NuVASIVE®
Speed of Innovation®

NVM5®

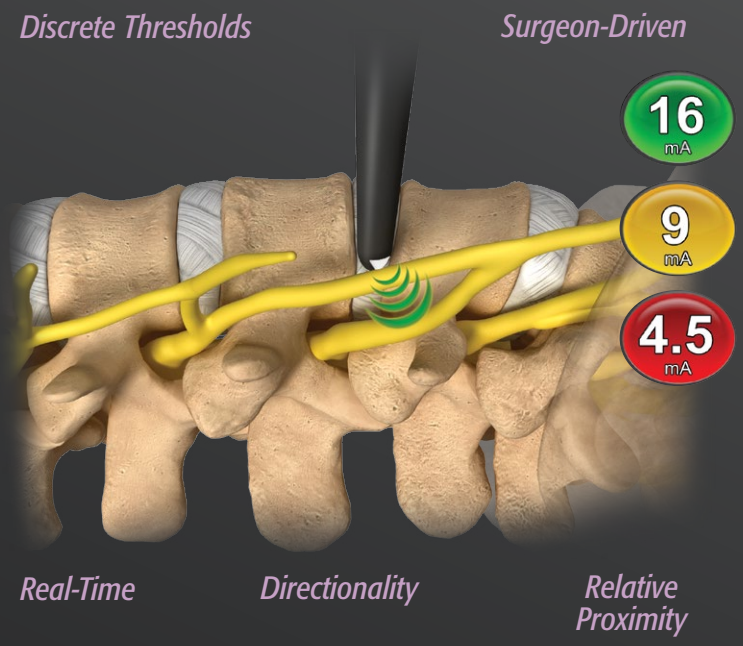
NVM5® for XLIF®

MAXIMUM ACCESS SURGICAL PLATFORM MAS®

Advanced Nerve Detection – Real-Time, Directional Feedback

LEADERSHIP IN NEUROMONITORING

- NVM5® is the only clinically validated neuromonitoring system for lateral approaches to the spine.
- Discrete Thresholds – NVM5 delivers discrete thresholds, enabling the surgeon to assess proximity to the nerve in the lumbar plexus.
- Directionality – XLIF® Dilators' directionality provides nuanced information via precise vectoring of the stimulation electrode within the lumbosacral plexus.
- Relative Proximity – Using discrete thresholds, the NVM5 aids the surgeon in assessing how close the XLIF Dilator is to the nerve tissue.
- Real-Time – Using its patented Hunting Algorithm, the NVM5 stimulates five times per second, delivering discrete, directional, and relative proximity data to the surgeon in real-time!
- Surgeon-Driven – The surgeon controls stimulation from the sterile field – without delay, aiding in efficiency in the O.R.

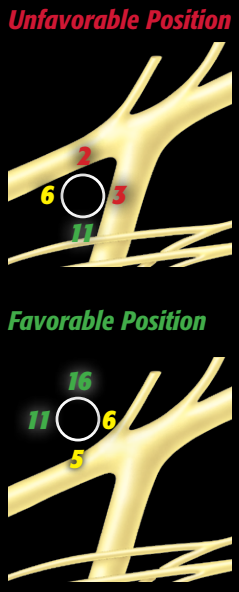


Discrete, real-time directionality and relative proximity to nerves are critical to differentiate between favorable or unfavorable XLIF Dilator placement.

NUVASIVE® NEUROMONITORING

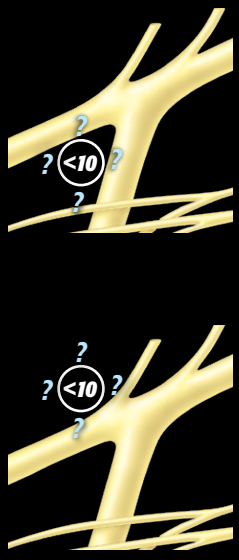
Dilator Posterior to Nerve
- Identification of unfavorable XLIF Dilator placement can be aided by NVM5.
- Using discrete thresholds, real-time directionality, and relative proximity information, the NVM5 helps guide the surgeon to favorable XLIF Dilator placement.

Dilator Anterior to Nerve
- Favorable XLIF Dilator placement as identified by NVM5.



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 unfavorable dilator placement.
- Unfavorable dilator placement may cause excessive retraction and could correlate to potential nerve injury.



XLIF® DILATORS FOR NVM5®

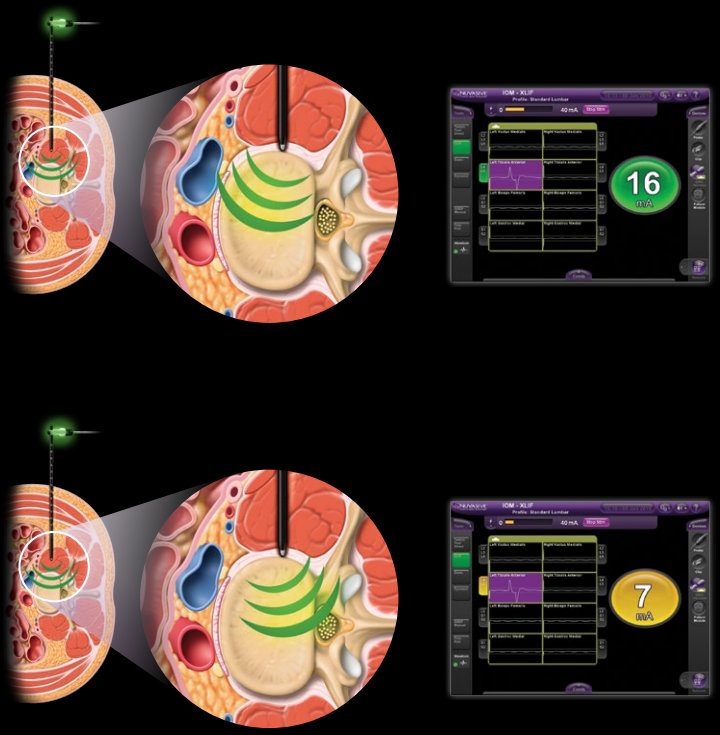
One of the most fundamental aspects of XLIF surgery is the use of the XLIF Dilators. When used with the NVM5 system, XLIF Dilators offer the potential for the ideal approach to the disc space, minimizing soft tissue disruption via communicating nerve proximity and real-time directionality.

REAL-TIME DIRECTIONALITY

In the XLIF mode of NVM5, the stimulus is applied via the stimulation clip at the stimulation interface of the XLIF Dilators, which are insulated except for a stimulation electrode at the distal tip. This stimulation electrode continuously emits the stimulus while the EMG electrodes on the innervated muscle groups monitor for a response.

KEY BENEFITS:

- Using the electrode position indicator at the top of the dilator, the surgeon can track the dilator direction throughout the transpsoas approach and re-direct accordingly at any time.
- As the dilator rotates, the EMG values change in accordance with the proximity to the nerve.
- NVM5 enables 360º, real-time feedback during XLIF.



CLINICALLY VALIDATED NUVASIVE® NEUROMONITORING

DYNAMICALLY EVOKED, DISCRETE-THRESHOLD ELECTROMYOGRAPHY IN THE EXTREME LATERAL INTERBODY FUSION APPROACH

"Nerves were identified within proximity of the dilators in 55.7% of all cases during the XLIF approach. Although nerves were more commonly identified in the posterior margin (63%), there was significant variability in the location of nerves identified."

Tohmeh AG, Rodgers WB, Peterson MD. Dynamically evoked, discrete-threshold electromyography in the extreme lateral interbody fusion approach. J Neurosurg Spine 14:31-37, 2011.

NVM5® DETECTION THRESHOLDS IN >900 XLIF® SURGERIES

"Why is neuromonitoring necessary during an XLIF? . . . Even while targeting the anterior half of the disc space, nerves are detected 84% of the time, and the dilators need to be redirected 50% of the time. . . . NVM5 is the only system that can provide real-time neural proximity and directionality information."

Smith W, Rodgers WB. NVM5® detection thresholds in >900 XLIF surgeries. NuVasive White Paper 9500205, May 2005.

DEFINING THE SAFE WORKING ZONES USING THE MINIMALLY DISRUPTIVE LATERAL RETROPERITONEAL TRANSPSOAS APPROACH: AN ANATOMICAL STUDY

"Study defines safe working zones for the XLIF approach. . . . The safe access zone for L1-L4 is at the middle posterior quarter of the vertebral body while the safe access zone for L4-L5 is at the midpoint of the vertebral body. . . . The genitofemoral nerve is at risk in Zone II at L2-L3 and in Zone I at L3-L5."

Uribe JS, Arredondo N, Dakwar E, Vale FL. Defining the safe working zones using the minimally disruptive lateral retroperitoneal transpsoas approach: an anatomical study. J Neurosurg Spine 13:260–266, 2010.

ELECTROMYOGRAPHIC MONITORING AND ITS ANATOMICAL IMPLICATIONS IN MINIMALLY DISRUPTIVE SPINE SURGERY

"Electrophysiological monitoring is a necessary tool to avoid nerve injury while traversing the psoas muscle. . . . The addition of EMG to lateral approach surgery has contributed to a complication rate drop from 30% to less than 1%."

Uribe JS, Vale FL, Dakwar E. Electromyographic monitoring and its anatomical implications in minimally disruptive spine surgery. Spine J 35:S368-S374, 2010.

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To order, please contact your NuVasive® Sales Consultant or Customer Service Representative today at:

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