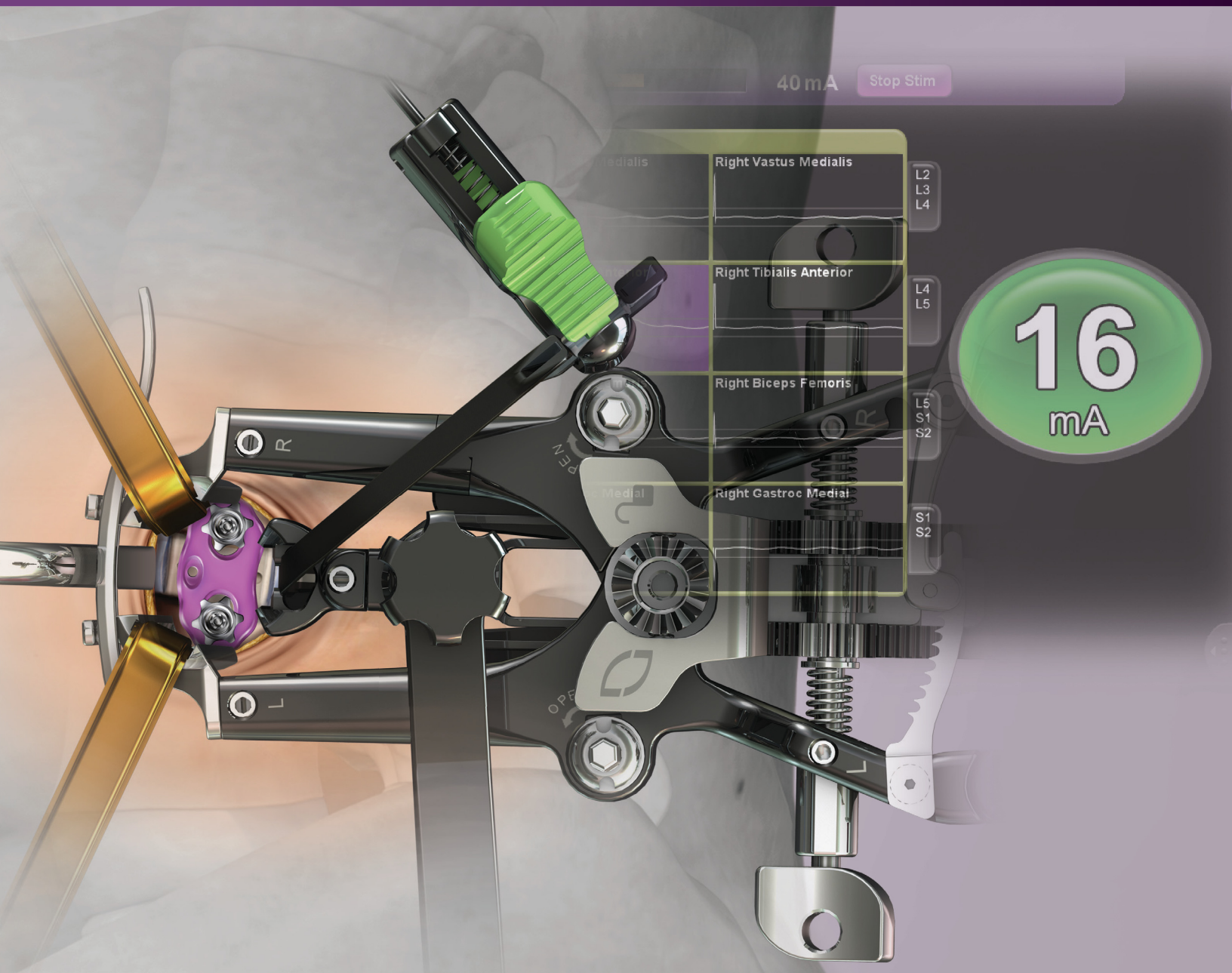
NuVasive®
Speed of Innovation®

XLIF®

Expanded Applications with Procedural Sophistication



MAXIMUM ACCESS SURGICAL PLATFORM MAS®

THE XLIF® SOLUTION

XLIF was created to be a safe and reproducible, minimally disruptive procedure that utilizes conventional surgical techniques and a seamlessly integrated Maximum Access Surgery (MAS®) platform.

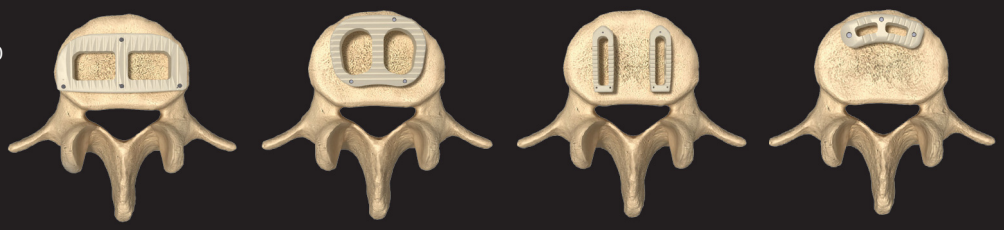
With more than eight years of experience with thousands of successful procedures and system advancements, XLIF applications have expanded from single-level DDD to the most advanced deformity and tumor/trauma pathologies.

The XLIF solution is the first clinically validated lateral approach to the spine, allowing surgeons to accomplish fundamental surgical goals – anterior column correction and fusion.

STABILITY

CoRoent® XL interbody implants are designed to span the ring apophysis for maximum stability.

- Solid foundation for fusion with the largest interbody implant available
- Preserves the ALL and PLL

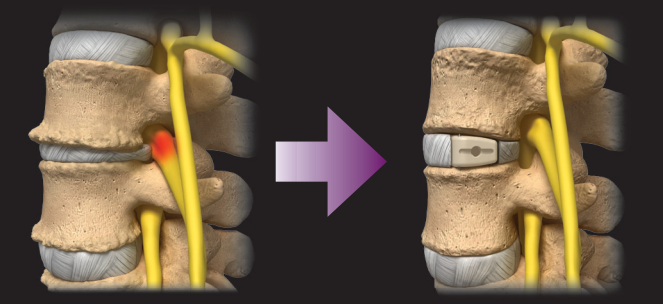


XLIF *ALIF* *PLIF* *TLIF*

INDIRECT DECOMPRESSION AND SAGITTAL ALIGNMENT

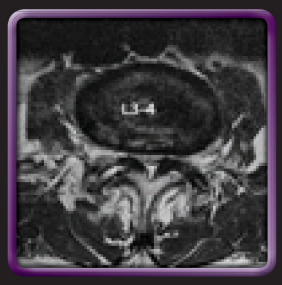
INDICATION

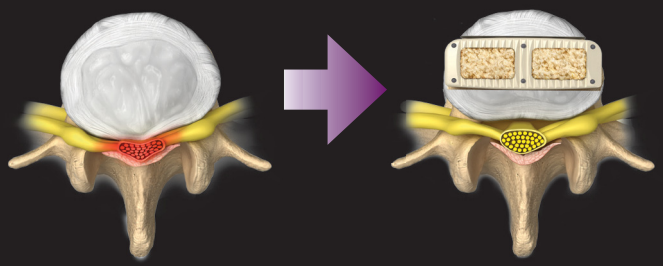
Pathologies such as DDD, degenerative spondylolisthesis, and degenerative scoliosis can present with a loss of disc height, osteophyte growth, and stenosis (central, sub-articular, or foraminal), resulting in neural complications.



THE XLIF SOLUTION

Ligamentotaxis is accomplished with the placement of a large interbody implant, resulting in restoration of disc height, correction of sagittal alignment with lordotic implants, and indirect decompression. XLIF has been shown to provide indirect decompression on central, sub-articular, and foraminal stenosis.



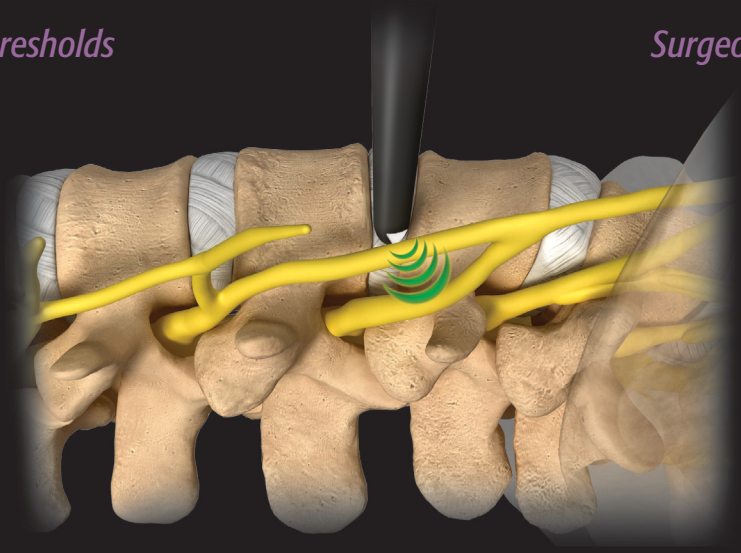


REPRODUCIBLE NEUROMONITORING

- NVM5® is the only clinically validated neuromonitoring system for a reproducible lateral approach to the spine.
- Automated system provides the fastest response to determine direction and relative proximity of the nerves.
- Result – Most efficient nerve avoidance solution, delivering less trauma to the psoas muscle.

Discrete Thresholds

Surgeon-Driven



Real-Time

Directionality

Relative Proximity

Discrete real-time directionality and relative proximity nerve information are critical to differentiate between the safe and unsafe dilator placements below.

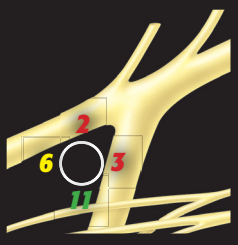
NUVASIVE® NEUROMONITORING

- **Dilator Posterior to Nerve**
  Unfavorable dilator placement identified by the NVM5.

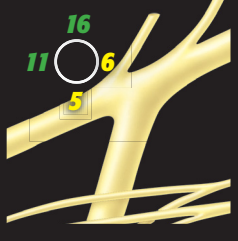
- Using discrete real-time directionality and relative proximity nerve information, the NVM5 is designed to guide a surgeon from an unfavorable to a favorable dilator placement.

- **Dilator Anterior to Nerve**
  Favorable dilator placement identified by the NVM5.

Unfavorable Position

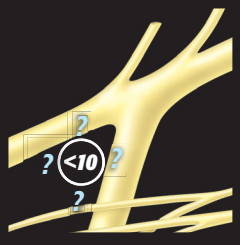


Favorable Position



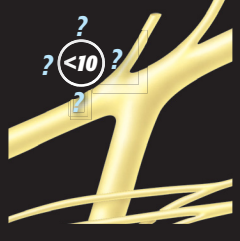
TRADITIONAL NEUROMONITORING

- Traditional neuromonitoring would provide the same reading for these two dilator positions.



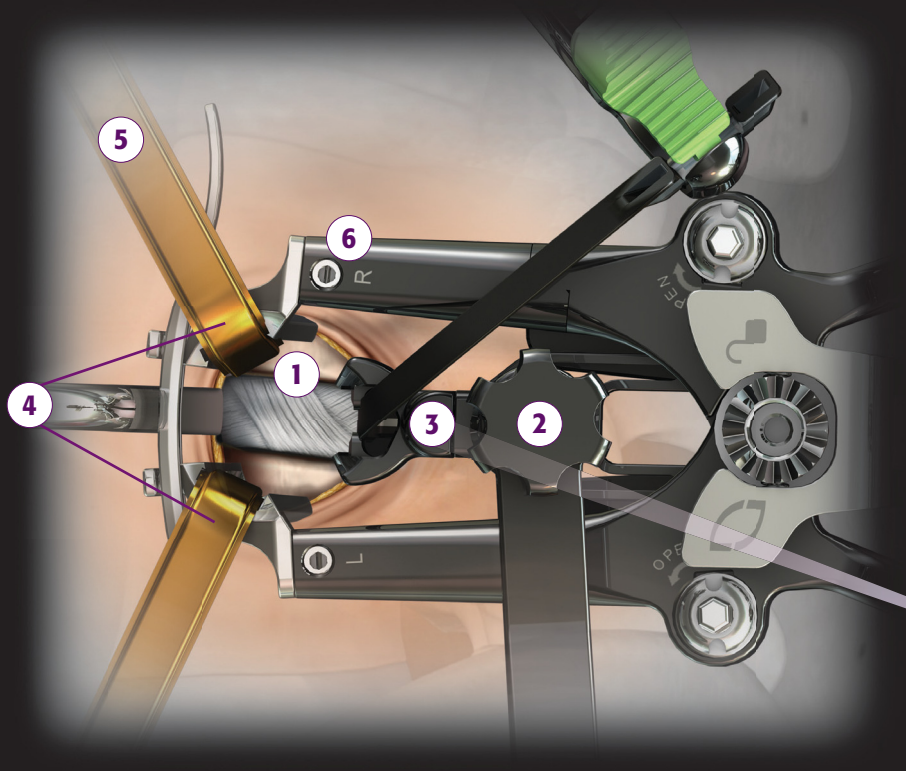
- Without discrete real-time directionality and relative proximity nerve information, traditional neuromonitoring may not be able to differentiate between a favorable and an unfavorable dilator placement.

- Unfavorable dilator placement may correlate to potential nerve injury.

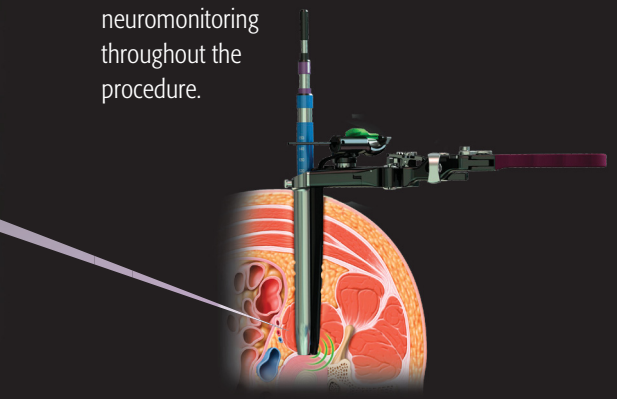


CUSTOMIZABLE ACCESS

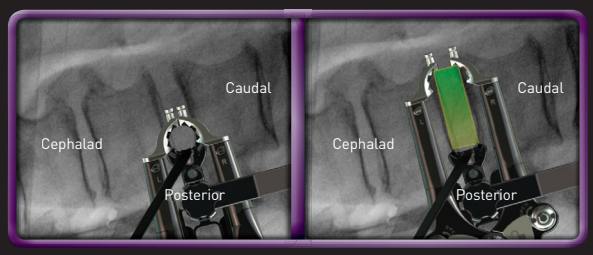
The MaXcess® 4 Access System was specifically designed for lateral access surgery to provide reproducible access.



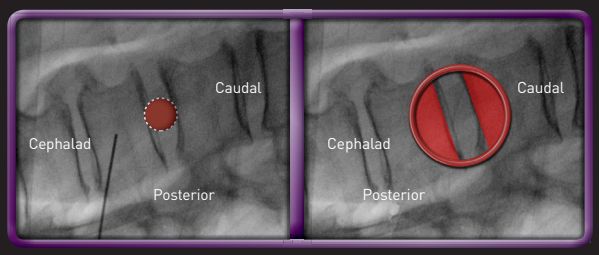
1. Customizable exposure to meet patient's anatomical requirements.
2. Attachment point is designed to lock posterior blade for retraction away from lumbar plexus.
3. XLIF® Electrode offers the only lateral access system with integrated neuromonitoring throughout the procedure.
4. Split-blade design does not confine a surgeon to working through a tube.
5. Low-profile light cables designed to eliminate shadows.
6. Tilting blades independently expand and customize distal exposure.



MAXCESS: CUSTOMIZABLE ACCESS; OPTIMAL EXPOSURE



OTHER SYSTEMS: ONE-SIZE-FITS-ALL ACCESS; UNNECESSARY EXPOSURE

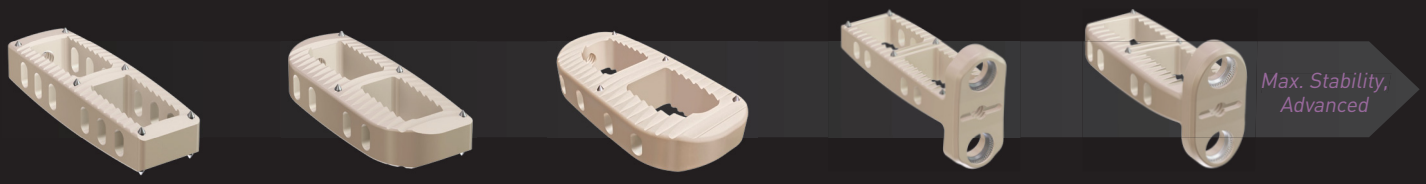


- MaXcess 4 is introduced over a 12mm XLIF® Dilator.
- Posterior blade is locked while tissues are retracted anteriorly, away from the lumbar plexus.
- Cephalad and caudal blades are opened only enough to provide access to the disc space.

APPLICATION-SPECIFIC SOLUTIONS

NuVasive® is the first company to provide a full portfolio of interbody solutions with a variety of applications via the CoRoent® XL platform.

STANDARD PATHOLOGIES



XL (18mm wide) | **XL-W (22mm wide)** | **XL-XW (26mm wide)** | **XL-F (18mm wide)** | **XL-F Wide (22mm wide)**

Implants offered in 0° and 10° lordosis.

COMPLEX PATHOLOGIES

XL-CT (Coronal Tapered)
*Degenerative Scoliotic Levels**

XL-K (Keeled)
*TDR Revision**

XL-T (Thoracic)
*Thoracic**

X-CORE® Expandable VBR
*Tumor/Trauma Corpectomy**

*Potential application.
Note: FDA PEEK Implant Clearances:
All PEEK interbody implants are cleared for use as intervertebral body fusion device only for use with autograft, including the CoRoent family of implants. CoRoent thoracic and lumbar PEEK implants are also cleared as partial vertebral body replacements for use with allograft or autograft.

COMPLETE FUSION SOLUTION

Osteocel® Plus is the complete fusion solution:

- Complete – Provides cells, signals, and scaffold; no need to add bone marrow aspirate, proteins, or an additional scaffold.
- Physiologic – Mimics the biological profile of autograft; avoids dosing concerns.
- Consistent – Each lot is tested for osteogenic potential; addresses cell quality (e.g., BMA patient variability).
- Experienced – 100,000+ patients treated since 2005; no reported adverse events.**

**As of date of publication, January 2011.

FIXATION OPTIONS FOR A VARIETY OF PATHOLOGIES

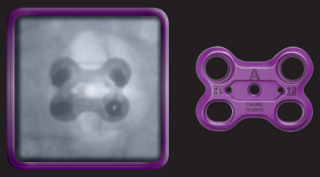
A broad portfolio of fixation systems allows surgeons to select the best fixation option for a specific indication.

SINGLE APPROACH

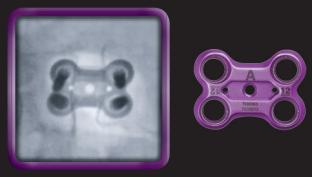
- XLIF® supplemented with XLP® is the fulfillment of single-approach minimally disruptive, reconstructive spine surgery.
- XLP is biomechanically equivalent to unilateral pedicle screws.*

XLP 2-BOLT PLATE

XLP 2-BOLT, 2-SCREW (2+2) PLATE



XLP 4-SCREW PLATE

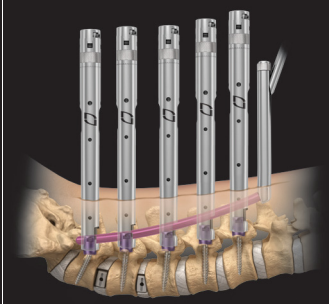


XLP FAVORED-ANGLE PLATE

POSTERIOR FIXATION

AFFIX® SPINOUS PROCESS PLATE

- Strategic array of teeth for maximum fixation
- Minimally disruptive posterior approach
- Proprietary integrated self-locking mechanism

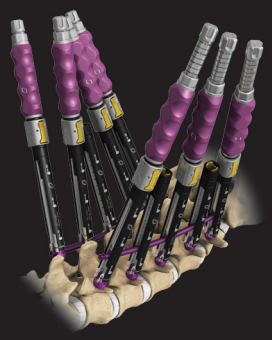


SPHERX® DBR® III

- Minimally disruptive posterior fixation with instrument-free compression
- Seamlessly integrated with NVM5® for reproducibility
- 5.5mm and 6.25mm rod options

RADIAN® FACET SCREW SYSTEM

- Minimally disruptive posterior fixation
- Seamlessly integrated with NVM5 for reproducibility



PRECEPT™

- Elegant MAS® instrument platform
- Advanced implant technology

ARMADA®

- Comprehensive premier posterior fixation system
- Degenerative to complex deformity applications

*Bess RS, Cornwall GB, Vance RE, et al. Biomechanics of Lateral Arthrodesis. Goodrich JA, Volcan IJ, eds. *eXtreme Lateral Interbody Fusion (XLIF®)*. 1st ed. St. Louis, MO: Quality Medical Publishing, 2008:31-40.

EXPERIENCE COUNTS

As first to market, with thousands of successful cases, NuVasive® continues to pioneer the development and advancement of lateral access spine surgery. No other company provides such a complete and proven lateral access solution.

CLINICAL VALIDATION

- XLIF® is the only lateral approach procedure validated by nearly a decade of clinical experience.
- Documented excellent clinical outcomes
- When compared to traditional fusions, XLIF has demonstrated reduced blood loss, less O.R. time, and shorter hospital stay.*

Benefits	XLIF Surgery	Traditional Lumbar Interbody Fusion Surgery
Blood Loss	<100cc/level[1, 2]	500-1,000cc/level[3, 4]
Hospital Stay	1-3 days[1, 5]	3-6 days[3-5]
Walking	Same day[6]	3 days[7]
Perioperative Cost	XLIF 10% less than traditional[5]	

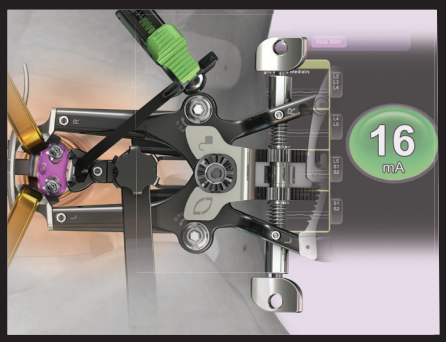
The above data represents typical outcomes of patients being treated for degenerative disc disease, spondylolisthesis, and scoliosis.

Surgeon:
- Improved patient care
- Increased O.R. efficiency (from 3 hrs. down to less than 1 hr.)
- Less time making rounds

Patient:
- Shorter hospital stay (discharged same day or after 1 night, vs. 3-4 days)
- Faster return to normal activities (4-6 weeks vs. 12 weeks)

Hospital:
- Reduced total cost of procedure (savings of ~10%)*

*Deluzio KJ, Lucio JC, Rodgers WB. SAS Journal 2010; 4:37-40.

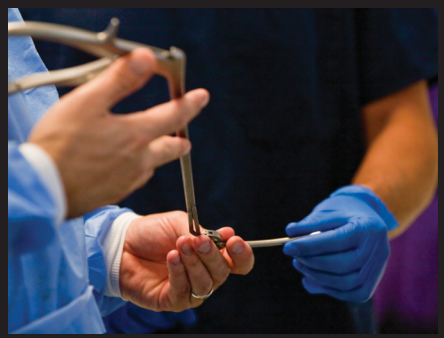


INTEGRATED MAS® PLATFORM

- Seamlessly integrated proprietary neuromonitoring delivers safety and reproducibility
- Deep understanding of the surgical nuances associated with lateral approach
- Solutions for the most advanced applications – from DDD to tumor/trauma and advanced deformity correction

UNPARALLELED TRAINING PROGRAM FOR SURGEONS

- A state-of-the-art cadaveric operating theatre, expert-led didactic sessions, and a unique culture make the NuVasive XLIF Marquis Visit Program an outstanding experience for the surgeons involved



MOST EXPERIENCED AND EDUCATED REPRESENTATION

- Dedicated clinical experts – XLIF Market Development Team
- XLIF-certified representation

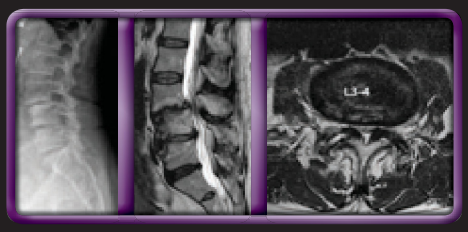
*Data on file.

[1]Oliveira L, et al. WScJ 2010;1:19-25. [2]Dakwar E, et al. Neurosurg Focus 2010;28(3):E8. [3]Dhall SS, et al. J Neurosurg Spine 2008;9:560-565. [4]Whitecloud TS, et al. J Spinal Disord 2001;14(2):100-103. [5]Deluzio KJ, et al. SAS Journal 2010;4:37-40. [6]Ozgur BM, et al. SAS Journal 2010;4:41-46. [7]Park Y, et al. Spine 2007;32(5):537-543.

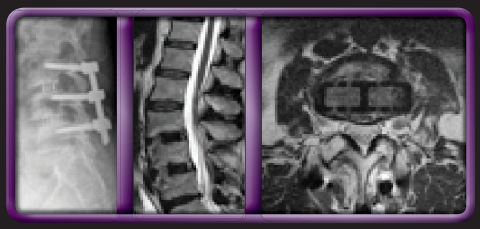
XLIF® EXPANDED APPLICATIONS

DEGENERATIVE SPONDYLOLISTHESIS

Reduces spondylolisthesis, restores sagittal balance, and may achieve indirect decompression



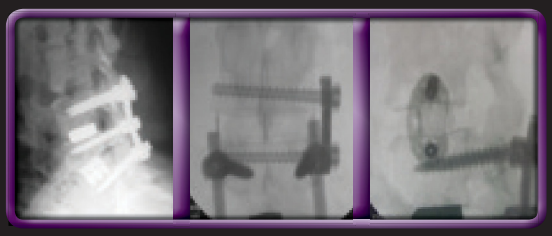
Pre-Op with Central Stenosis



Post-Op with Visible Indirect Decompression

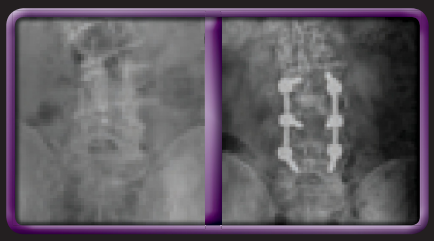
ADJACENT-SEGMENT DISEASE

Approach through virgin anatomy



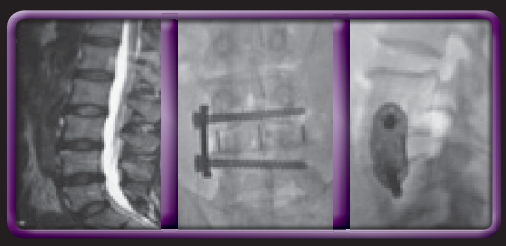
DEGENERATIVE SCOLIOSIS

Minimizes morbidity when compared with traditional approaches[1-7]



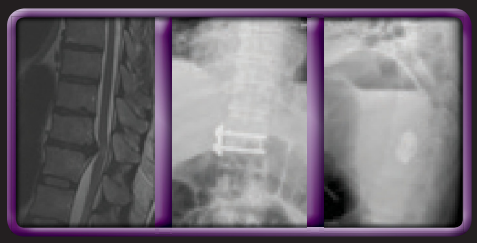
DEGENERATIVE DISC DISEASE

Minimally disruptive fusion solution



THORACIC DISC HERNIATION

Minimally disruptive approach for direct decompression and fusion

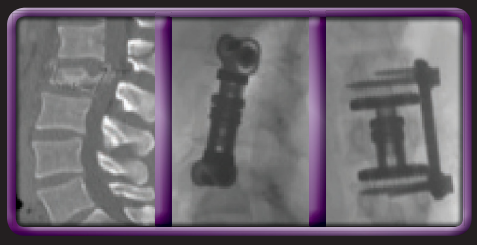


REVISION SURGERY

Designed to make challenging revision surgeries easier and reproducible

TUMOR/TRAUMA

Conventional surgery with minimal disruption



[1]Oliveira L, et al. WScJ 2010;1:19-25. [2]Dakwar E, et al. Neurosurg Focus 2010;28(3):E8. [3]Dhall SS, et al. J Neurosurg Spine 2008;9:560-565. [4]Whitecloud TS, et al. J Spinal Disord 2001;14(2):100-103. [5]Deluzio KJ, et al. SAS Journal 2010;4:37-40. [6]Ozgur BM, et al. SAS Journal 2010;4:41-46. [7]Park Y, et al. Spine 2007;32(5):537-543.

NuVasive®
Speed of Innovation®

To order, please contact your NuVasive® Sales Consultant or Customer Service Representative today at:
NuVasive, Inc. 7475 Lusk Blvd., San Diego, CA 92121 • phone: 800-475-9131 fax: 800-475-9134
EC REP **NuVasive UK Limited** 509 Centennial Park, Centennial Avenue, Elstree WD6 3FG
phone: +44 (0) 208-238-7850 fax: +44 (0) 207-998-7818

www.nuvasive.com

9500790 B