Purpose of the study: Lumbar stenosis is a debilitating condition that can be treated by direct decompressive maneuvers. Fusion may also be necessary in cases of stenosis with instability. Despite evidence of long-term success in instrumented fusion procedures, there is also associated morbidity with traditional techniques—specifically the more lateral exposures inherent in pedicle screw placement. Interlaminar lumbar instrumented fusion (ILIF) is a compound surgical solution for the treatment of spinal stenosis. Because this solution requires only a midline incision rather than the far lateral exposure necessary in posterolateral fusion with pedicle screws, it is less invasive to the patient, and therefore should result in less postoperative pain and disability, broadening the applicability of the procedure to even those advanced in age or with pre-existing comorbidities. The purpose of this study is to report early clinical outcomes following instrumented interlaminar fusion.

Methods: This is a retrospective series of patients undergoing posterior decompression and interlaminar fusion for stenosis. Inclusion criteria included grade I spondylolisthesis, availability of pre-op data, and 1 year follow-up. Surgical technique consisted of midline exposure up to the facet joints, removal of the interspinous ligament, decompression, an allograft spacer placed on the interlaminar space overlying the decompression site, instrumentation with an interspinous process plate (Affix, Nuvasive, San Diego, CA), and the use of a biologic in the interspinous/interlaminar space. Outcomes were assessed by Oswestry Disability Index and overall VAS.

Summarize the findings (results): 13 patients met inclusion criteria. Mean age at surgery was 66.1 years (range, 39-80). Mean blood loss was 77.3 cc (range 25 - 200 cc). Levels operated were L4-L5 (13). Mean pre-op ODI was 41.1, and overall VAS 6.2. Mean 12-month post-op ODI was 25.3, and overall VAS 2.7. Improvements of ODI (p=0.05), overall VAS (p=0.0005) were statistically significant. Mean improvement in ODI was 15.8 points, and 46% of patients demonstrated greater than 15 point improvement in ODI.

Conclusions: The ILIF procedure is a less invasive approach to traditional instrumented posterior lumbar decompression and fusion in cases of stenosis. These early results indicate that patients undergoing instrumented interlaminar fusion demonstrated clinically important improvements, including back pain, as measured by validated outcomes measures. This may hold potentially important significance for the treatment of degenerative stenosis since interlaminar fusion entails considerably less surgical exposure, operative time, and morbidity than commonly used techniques of posterolateral fusion in a patient population at risk for post-operative medical complications.