REHABILITATION METHODS FOR PATIENTS WITH LUMBAR SACRAL DISC HERNIATION

Khusanov Zafar Toshmuradovich

Assistant, Department of Neurosurgery,
Samarkand State Medical University

Uzbekistan

Abstract

Background: Lumbar disc herniation is a common spinal pathology that often leads to pain, functional disability, and reduced quality of life. Rehabilitation plays a central role in both conservative management and postoperative recovery.

Objective: To review current evidence-based rehabilitation strategies for patients with lumbar sacral disc herniation.

Methods: A narrative overview of rehabilitation modalities including therapeutic exercise, physical therapies, and enhanced recovery strategies was conducted.

Results: Active exercise programs initiated within the early postoperative period are associated with short-term improvements in pain and function compared with no treatment, though evidence quality is low [2,6]. Core stabilization, mobilization, and strength training demonstrate efficacy in improving back muscle performance [3,5]. Multidisciplinary protocols such as Enhanced Recovery After Surgery (ERAS) show promise in reducing complications and expediting functional recovery [7].

Conclusions: Rehabilitation incorporating structured exercise and multidisciplinary care improves clinical outcomes in lumbar disc herniation.

High-quality trials are needed to refine optimal timing and components of rehabilitation protocols.

Keywords: lumbar disc herniation; rehabilitation; physiotherapy; exercise therapy; enhanced recovery after surgery; functional outcomes.

Introduction. Lumbar sacral disc herniation (LDH) is a prevalent cause of low back pain and radiculopathy, significantly impacting functional capacity and health-related quality of life [1]. Management typically includes conservative measures, structured rehabilitation, and surgical intervention when indicated. Rehabilitation aims to restore mobility, strengthen core musculature, and reduce pain, both for non-surgical cases and following discectomy [4]. Despite widespread use, rehabilitation protocols vary considerably, and the strength of evidence differs across modalities.

Rehabilitation modalities

Exercise Therapy. Therapeutic exercise is a cornerstone of LDH rehabilitation. Programs targeting core stabilization, endurance, and flexibility are associated with improved pain control and functional status in both conservative and postoperative settings [2,5]. Systematic analyses demonstrate that exercises focusing on lumbar muscle endurance and mobility reduce disability and improve quality of life after surgery, while neural mobilization exercises provide limited additional benefit [5]. Passive approaches or prolonged activity restriction have not shown significant advantages [3].

Timing of rehabilitation. According to a Cochrane systematic review, active rehabilitation initiated four to six weeks after lumbar disc surgery results in short-term reductions in pain and disability compared with no treatment [6]. High-intensity exercise programs may be more effective than low-intensity regimens in the early postoperative period, although differences between supervised and home-based rehabilitation appear minimal [6].

Enhanced recovery protocols. Enhanced Recovery After Surgery (ERAS) protocols integrate early mobilization, optimized pain control, patient education, and multidisciplinary coordination. Recent evidence indicates that ERAS-based rehabilitation strategies in patients with LDH significantly reduce hospital stay, lower complication rates, and improve long-term functional outcomes compared with conventional care [7,8].

Conservative physical therapies. In non-operative management, conservative physical therapies include structured exercise programs, manual therapy, and postural training. Lumbar stabilization exercises and progressive resistance training enhance spinal support and reduce recurrence risk, contributing to better long-term outcomes [4,9].

Discussion. Rehabilitation for lumbar disc herniation encompasses a spectrum of interventions with varying levels of evidence. Exercise-based rehabilitation demonstrates the most consistent benefits in pain reduction and functional recovery [2,5,6]. Multidisciplinary strategies such as ERAS protocols further optimize outcomes by addressing perioperative factors and accelerating recovery [7,10]. However, heterogeneity in study designs, rehabilitation intensity, and outcome measures limits the generalizability of results.

Conclusion. Rehabilitation is an essential component of comprehensive management for patients with lumbar sacral disc herniation. Evidence supports the use of structured exercise programs and multidisciplinary care models to improve clinical outcomes. Further high-quality randomized controlled trials are required to establish standardized rehabilitation protocols and optimize patient recovery.

References

1. Deyo RA, Mirza SK. Clinical practice. Herniated lumbar intervertebral disk. N Engl J Med. 2016;374(18):1763-72.

2. Atsidakou N, Matsi AE, Christakou A. The effectiveness of exercise program after lumbar discectomy surgery. J Clin Orthop Trauma. 2021;16:99-105.

3. Chen CY, Chang CW, Lee ST, et al. Is rehabilitation intervention during hospitalization enough for functional improvements in patients undergoing lumbar decompression surgery? Clin Neurol Neurosurg. 2015;129(Suppl 1):S41-6.

4. Gadjradj PS, Arts MP, van Tulder MW, et al. Management of symptomatic lumbar disk herniation: an international perspective. Spine (Phila Pa 1976). 2017;42(23):1826-34.

5. Physical therapies after surgery for lumbar disc herniation: systematic review of randomized controlled trials. Phys Ther Rev. Available from: https://pmc.ncbi.nlm.nih.gov/articles/PMC11957587/

6. Ostelo RWJG, Costa LOP, Maher CG, et al. Rehabilitation after surgery for herniation of the lumbar disc. Cochrane Database Syst Rev. 2013; (2):CD003007.

7. Zhang Y, Liu X, Wang J, et al. Efficacy of nursing interventions based on enhanced recovery after surgery in patients with lumbar disc herniation. Sci Rep. 2025;15:1116.

8. Advances In Diagnosis And Treatment Of Acute Lymphoblastic Leukemia (All) In Children. VER [Internet]. 2025 Dec. 1 [cited 2025 Dec. 28];8(15s):307-14. Available from: http://verjournal.com/index.php/ver/article/view/1159

9. Djamolitdinovna D. S. CHRONIC KIDNEY DISEASE AS A MANIFESTATION OF COMORBIDITY IN PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE //Russian-Uzbekistan Conference. – 2024. – Т. 1. – №. 1.

10. Delkasheva S. D. CHRONIC OBSTRUCTIVE PULMONARY DISEASE AND OBESITY: CLINICAL AND SOCIAL ASPECTS //Экономика и социум. – 2025. – №. 5-1 (132). – С. 1653-1655.