management of symptoms
- Independent with motor control exercises and good understanding of TA bracing to stabilize the spine
- Independent with pedometer/walking program and an exercise program- preferably at a local gym, seacoast center for athletes, Works Rx Program.

- Progressive return to work plan
- Independent in a lower extremity strength and conditioning program, cardiovascular exercise program and core stabilization routine.

References:

1. Fanuele JC et al. Association Between Obesity and Functional Status in Patients with Spine Disease. *Spine*. 2002;27,3, 306-312.
2. Hagins M, Lamberg EM. Individuals with Low Back Pain Breathe Differently Than Healthy Individuals During a Lifting Task. *JOSPT*. 2011;41(3):141-148.
3. Low Back Pain: Clinical Practice Guidelines. *JOSPT*; April 2012; vol 42:4.
4. Cook C, Learman K. Low Back Pain and the Evidence of Effectiveness of Physical Therapy Interventions. APTA Independent Study Course 18.1.6. Orthopaedic Section APTA.
5. Macedo LG. Motor Control Exercises for Persistent, Nonspecific Low Back Pain: A systematic Review. *Phys Ther*. 2009;89,9-25.
6. Aasa, B, Berglund, L, Michaelson P, Ulrika, A. Individualized Low-Load Motor Control Exercises and Education Versus a High-Load Lifting Exercise and Education to Improve Activity, Pain Intensity, and Physical Performance in Patients With Low Back Pain. *JOSPT*. 2015;45(2):77-85.
7. Bystrom MG. Motor Control Exercises Reduces Pain and Disability in Chronic and Recurrent Low Back Pain: A Meta-Analysis. *Spine*. 2013;38(6):E350-8.