Recurrent lumbar disc herniation treatment

Initial recommended treatment is as with a first time herniated lumbar disc (HLD). Nonsurgical treatment should be utilized in the absence of progressive neurologic deficit, cauda equina syndrome (CES) or intractable pain.

There is widespread variation regarding optimal surgical management for recurrent herniation, which often include revision discectomies with or without fusion via open and minimally invasive techniques ¹⁾.

While repeat discectomy is often successful in treating these patients, concern over repeat RLDH may lead surgeons to advocate instrumented fusion even in the absence of instability.

Surgical choices for disc recurrent herniations are limited by multiple factors, require longer operative time, and are associated with higher rate of complications, treatment seems to be associated with a similar chance of good outcome.

Currently, there aren't any guidelines to assist surgeons in determining which approach is most appropriate to treat rDH. A recent survey showed significant heterogeneity among surgeons regarding treatment options for rDH. It remains unclear which methods lead to better outcomes, as there are no comparative studies with a sufficient level of evidence.

In a study Drazin et al aimed to perform a systematic review to compare treatment options for rDH and determine if one intervention provides better outcomes than the other; more specifically, whether outcome differences exist between discectomy alone and discectomy with fusion.

They applied the PICOS (participants, intervention, comparison, outcome, study design) format to develop this systematic review through PubMed. Twenty-seven papers from 1978-2014 met our inclusion criteria and were included in the analysis. Nine papers reported outcomes after discectomy and seven of them showed good or excellent outcomes (70.60%-89%). Ten papers reported on minimally invasive discectomy. The percent change in visual analog scale (VAS) ranged from -50.77% to -86.57%, indicating an overall pain reduction. Four studies out of the ten reported good or excellent outcomes (81% to 90.2%). Three studies looked at posterolateral fusion. Three studies analyzed posterior lumbar interbody fusion. For one study, we found the VAS percentage change to be -46.02%. All reported good to excellent outcomes. Six studies evaluated the transforaminal lumbar interbody fusion. All reported improvement in pain. Four used VAS, and we found the percent change to be -54% to -86.5%. The other two used the Japanese Orthopedic Association (JOA) score, and we found the percent change to be 68.3% to 93.3%. We did not find enough evidence to support any significant difference in outcomes between discectomy alone and discectomy with fusion. The limitation of the study includes the lack of standardized outcomes reporting in the literature. However, reviewing the selected articles shows that fusion may have a greater improvement in pain compared to reoperation without fusion. Nonetheless, the study shows that further and more in-depth investigation is needed on the of treatment of rDH $^{2)}$.

Systematic review and meta-analysis

In a systematic review and meta-analysis of clinical studies. Gianpaolo Jannelli et al. from * Geneva

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To determine in which clinical settings lumbar fusion offers advantage over repeat microdiscectomy (RD) for patients with recurrent lumbar disc herniation (RLDH).

Conclusions

* No significant difference found between fusion and RD in pain, disability, or functional scores. * Fusion associated with higher intraoperative blood loss, longer surgeries, and longer hospital stays. * Surgical decision should account for radiological or clinical instability, surgeon expertise, and patient preference.

1. Heterogeneity and Study Quality

- Only 11 studies included, mixing prospective (n=4) and retrospective (n=7) designs, with high variability in inclusion criteria and surgical techniques.
- Risk of Bias tool inconsistently applied and not reported per individual study; pooled outcomes may be skewed by lower-quality data.

2. Clinical Outcome Measures

- Focus on general scores (VAS, ODI, JOA) limits the ability to detect subgroup benefits—e.g., patients with instability or axial pain may show nuanced improvements after fusion.
- Absence of long-term stratified analysis (>5 years) overlooks adjacent-segment degeneration or hardware failure risks.

3. Operative Risk vs Functional Benefit

- Fusion incurs greater blood loss, time, and recovery, yet these trade-offs aren't explored in cost-effectiveness or quality-of-life metrics.
- The short-term operative disadvantages may mask long-term benefits or complications—including pseudarthrosis or implant removal.

4. Selection Bias & Indications

- Lack of clarity on how "segmental instability" was defined or quantified across studies.
- Potential that fusion was preferentially done in more severe or complex cases, biasing outcome comparison.

5. Statistical Approach

- Weighted mean differences may obscure individual-level responder patterns.
- Lower statistical power increases risk of Type II error—i.e., false negative differences.

Final Verdict

Score: 5/10

A valuable aggregation highlighting operative drawbacks of fusion but limited by heterogeneity,

unclear subgroup analysis, and absence of robust long-term functional and cost data.

□ Take-Away for Practicing Neurosurgeons

Reserve fusion for RLDH cases with **confirmed segmental instability**, significant axial low-back pain, or structural deformity. Otherwise, a **standard repeat microdiscectomy** is likely to yield equivalent pain relief and improved safety profile.

Bottom Line Summary

Repeat discectomy and fusion yield similar clinical outcomes in RLDH, but fusion introduces operative burden. Decision-making should be **patient-specific**, guided by instability, axial symptoms, surgeon expertise, and informed patient preference.

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1)

Shepard N, Cho W. Recurrent Lumbar Disc Herniation: A Review. Global Spine J. 2019 Apr;9(2):202-209. doi: 10.1177/2192568217745063. Epub 2017 Dec 18. Review. PubMed PMID: 30984501; PubMed Central PMCID: PMC6448208.

Drazin D, Ugiliweneza B, Al-Khouja L, Yang D, Johnson P, Kim T, Boakye M. Treatment of Recurrent Disc Herniation: A Systematic Review. Cureus. 2016 May 23;8(5):e622. doi: 10.7759/cureus.622. PubMed PMID: 27382530.

3)

Jannelli G, Polinelli F, Giardina A, Cuzzolin M, Calvanese F, Cabrilo I, Paun L, Tessitore E. *When can lumbar fusion be considered appropriate in the treatment of recurrent lumbar disc herniation? A systematic review and meta-analysis*. Brain Spine. 2025 May 30;5:104285. doi:10.1016/j.bas.2025.104285. eCollection 2025. PMID:40546274; PMCID:PMC12182769

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