



# Arthrodesis Versus Revision Discectomy for Recurrent Lumbar Disc Herniation: Patient-reported

## Outcomes in 417 Patients from the N2QOD Registry

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### Introduction

Comparative effectiveness of spinal fusion versus revision discectomy for lumbar recurrent disc herniation (RDH) has yet to be evaluated. By analyzing nationwide longitudinal patient-reported outcomes spine registry, we characterized utilization of arthrodesis for lumbar RDH and analyzed its associated outcomes versus discectomy alone.

### Methods

N2QOD registry prospectively enrolls spine surgery patients via representative sampling and prospectively collects measures of surgical safety and patient-reported outcomes for one-year postoperatively. All lumbar surgery cases performed for same-level, same-side RDH without listhesis or instability were queried to compare outcomes between revision discectomy with arthrodesis versus without arthrodesis.

### Results

417 RDH patients were enrolled with one-year follow-up [135 (32%) arthrodesis, 282 (68%) discectomy]. Patients treated with arthrodesis more frequently presented with back versus leg dominant symptoms, had greater back pain scores (VAS: 7 vs 6), and more frequently had symptoms for >3 months. High ASA grade and unemployment were greater in arthrodesis cohort. Baseline ODI, QALY, and all other variables were similar. Length of surgery, blood loss, length of hospitalization, peri-operative complications (3.8% vs 1.4%,  $p=0.13$ ), and need for in-patient rehabilitation were greater in arthrodesis vs. discectomy cohort. Fusion was associated with delayed return to work. In first 3 months after surgery, re-operation was lower in arthrodesis cohort (1.5% vs 3.7%,  $p=0.20$ ), incidence of 1-year reoperation was similar (9.7% vs 8.3%,  $p=0.73$ ). Significant and equivalent improvements in pain, disability, and QALY were reported one-year after surgery in both cohorts. In subset analysis of RDH patients with back dominant symptoms and baseline BP-VAS = 8, revision discectomy alone provided equivalent health benefit as compared to arthrodesis.

### Conclusions

Arthrodesis is associated with greater healthcare utilization and morbidity, but also with a trend of reduced 3-month re-operation with equivalent one-year outcomes. Revision discectomy alone may be most efficient treatment option for patients experiencing recurrent disc herniation without listhesis or instability, particularly in those without back dominant symptoms.

### Learning Objectives

Revision discectomy alone may be most efficient treatment option for patients experiencing recurrent disc herniation without listhesis or instability, particularly in those without back dominant symptoms.

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