



REHAB / RECOVERY / PHYSIOTHERAPY

A Three-Step Program for Chronic Low Back Pain

Kim Christensen, DC, DACRB, CCSP, CSCS

In many cases of chronic low back pain, early and aggressive treatment produces optimum results for the patient. I have found the following three-step approach highly effective: spinal manipulation of the lumbopelvic area, along with the adjunctive therapies of rehabilitative exercise and external supports.

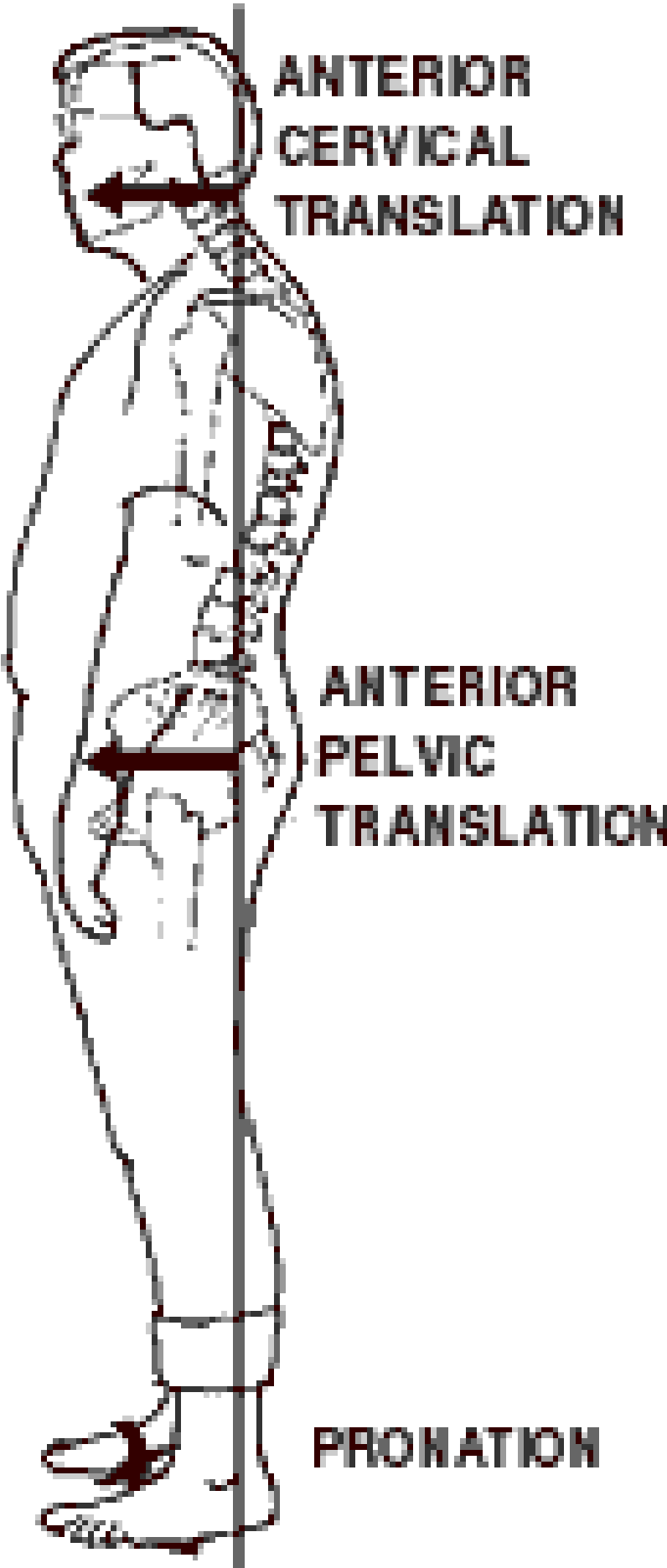
Step 1: Spinal Manipulation

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, as reported in a study by Kirkaldy-Willis and Cassidy.¹ The 238 subjects in this study were from a university back pain clinic for patients who had failed to respond to previous conservative or surgical treatment. The researchers stated: "In our experience, anything less than two weeks of daily manipulation is inadequate for chronic back pain patients".¹

Achieving success requires selecting a spinal adjusting procedure which will best assist the patient in regaining lumbopelvic structural function and alignment. The treatment methods which brought about such excellent results are easily reproduced by most chiropractors. Cassidy and Mierau report that they used specific "side-posture manipulation of only the fixed or dysfunctional lumbar posterior joints or sacroiliac joints. A high-velocity, low-amplitude thrust was employed to the target joint after careful positioning and relaxation of the patient."² Motion palpation of the lumbosacral region was used to identify the target joint which required adjustment.³ Research has shown this approach to be effective even when there is evidence of a spondylolisthesis (the segments above and below the slipped vertebra are targeted)² or a herniated disc.⁴

Step 2: Rehabilitative Exercises

Fig. 1 Postural examination



The muscles of the torso and pelvis play an important role in providing support and stability to the lumbar spine, similar to guy wires supporting a telephone pole.⁵ Involving the patient in an appropriate low back exercise program has been found to be very beneficial,⁶ even in herniated disc cases.⁷ Flexibility and strength exercises can bring about rapid improvements in lumbar spinal function and decreases in pain levels.⁸

Specific exercises must develop "dynamic control of lumbar spine forces to eliminate repetitive injury to the intervertebral discs, facet joints, and related structures."⁹ Recommending specific exercise(s) is not always clear-cut: some research supports the need for abdominal strengthening,^{10,11} other studies advise pelvic tilts,¹² and still other reports focus on the importance of strengthening the lumbar extensor muscles.^{13,14}

The needs of patients vary. The exercises that worked for one will not necessarily work for another. However, the first step toward a solution is to use clinical testing (Goldthwait's and Gaenslen's tests are good starting points) and postural evaluation (see Figure 1) to identify the most appropriate and effective lumbopelvic exercise routine(s).

Fig. 2 Exercise for low back pain



The "mirror image" concept of postural examination and rehabilitation^{15,16} is an accurate and very easy method of determining which primary exercise is most important. By evaluating the patient's three-dimensional posture in a reference frame and noting any 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 (see Figure 2). A general conditioning and flexibility program will complement the specific corrective postural exercises.

Step 3: External Supports

The use of external supports to reduce excessive biomechanical forces on the lumbar spine is a significant treatment approach, it is one which is frequently overlooked by practitioners. Postural supports for sitting (postural back rests or ischial lifts for chairs and car seats), standing (such as custom foot orthotics and heel lifts) and sleeping (mattresses and pillows) can greatly assist in the management of lumbar spine conditions.

As McKenzie states, "A poor sitting posture will frequently enhance and always perpetuate the problems in patients suffering from low back pain." He goes on to recommend the use of a back rest support to help maintain the lumbar lordosis and prevent sitting strain.¹⁷

During standing and walking (not to mention running in athletes), the lumbar spine and pelvis balance on the lower extremities. If leg or foot asymmetries or alignment problems are present, abnormal forces are transmitted along the closed kinetic/kinematic chain, interfering with spinal function.¹⁸ When excessive pronation and/or arch collapse is present, a torque force produces internal rotation stresses to the leg, hip and pelvis.¹⁹

These forces can be decreased significantly with the use of custom-made, corrective 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. This force can be easily reduced with the use of shock-absorbing shoe inserts^{20,21} or orthotics which contain viscoelastic compounds. An anatomical difference in leg length produces abnormal structural strains on the pelvis and low back. Such strains can cause not only chronic pain^{22,23} but have also been shown to result in specific degenerative changes.²⁴ The use of an orthotic and/or heel lift has been shown to reduce these structural strains and bring about significant clinical response.^{25,26}

Sleep postures can also have a detrimental effect on the structural stability of the lumbar spine. While most experts recommend a firm mattress, McKenzie also suggests the use of a "sleeping roll" to maintain proper lumbar positioning during sleep.²⁷ Regarding waterbeds, a research study of chronic low back pain patients compared four different types of beds and found that a hard "orthopedic"-type bed was best.²⁸

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