

Manipulation in Spinal Rehab

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There are three major treatment strategies to increase the functional capacity of the lumbar spine and improve its ability to withstand external forces. The strategies are early and aggressive use of specific spinal adjustments, rehabilitative exercises and external supports.

Spinal Manipulation

Kirkaldy-Willis and Cassidy reported that "a two- to three-week regimen of daily spinal manipulations by an experienced chiropractor" brought significant improvement in 81 percent of totally disabled patients with chronic low back and referred leg pain.¹ The 238 patients included in their study were from a university back-pain clinic for patients who had failed to respond to previous conservative or surgical treatment. The researchers stated that "in our experience, anything less than two weeks of daily manipulation is inadequate for chronic back pain patients".¹

Rehabilitative Exercises

Much like guy wires supporting a telephone pole, the muscles of the torso and pelvis provide compression and stability to the lumbar spine. Active involvement of the chronic low back patient in a progressive exercise program has been found to be very beneficial, even for patients with herniated discs.² Specific exercises must develop "dynamic control of lumbar spine forces in order to eliminate repetitive injury to the intervertebral discs, facet joints, and related structures."³

Determining which exercises to recommend is not easy, as some research investigations support the need for strengthening of the abdominal wall musculature, while others have focused on the importance of the lumbar spinal extensor muscles. The bottom line is that patients' needs vary, and individual determination of exercises is necessary. Postural evaluation can be used to identify the most appropriate and effective lumbopelvic exercise routine.

The "mirror image" approach to postural examination and rehabilitation evaluates each patient's three-dimensional posture in a reference frame. By carefully noting specific deviations from the ideal intrinsic equilibrium, the doctor is able to identify the sources of excessive biomechanical stress and give specific corrective exercise recommendations. Of course, a general spinal stabilization program will complement specific corrective postural exercises.

External Supports

A significant factor in reducing excessive biomechanical forces on the lumbar spine is frequently overlooked by practitioners - the use of external supports to decrease external forces. Positioning aids such as sitting postural supports (for example, a postural back rest for chairs and car seats), standing postural supports (such as custom-made stabilizing orthotics), and sleeping postural supports (such as mattresses and cervical pillows) are often the difference between a rapid, successful outcome or a long-term, recurring back problem. As McKenzie states, "A poor sitting posture will frequently *enhance and always perpetuate* the problems in patients suffering from low

back pain."⁴ He goes on to recommend the use of a back rest support to help maintain lumbar lordosis and prevent sitting strain.⁴

Improving Spinal Function

During standing and walking (and especially running), the lumbar spine and pelvis balance and move on the lower extremities. This places significant forces and stresses on the bones, joints and connective tissues that support the pelvis and spine. If leg or foot asymmetries or alignment problems are present, abnormal forces are transmitted along the closed kinematic chain, interfering with pelvic balance and spinal function.⁵⁻⁶

When excessive pronation and/or arch collapse of the foot is present, a torque force produces internal rotation stresses to the leg, hip and pelvis. The result is recurring subluxations and eventual ligament instability affecting the sacroiliac and lumbar spine joints. These forces can be decreased significantly with the use of custom-made stabilizing orthotics. In patients with degenerative changes in the lumbar discs and facets, the external force of heel strike may aggravate and perpetuate low back pain. Such pain usually can be reduced with the use of shock-absorbing shoe inserts⁷ or stabilizing orthotics designed to support the entire gait cycle. The reduction in back symptoms is often dramatic due to the decrease in low-level inflammation of the affected joints. This allows rehab to progress rapidly, in conjunction with the anticipated spinal adjusting schedule.

Appropriate rehabilitation of back and neck problems includes specific spinal manipulation, in order to increase mobility and regain coordinated spinal function. Incorporating any necessary spinal supports will speed the process of normalization of function and decrease the asymmetrical and invasive biomechanical stresses. A comprehensive approach is best. Combining the adjustments with rehab and support is in the patient's interest and builds the doctor's practice with appreciative, healthy patients.

References

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