Lumbar spine instability treatment

- Vertebral fracture following primary stereotactic body radiation therapy for spinal bone metastases: a decade of experience
- When can lumbar fusion be considered appropriate in the treatment of recurrent lumbar disc herniation? A systematic review and meta-analysis
- Robot-assisted versus navigated spinal fusion surgery: a comparative multicenter study on transpedicular screw placement accuracy and patient outcomes
- Generalizable model to predict new or progressing compression fractures in tumor-infiltrated thoracolumbar vertebrae in an all-comer population
- A narrative review and scoring proposal for secondary lumbar instability after lumbar decompression surgery
- Spinous Process Osteotomy for High Lumbar Disc Disease - An Alternative for Transforaminal Lumbar Interbody Fusion in Young- A Case Report
- Streamlining the Journey of Research Into Clinical Practice: Making Your Patients and Practice Flourish: When to Fuse? An Evidence Based Review of Treatment Strategies in Degenerative Spondylolisthesis
- Transforaminal Percutaneous Endoscopic Discectomy for L3/4 and L4/5 Foraminal and Extraforaminal Lumbar Disc Herniation: Clinical Outcomes and Technical Note

Depending on the severity and underlying cause, treatment options may include:

Physical therapy: Exercises and stretches to strengthen the supporting muscles, improve posture, and enhance spinal stability. Pain management: Medications, such as nonsteroidal anti-inflammatory drugs (NSAIDs), muscle relaxants, or epidural injections, may help manage pain and inflammation. Bracing: The use of lumbar support or bracing can provide temporary stability and pain relief. Activity modification: Avoiding activities that exacerbate symptoms and adopting proper body mechanics can help protect the spine. Surgical intervention: In cases of severe instability or if conservative treatments fail, surgery may be considered to stabilize the spine, correct structural abnormalities, or decompress nerve roots if compression is present.

The classic treatment for Degenerative lumbar spinal stenosis is traditional total laminectomy decompression, bilateral laminotomy decompression, unilateral laminectomy bilateral decompression, and fusion, which are only considered in cases of lumbar spine instability [1) 2)].

The most diffused surgical techniques for stabilization of the painful degenerated and instable lumbar spine, represented by transpedicular screws and rods instrumentation with or without interbody cages or disk replacements, require widely open and/or difficult and poorly anatomical accesses. However, such surgical techniques and approaches, although still considered “standard of care”, are burdened by high costs, long recovery times and several potential complications. Hence the effort to open new minimally-invasive surgical approaches to eliminate painful abnormal motion. The surgical and radiological communities are exploring, alternative, minimally-invasive or even percutaneous techniques to fuse and lock an instable lumbar segment.

see Dynamic stabilization

1)
Lurie J, Tomkins-Lane C. Management of lumbar spinal stenosis. BMJ. 2016 Jan 4;352:h6234. doi: 10.1136/bmj.h6234. PMID: 26727925; PMCID: PMC6887476.
2)
Shen J, Wang Q, Wang Y, Min N, Wang L, Wang F, Zhao M, Zhang T, Xue Q. Comparison Between

Fusion and Non-Fusion Surgery for Lumbar Spinal Stenosis: A Meta-analysis. Adv Ther. 2021 Mar;38(3):1404-1414. doi: 10.1007/s12325-020-01604-7. Epub 2021 Jan 24. PMID: 33491158.