

Oblique Lumbar Interbody Fusion Understanding Your Risks

This document outlines the risks and potential complication rates associated with **oblique lumbar interbody fusion (OLIF) with posterior pedicle screw fixation**. The following information is based on recent evidence from multicenter studies, systematic reviews, and national registry data.

Common Risks and Estimated Incidence:

- Any complication: 11.7–29.4% (includes both minor and major complications)[\[1\]\[2\]\[3\]\[4\]\[5\]\[6\]\[7\]\[8\]\[9\]\[10\]](#)
- Endplate fracture and/or cage subsidence: 4.4–18.7% (higher risk at L4-5 and in patients with osteoporosis)[\[1\]\[2\]\[3\]\[4\]\[6\]\[7\]\[9\]](#)
- Transient psoas weakness or thigh numbness/pain: 4.3–13.5% (usually resolves within weeks to months)[\[1\]\[3\]\[7\]\[9\]\[11\]](#)
- Sensory nerve injury (including genitofemoral, ilioinguinal, or lateral femoral cutaneous nerves): 5.1–10.6% (majority transient)[\[7\]\[9\]\[11\]](#)
- Postoperative ileus: 0.9–2.9%[\[2\]\[9\]](#)
- Vascular injury (segmental/lumbar vessels): 0.9–2.9%[\[1\]\[2\]\[7\]\[9\]\[11\]](#)
- Sympathetic chain injury: 1.8% (may cause transient lower extremity temperature or sweating changes)[\[9\]](#)
- Surgical site infection (superficial/deep): 0.7–1.9%[\[1\]\[9\]\[11\]](#)
- Reoperation (within 30 days): 1.9–2.2%[\[1\]\[11\]](#)
- Dural tear or cerebrospinal fluid leak: rare (<1%)[\[1\]\[9\]](#)
- Hip flexion pain or quadriceps weakness: 4.4% (usually transient)[\[9\]](#)
- Retrograde ejaculation (males): rare (<1%)[\[2\]](#)
- Deep vein thrombosis (DVT)/pulmonary embolism (PE): rare (<1%)[\[2\]](#)
- Urinary tract infection: rare (<1%)[\[2\]](#)
- Pseudoarthrosis (nonunion): 0.9–2.1% at 6–12 months[\[2\]\[5\]\[6\]\[7\]](#)
- Incisional hernia or pseudohernia: rare (<1%)[\[2\]](#)
- Prolonged postoperative ileus (>3 days): 0.9–2.9%[\[2\]\[9\]](#)

Serious or Rare Risks:

- Major vascular injury (aorta, iliac vessels): 0.03–0.9% (may require transfusion or vascular repair) [\[1\]\[2\]\[7\]\[9\]\[11\]](#)
- Ureteral injury: 0.03–0.9% (may require urologic intervention) [\[1\]\[2\]\[9\]\[11\]](#)
- Bowel injury or peritoneal laceration: 0.03–0.9% [\[9\]\[11\]](#)
- Renal injury: rare (<0.1%) [\[2\]](#)
- Contralateral femoral nerve palsy: 0.9% (usually resolves) [\[9\]](#)
- Intervertebral infection: 0.9% [\[9\]](#)
- Permanent neurological deficit: 0.6–1.3% (extremely rare; most deficits are transient) [\[1\]\[9\]](#)
- Myocardial infarction, stroke, or death: extremely rare (<0.2%) [\[2\]](#)
- Adjacent segment disease: 7.7–10.9% at medium-term follow-up [\[6\]](#)
- Reoperation for hardware failure, infection, or nonunion: 1.9–2.2% [\[1\]\[11\]](#)

Risk Factors for Increased Complications:

- Advanced age, higher BMI, diabetes, tobacco use, osteoporosis, and multilevel surgery are associated with higher complication rates and poorer outcomes. [\[1\]\[3\]\[4\]\[6\]\[7\]\[9\]](#)
- The risk of vascular, ureteral, and bowel injury is higher at L4-5 and L5-S1, and in revision cases. [\[1\]\[2\]\[9\]\[11\]](#)

Additional Considerations:

- The majority of complications are minor and resolve without long-term sequelae; permanent deficits are rare. [\[1\]\[3\]\[4\]\[7\]\[9\]](#)
- The overall fusion rate exceeds 90% at 6–12 months. [\[2\]\[5\]\[6\]\[7\]\[10\]](#)

Patient Acknowledgment: By signing below, the patient acknowledges understanding of the above risks, their estimated incidence, and the potential for both common and rare complications associated with oblique lumbar interbody fusion with posterior fixation. All questions have been answered to the patient's satisfaction.

Signature: _____ **Date:** _____

Patient Name: _____ **DOB** _____

References

1. [Perioperative Complications in 155 Patients Who Underwent Oblique Lateral Interbody Fusion Surgery: Perspectives and Indications From a Retrospective, Multicenter Survey.](#) Abe K, Orita S, Mannoji C, et al. Spine. 2017;42(1):55-62. doi:10.1097/BRS.0000000000001650.
2. [Technical Description of Oblique Lateral Interbody Fusion at L1-L5 \(OLIF25\) and at L5-S1 \(OLIF51\) and Evaluation of Complication and Fusion Rates.](#) Woods KR, Billys JB, Hynes RA. The Spine Journal : Official Journal of the North American Spine Society. 2017;17(4):545-553. doi:10.1016/j.spinee.2016.10.026.
3. [Comparison of Oblique Lateral Interbody Fusion \(OLIF\) and Minimally Invasive Transforaminal Lumbar Interbody Fusion \(MI-TLIF\) for Treatment of Lumbar Degeneration Disease: A Prospective Cohort Study.](#) Zhu HF, Fang XQ, Zhao FD, et al. Spine. 2022;47(6):E233-E242. doi:10.1097/BRS.0000000000004303.
4. [OLIF Versus ALIF: Which Is the Better Surgical Approach for Degenerative Lumbar Disease? A Systematic Review.](#) Sun D, Liang W, Hai Y, et al. European Spine Journal : Official Publication of the European Spine Society, the European Spinal Deformity Society, and the European Section of the Cervical Spine Research Society. 2023;32(2):689-699. doi:10.1007/s00586-022-07516-0.
5. [Short-Term and Mid-Term Evaluation of Three Types of Minimally Invasive Lumbar Fusion Surgery for Treatment of L4/L5 Degenerative Spondylolisthesis.](#) Song Z, Zhang Z, Zheng J, et al. Scientific Reports. 2024;14(1):4320. doi:10.1038/s41598-024-54970-5.
6. [Comparing the Medium-Term Outcomes of Lumbar Interbody Fusion via Transforaminal and Oblique Approach in Treating Lumbar Degenerative Disc Diseases.](#) Zhao L, Xie T, Wang X, et al. The Spine Journal : Official Journal of the North American Spine Society. 2022;22(6):993-1001. doi:10.1016/j.spinee.2021.12.006.
7. [Differences in Radiographic and Clinical Outcomes of Oblique Lateral Interbody Fusion and Lateral Lumbar Interbody Fusion for Degenerative Lumbar Disease: A Meta-Analysis.](#) Li HM, Zhang RJ, Shen CL. BMC Musculoskeletal Disorders. 2019;20(1):582. doi:10.1186/s12891-019-2972-7.
8. [Oblique Lumbar Interbody Fusion Versus Minimally Invasive Transforaminal Lumbar Interbody Fusion for the Treatment of Degenerative Disease of the Lumbar Spine: A Systematic Review and Meta-Analysis.](#) Wang YL, Li XY, Liu L, et al. Neurosurgical Review. 2023;46(1):100. doi:10.1007/s10143-023-02009-0.
9. [Perioperative Complications Associated With Minimally Invasive Surgery of Oblique Lumbar Interbody Fusions for Degenerative Lumbar Diseases in 113 Patients.](#) Liu C, Wang J, Zhou Y. Clinical Neurology and Neurosurgery. 2019;184:105381. doi:10.1016/j.clineuro.2019.105381.
10. [Minimally Invasive Transforaminal Lumbar Interbody Fusion Versus Oblique Lateral Interbody Fusion for Lumbar Degenerative Disease: A Meta-Analysis.](#) Zhang QY, Tan J, Huang K, Xie HQ. BMC Musculoskeletal Disorders. 2021;22(1):802. doi:10.1186/s12891-021-04687-7.
11. [Complications Associated With Lateral Interbody Fusion: Nationwide Survey of 2998 Cases During the First 2 Years of Its Use in Japan.](#) Fujibayashi S, Kawakami N, Asazuma T, et al. Spine. 2017;42(19):1478-1484. doi:10.1097/BRS.0000000000002139.
12. [Comparison of Outcomes Between Indirect Decompression of Oblique Lumbar Interbody Fusion and MIS-TLIF in One Single-Level Lumbar Spondylosis.](#) Hung SF, Liao JC, Tsai TT, et al. Scientific Reports. 2021;11(1):12783. doi:10.1038/s41598-021-92330-9.