

EVIDENCE-BASED QUICKNOTES

Lumbar discectomy rehabilitation

Does the timing and type of exercise following single-level lumbar discectomy improve pain and function?

To answer this question, we performed a comprehensive search of the PubMed database (January 2011) for randomized, controlled trials and systematic reviews that addressed this specific research question.

Five studies met the criteria for inclusion in this review, evaluating the effect of treadmill walking (1); intensive exercise programs (2,5); immediate exercise (3); and lumbar stabilization exercise (4).

Among 40 patients starting a home exercise program 4 wks post-operative, Gencay-Can et al found significant improvements in pain and function after 2 and 8 mos (1). The addition of treadmill walking further improved function at 2 mos compared to home exercise-only (1).

Kulig et al studied 12 wks of intensive back-extensor and trunk strengthening, finding significant improvements in function and walking performance compared to education-only (2). Similarly, Danielsen et al compared a mild home exercise program to an 8

wk intensive program initiated at 4 wks post-surgery (5). Subjects completing the intensive program showed significant improvements in pain after 6 mos, and in function after 6 and 12 mos, compared to the mild home exercise group (5).

Newsome et al provided 30 patients with a standard exercise program commencing on the first day post-surgery, and randomized patients to immediate exercise consisting of passive and active hip flexion at 2 hrs post-surgery. Immediate exercise resulted in significantly less time to independent mobility and a faster rate of return to work (3). Both groups showed significant improvements in pain and function by 4 wks (3).

Yilmaz et al found that 8 wks of supervised lumbar stabilization exercise or home exercise starting at 4 wks post-operative resulted in significantly greater improvements in pain and function compared to no treatment, though lumbar stabilization was the most effective treatment (4).

Based on this review, it can be concluded that exercise, initiated as early as the first post-operative day, will result in improvements in pain and function following lumbar microdiscectomy; and intensive exercise at 4 wks post-op is supported.

Check with the provider of this newsletter to learn more about exercises appropriate for this condition.

1. Gencay-Can A, Gunendi Z, Suleyman Can S, Sepici V, Ceviker N. The effects of early aerobic exercise after single-level lumbar microdiscectomy: a prospective, controlled trial. *Eur J Phys Rehabil Med*. 2010 Oct 8. [Epub ahead of print] PubMed PMID: 20935605.
2. Kulig K, Beneck GJ, Selkowitz DM, Popovich JM Jr, Ge TT, Flanagan SP, Poppert EM, Yamada KA, Powers CM, Azen S, Winstein CJ, Gordon J, Samudrala S, Chen TC, Shamie AN, Khoo LT, Spoonamore MJ, Wang JC, Physical Therapy Clinical Research Network (PTClinResNet). An intensive, progressive exercise program reduces disability and improves functional performance in patients after single-level lumbar microdiscectomy. *Phys Ther*. 2009 Nov;89(11):1145-57. Epub 2009 Sep 24. PMID: 19778981.
3. Newsome RJ, May S, Chiverton N, Cole AA. A prospective, randomised trial of immediate exercise following lumbar microdiscectomy: a preliminary study. *Physiotherapy*. 2009 Dec;95(4) :273-9. Epub 2009 Sep 16. PubMed PMID: 19892091.
4. Yılmaz F, Yılmaz A, Merdol F, Parlar D, Sahin F, Kuran B. Efficacy of dynamic lumbar stabilization exercise in lumbar microdiscectomy. *J Rehabil Med*. 2003 Jul;35(4):163-7. PMID: 12892241
5. Danielsen JM, Johnsen R, Kibsgaard SK, Hellevik E. Early aggressive exercise for postoperative rehabilitation after discectomy. *Spine (Phila Pa 1976)*. 2000 Apr 15;25(8):1015-20. PubMed PMID: 10767815.