

### Recommendation

Recommended as an option for spondylolisthesis, unstable fracture, dislocation, acute spinal cord injury with post-traumatic instability, spinal infections with resultant instability, scoliosis, Scheuermann's kyphosis, or tumors, as indicated in the Patient Selection Criteria below. Not recommended in workers' compensation patients for degenerative disc disease (DDD), disc herniation, spinal stenosis without degenerative spondylolisthesis or instability, or nonspecific low back pain, due to lack of evidence or risk exceeding benefit.

### Patient Selection Criteria for Lumbar Spinal Fusion:

- A) Recommended as an option for the following conditions with ongoing symptoms, corroborating physical findings and imaging, and after failure of non-operative treatment (unless contraindicated e.g. acute traumatic unstable fracture, dislocation, spinal cord injury) subject to criteria below:
- 1) Spondylolisthesis (isthmic or degenerative) with at least one of these:
    - a) instability, and/or
    - b) symptomatic radiculopathy, and/or
    - c) symptomatic spinal stenosis;
  - 2) Disc herniation with symptomatic radiculopathy undergoing a third decompression at the same level;
  - 3) Revision of pseudoarthrosis (single revision attempt);
  - 4) Unstable fracture;
  - 5) Dislocation;
  - 6) Acute spinal cord injury (SCI) with post-traumatic instability;
  - 7) Spinal infections with resultant instability;
  - 8) Scoliosis with progressive pain, cardiopulmonary or neurologic symptoms, and structural deformity;
  - 9) Scheuermann's kyphosis;
  - 10) Tumors.
- B) Not recommended in workers' compensation patients for the following conditions:
- 1) Degenerative disc disease (DDD);
  - 2) Disc herniation;
  - 3) Spinal stenosis without degenerative spondylolisthesis or instability;
  - 4) Nonspecific low back pain.
- C) Instability criteria: Segmental Instability (objectively demonstrable) - Excessive motion, as in isthmic or degenerative spondylolisthesis, surgically induced segmental instability and mechanical intervertebral collapse of the motion segment and advanced degenerative changes after surgical discectomy, with relative angular motion greater than 15 degrees L1-2 through L3-4, 20 degrees L4-5, 25 degrees L5-S1. Spinal instability criteria includes lumbar inter-segmental translational movement of more than 4.5 mm. ([Andersson, 2000](#)) ([Luers, 2007](#)) ([Rondinelli, 2008](#))

### Patient Selection Criteria for Lumbar Spinal Fusion (continued):

- D) After failure of two discectomies on the same disc [(A)(2) above], fusion may be an option at the time of the third discectomy, which should also meet the ODG criteria. (See [ODG Indications for Surgery -- Discectomy](#).)
- E) Revision Surgery for failed previous fusion at the same disc level [(A)(3) above] if there are ongoing symptoms and functional limitations that have not responded to non-operative care; there is imaging confirmation of pseudoarthrosis and/or hardware breakage/malposition; and significant functional gains are reasonably expected. Revision surgery for purposes of pain relief must be approached with extreme caution due to the less than 50% success rate reported in medical literature. Workers compensation and opioid use may be associated with failure to achieve minimum clinically important difference after revision for pseudoarthrosis ([Djurasovic, 2011](#)) There is low probability of significant clinical improvement from a second revision at the same fusion level(s), and therefore multiple revision surgeries at the same level(s) are not supported.
- F) Pre-operative clinical surgical indications for spinal fusion should include all of the following:
- 1) All physical medicine and manual therapy interventions are completed with documentation of reasonable patient participation with rehabilitation efforts including skilled therapy visits, and performance of home exercise program during and after formal therapy. Physical medicine and manual therapy interventions should include cognitive behavioral advice (e.g. ordinary activities are not harmful to the back, patients should remain active, etc.);
  - 2) X-rays demonstrating spinal instability and/or myelogram, CT-myelogram, or MRI demonstrating nerve root impingement correlated with symptoms and exam findings;
  - 3) Spine fusion to be performed at one or two levels;
  - 4) [Psychosocial screen](#) with confounding issues addressed; the evaluating mental health professional should document the presence and/or absence of identified psychological barriers that are known to preclude post-operative recovery;
  - 5) For any potential fusion surgery, it is recommended that the injured worker refrain from smoking for at least six weeks prior to surgery and during the period of fusion healing; ([Colorado, 2001](#)) ([BlueCross BlueShield, 2002](#))
  - 6) There should be documentation that the surgeon has discussed potential alternatives, benefits and risks of fusion with the patient;
  - 7) For average hospital LOS after criteria are met, see [Hospital length of stay](#) (LOS).

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