

# Physical therapists reduce disability and improve function in single-level microdiskectomy patients

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Patients who have undergone a single-level lumbar microdiskectomy for lumbar disk herniation experienced significant improvement in physical function following an intensive, progressive physical therapist guided exercise and education program, according to a research report published in the November issue of *Physical Therapy* (PTJ), the scientific journal of the American Physical Therapy Association (APTA).

Low back pain continues to be the most prevalent musculoskeletal problem, and one cause is lumbar disk herniation accompanied by sciatica—with many cases resulting in lumbar diskectomy. Up to 35 percent of patients continue to have pain and impaired function after surgery, which may be related to the type of postoperative care that they receive.

"An important goal of [physical therapy](#) interventions is to resolve functional deficits associated with low back pain," said physical therapist and lead researcher Kornelia Kulig, PT, PhD, associate professor of clinical physical therapy in the Division of Biokinesiology and Physical Therapy at the University of Southern California in Los Angeles. "There is strong evidence that intensive [exercise](#) is effective in restoring functional status in patients who have undergone lumbar diskectomy. The exercise intervention in our study consisted of an intensive, graded strength and [endurance training](#) program targeting the trunk and lower-

extremity musculature."

In this study, 98 participants who had undergone a single-level microdiscectomy were randomly allocated to receive education only or exercise and education. The education-only group received one session of back care education 4-6 weeks after surgery. The education and exercise group received one back care education session followed by a 12-week USC Spine Exercise Program initiated 2-3 days after the education session. The exercise program consisted of back extensor strength (force-generating capacity) and endurance training as well as mat and upright therapeutic exercises. The back extensor strength and endurance training portion was designed to load the back extensor muscles in a graded manner by varying the time and angle at which the trunk was held against gravity, using a variable-angle Roman chair.

The goal of the program was for participants to be able to maintain a horizontal body position for 180 seconds. The purpose of the mat and upright therapeutic exercise portion of the program was to progressively and dynamically develop strength, endurance, and control of movement by the trunk and lower-extremity musculature.

Testing on all outcome measures began 4-6 weeks after surgery, prior to intervention, and was repeated for comparison after the 12-week program. Participants showed improvement in their ability to engage in activities of daily living as well as performance on the Repeated Sit-to-Stand Test, the 50-Foot Walk Test, and the 5-Minute Walk Test. In addition, some participants opted out of their allocated intervention group to pursue physical therapy care outside of the study, but agreed to remain in the study. This allowed researchers to include a third group. The three-group analysis still showed greater improvement in activities of daily living scores, 5-minute walk distance, and 50-foot walk time in the exercise and education group.

"These results suggest greater effectiveness of the current exercise program in reducing disability and improving walking performance than that expected from usual physical therapy," remarked Kulig. "An intensive 12-week strength and endurance training program of the trunk and lower-extremity musculature is safe and results in a greater reduction in disability and a greater increase in walking performance immediately following the intervention."

Source: American Physical Therapy Association ([news](#) : [web](#))

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