



## Primary anterior lumbar interbody fusion, with and without posterior instrumentation: a 1,377-patient cohort

Anterior lumbar interbody fusion (ALIF) has become a versatile and powerful means of decompression, stabilization, and reconstruction. As an anterior only technique, the integrity of the posterior muscle and ligaments remain intact. Adding posterior instrumentation to ALIF is common and may confer benefits in terms of higher fusion rate but could contribute to adjacent segment degeneration due to additional rigidity. The coauthors aimed to compare rates of operative nonunion and adjacent segment disease (ASD) in ALIF with or without posterior instrumentation.

Given the variability in spinal fusion techniques, this study answers an important clinical question regarding the efficacy of fusion with anterior only vs anterior/posterior fusion constructs and whether the added rigidity confers a benefit compared to the increased risks associated with an additional operative procedure. This data will help guide surgeons in deciding when an additional posterior fusion is necessary.

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### Study Details

The study consisted of 307 ALIF only and 1070 ALIF+PSF procedures with a mean follow up of 5.6 years.

#### 5-year ASD Outcomes

Crude incidence was 2.4% for ALIF only and 0.5% for ALIF+PSF

Adjusting for covariates, a lower operative nonunion risk was observed for ALIF+PSF (HR=0.22, 95% CI=0.06–0.76)

#### 5-year Nonunion Outcomes

Operative ASD incidence was 4.3% for ALIF only and 6.2% for ALIF+PSF

After adjusting for covariates no difference was observed (HR=0.96, 95% CI=0.54–1.71)

### Practice Considerations

Surgeons should evaluate the added risks associated with the addition of posterior instrumentation and reserve the supplemental posterior fixation for patients that might be at higher risk for operative nonunion. Risk of operative ASD was not statistically different with the addition of posterior instrumentation suggesting concern regarding future risk of ASD perhaps should not play a role in considering supplemental posterior instrumentation in ALIF.

### [Link to Full Publication](#)

Laiwalla AN, Chang RN, Harary M, Salek SA, Richards HG, Brara HS, Hirt D, Harris JE, Terterov S, Tabaraee E, Rahman SU (2024). **Primary anterior lumbar interbody fusion, with and without posterior instrumentation: a 1,377-patient cohort from a multicenter spine registry** *The Spine Journal*, 24 (): 496-505.