In a prospective, randomized study, Dr. Timothy Davis of the Spine Institute Center for Spinal Restoration and his colleagues investigated position-related complications in healthy subjects who were placed in either a right lateral decubitus position (i.e., the position used in OLIF25™ Procedures) or a right lateral jackknife position (i.e., the gold standard for traditional lateral lumbar interbody fusion procedures).

**STUDY ABSTRACT**

**PURPOSE**
To assess if the lateral jackknife position alone could cause neurapraxia.

**STUDY DESIGN**
- **N=50** healthy volunteers (mean age=28.2 years) randomized to be placed in either a traditional right lateral decubitus (RLD) position or a right lateral jackknife position (RLJK) with a table flex of 25°.
- Volunteers remained positioned on the table for one hour (60 minutes).
- Motor and sensory evaluations conducted at baseline and post-positioning (60 minutes follow-up).
- Leg strength evaluated using bilateral hip flexion and knee extension.

**RESULTS**
- After remaining in the lateral jackknife position for one hour, all of the RLJK (right lateral jackknife) subjects had decreased strength in their left legs compared to 0% of the RLD (right lateral decubitus) subjects.
- 64% (16/25) of the RLJK subjects also had motor deficiency in the right leg compared to 0% of the RLD subjects.
- Neurological deficits were transient and 7 days later, no problems were reported in the RLJK subjects.
CONCLUSIONS

- The lateral jackknife positioning alone, which is required for DLIF and XLIF approaches, was found to cause transient neurological deficits.
- The outcomes of this study of healthy subjects are not necessarily indicative of surgical or clinical outcomes.

HOW CAN YOU USE THIS DATA?

- Simplified Patient Positioning in OLIF25 Procedures:
  - There are fewer patient positioning steps for an OLIF25 Procedure compared to traditional lateral approaches (e.g., DLIF).
  - Table break is not necessary in an OLIF25 Procedure.
  - The patient positioning used for traditional lateral transpsoas approaches, such as DLIF and XLIF, resulted in transient neurological deficits.
  - In the study, the right lateral decubitus position, used for the oblique lateral approach, resulted in no motor or sensory deficits, or loss of strength in the lower extremities.
- Accessing the L4–5 intervertebral disc is challenging when using a traditional transpsoas approach.
  - This is due to the iliac crest and the course and size of the obturator and femoral nerves.
  - The OLIF25 Procedure gives the ability to reach the L4-5 disc space without the need for a lateral jackknife position or table break.
- The right lateral decubitus position is used for both OLIF25 and OLIF51 Procedures.
  - This allows multilevel access to the L2–S1 disc space without flipping (or repositioning) the patient.