

# Minimally Invasive Spine Procedures

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# Minimally Invasive Indirect Lumbar Decompression: Superion-Vertiflex

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second Tuesdays of odd-numbered months

- Vertiflex Superion Device
- Indications:
  - Lumbar stenosis with neurogenic claudication
- Limits extension, reducing or eliminating compression of nerves
- Contraindications:
  - Allergy, instability of lumbar spine, cauda equina, severe osteoporosis, prior fusion/decompression at index level, BMI > 40





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- Maintains sagittal angles
  - 5 months postop no significant difference in L1-S1 angle (gross lumbar lordosis maintained) or flex/extension angle (extension limiting device)
- Indicated for multiple etiologies of stenosis
  - Central Canal
  - Lateral Recess
  - Foraminal
  - Ligamentum Flavum Hypertrophy



Lateral Recess

**Foraminal** 



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- Procedure Details
  - Outpatient
  - Typically MAC or Local Anesthetic
  - Fluoroscopic Guidance
- Midline approach through cannula
- Maintain anatomic structures





- Clinical Data
  - Nunley et al in Clinical Interventions in Aging, 2017
- 190 patients with LSS followed for 5 years  $\rightarrow$  88 pts at conclusion
- Primary Outcome: Zurich Claudication Questionnaire
  - Symptom severity, physical function and patient satisfaction
- Secondary Outcomes:
  - VAS back and leg
  - Oswestry Disability Index
  - SF-12 v.2 Short Form Health Survey
  - Radiography: Qualitative & Quantitative





- Primary Outcomes (Zurich Claudication Questionnaire)
  - ZCQss = symptom severity
    - 75% of patients  $\geq$  0.5 point improvement
  - ZCQpf = physical function
    - 81% of patients  $\geq$  0.5 point improvement
  - ZCQps = patient satisfaction
    - 90% of patient with score of ≤2.5 points
  - 84% of patients demonstrated clinical success on at least two of three scales



**Figure I** Time course of results for each subdomain of the ZCQ: ss, pf, ps. **Note:** Results reported as mean (95% Cl).

**Abbreviations:** pf, physical function; ps, patient satisfaction; ss, symptom severity; ZCQ, Zurich Claudication Questionnaire.



- Pain scores (VAS)
  - 80% of patients had ≥ 20mm improvement in leg pain
    - 75% improvement from baseline @ 5 years
  - 65% of patients had ≥ 20mm improvement in back pain
    - 66% improvement from baseline @ 5 years
- Disability (ODI)
  - 65% of patients with  $\geq$  15% reduction in ODI



**Figure 2** Time course of results for leg and back pain severity by VAS. **Note:** Results reported as mean (95% CI). **Abbreviation:** VAS, visual analog scale.

Mote: Nesults reported as mean (75% CI).



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- Opioid Use Outcomes
  - Nunley, et al Journal Pain Research, 2018

Journal of Pain Research

Dovepress

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CLINICAL TRIAL REPORT

Interspinous process decompression is associated with a reduction in opioid analgesia in patients with lumbar spinal stenosis

• 85% decrease in prevalence of opioid use pre-study vs @ 60 months



Figure 1 Opioid-medication prevalence (%) by follow-up interval for all study subjects (n=190).

Note: Sample sizes were 190 (prestudy, baseline), 181 (week 6), 173 (month 3), 174 (month 6), 163 (month 12), 150 (month 18), 150 (month 24), 125 (month 36), 106 (month 48), and 107 (month 60).



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- Best Options
  - LSS in patients with High Surgical Risk
  - Moderate LSS at levels adjacent to fusion
  - Failure of conservative care
- Can be utilized in parallel with other interventions
  - RF, SCS, ESI, etc.

The Use of Vertiflex® Interspinous Spacer Device in Patients With Lumbar Spinal Stenosis and Concurrent Medical Comorbidities

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Interspinous Spacer (Superion) in the Treatment of Adjacent Segment Disease After Lumbar Fusion Pankaj Mehta MD, Britteny Misercola NP Pain Specialists of America, Austin Texas





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  - Nunley PD, Patel VV, Orndorff DG, Lavelle WF, Block JE, Geisler FH. Five-year durability of stand-alone interspinous process decompression for lumbar spinal stenosis. Clinical Interventions in Aging, 2017, 12:1409-17.
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  - Mehta P, Britteny M. Interspinous Spacer (Superion) in the Treatment of Adjacent Segment Disease After Lumbar Fusion. San Antonio, TX: ASRA; 2018
  - FDA Summary of Safety and Effectiveness Data (SSED): Superion Interspinous Spacer. May 20, 2015