

MIS Surgery Is (NOT) the Way To Go For Treatment of Degenerative Scoliosis

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20th Selby Spine Meeting
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Trends In Spine Surgery

- Less Invasive
- Biologics and Biomaterials
- Pushing the Limit
- VALUE, COST EFFECTIVE, EVIDENCE BASED

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Surgical Goals

- Surgical Goals
 - Decompress
 - Direct
 - Laminectomy
 - Facetectomy
 - Indirect with distraction / correction of deformity
 - Anterior
 - PLIF/TLIF
 - Lateral
 - Stabilize
 - Correct Deformity
 - Improve Balance
 - Sagittal
 - Coronal
 - Improve Outcome

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Options to Accomplish Goals: Approach

- Anterior/ Posterior Open
- Posterior only
 - With Interbody fusion
- Posterior only with Osteotomies
 - With or without interbody fusion
- Minimally or Lesser Invasive options
 - Transposas- XLIF/DLIF etc.
 - MIS TLIF
 - L5/S1 ALF
 - Perc internal fixation
- Combination Open and MIS

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What we want to avoid

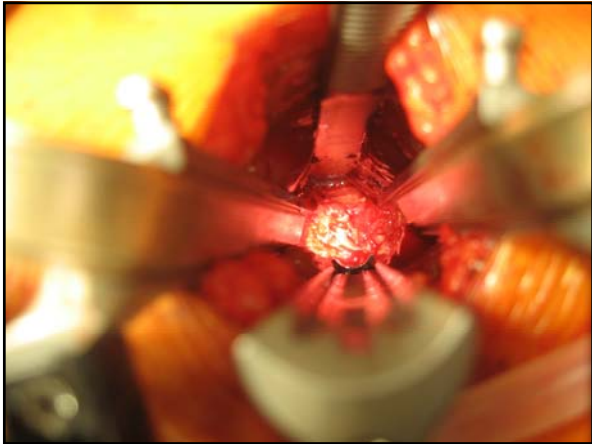


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MISS: Lateral Approach



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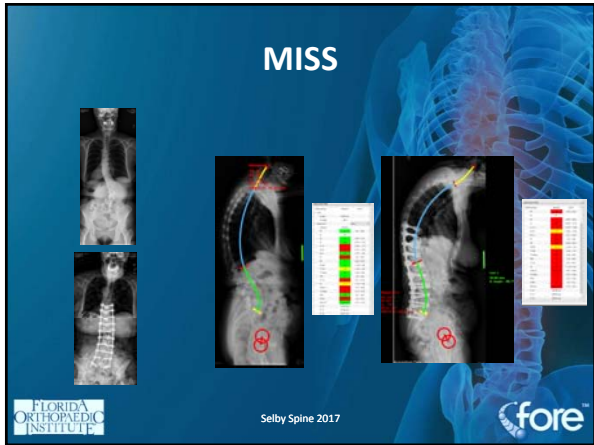
Percutaneous Fixation

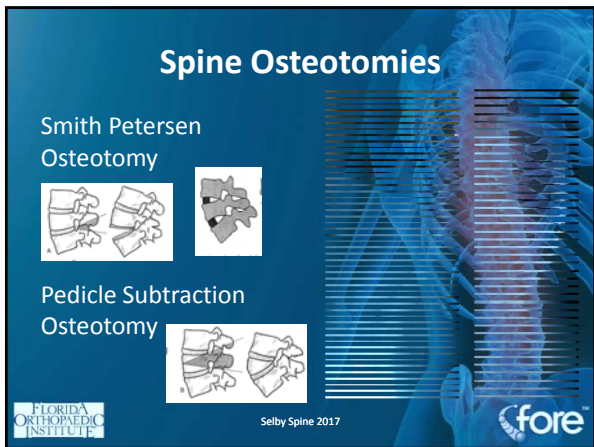
A composite image illustrating percutaneous fixation. The top left shows a surgical view of a minimally invasive approach to a vertebra. The top right shows a surgical view of a minimally invasive approach to a vertebra. The bottom left shows two axial CT scans of a vertebra with a minimally invasive approach. The bottom right shows a lateral view of a vertebra with a minimally invasive approach. The Florida Orthopaedic Institute logo is in the bottom left, and the fore logo is in the bottom right.

**OPEN SURGERY: 64yo female
progressive LBP and difficulty walking**

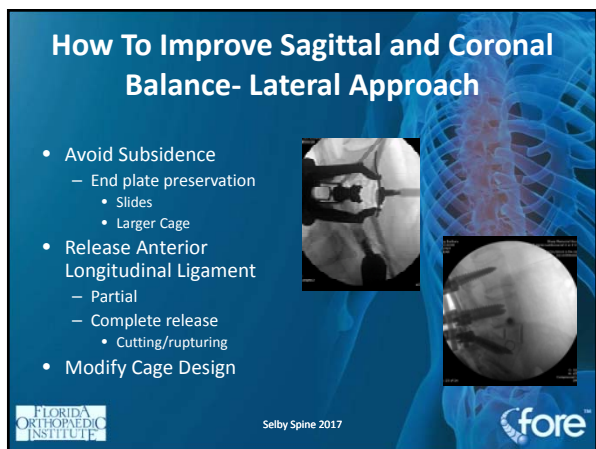
A composite image showing X-rays of a spine. The top left shows a lateral view of a spine with a minimally invasive approach. The top middle shows a lateral view of a spine with a minimally invasive approach. The top right shows a lateral view of a spine with a minimally invasive approach. The Florida Orthopaedic Institute logo is in the bottom left, and the fore logo is in the bottom right.







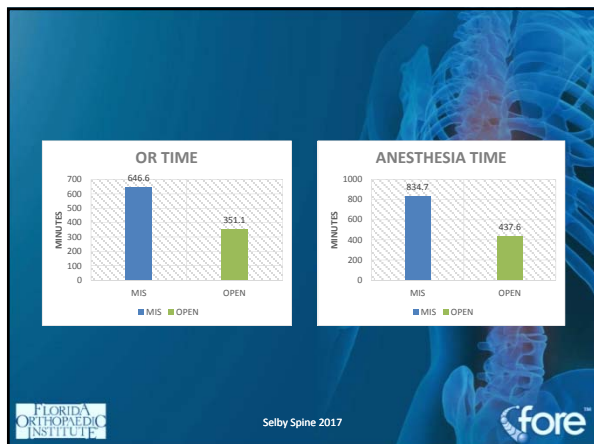


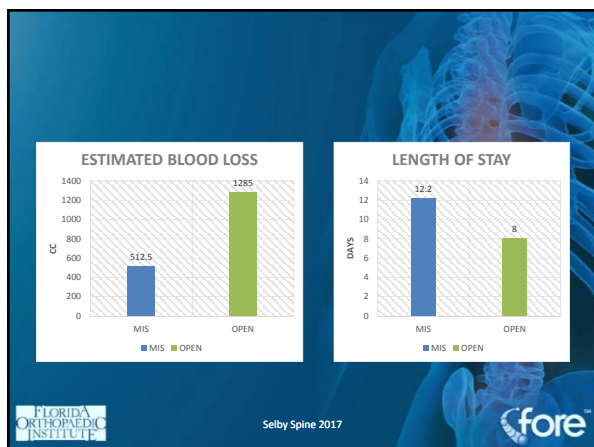


**Spinal Deformity Perioperative Data
MIS vs OPEN-20pts (10 Open, 10 MISS)**

	NUMBER OF LEVELS	OR TIME (min)	ANESTHESIA TIME (min)	ESTIMATED BLOOD LOSS (cc)	LENGTH OF STAY (days)
MIS 2 stage	8	646.6	834.7	512.5	12.2
OPEN 2 Surgeon	8.9	351.1	437.6	1285	8

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Spinal Deformity
MIS vs OPEN
Acute Complications

MIS	OPEN
<ul style="list-style-type: none"> ⚡ Purulent drainage chest tube site ⚡ Return to OR (L2 pedicle screw revision) ⚡ Sinus Tachycardia; RLE weakness (CT benign; AFO brace) ⚡ Respiratory Arrest (PE) ⚡ Pulmonary edema (bilat pl. effusion) ⚡ Afib (converted); mental obtundation/resp difficulties due to narc ⚡ Post-op ileus; abdominal decompression/colonoscopy ⚡ Acute urinary retention; L thoracentesis (1500ml removed) 	<ul style="list-style-type: none"> ⚡ Acute urinary incontinence; slight confusion (CT benign) ⚡ Staph hominis bone infection; acute delirium (CT/MRI showed reversible ischemic changes; posterior encephalopathy) hx ETOH ⚡ Post-op ileus ⚡ Respiratory failure (on ventilator-resolved day 3) ⚡ Possible ICU psychosis

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JNS Journal of Neurological Surgery
J Neurosurg Spine, 2015 Dec; 23(6):798-806. doi: 10.3171/2015.3.SPINE14560. Epub 2015 Aug 28.
Cost minimization in treatment of adult degenerative scoliosis.
Uddin OM¹, Haque R¹, Suvaru PA¹, Ahmed YM¹, ElAhmadih TY¹, Press JM², Koski T¹, Fessler RG³

- **CONCLUSION:**
 - “Minimally invasive surgery demonstrated reduced costs, blood loss, and hospital stays whereas **open surgery exhibited greater improvement in VAS scores, deformity correction, and sagittal balance**”



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Thank You



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