



Lumbar Stabilization - Not an Everyday Occurrence (But It Should Be)

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When Jack and Jill got married, Jack built a house for his bride. One day Jill came home with groceries to the house that Jack built, only to find that it seemed to be leaning. The house that Jack built creaked and groaned. As time passed, the house leaned more. The veranda cracked on the house that Jack built. Jack spent so much time fixing the house that he had no time to do the things he enjoyed. Finally, Jack consulted a landscape architect to examine the house that Jack built. The puzzle was solved - Jack built his house on a swamp! Jack would have to rebuild his house on a solid foundation so it could withstand the test of time. That is the story of the house that Jack built.

Your body is your house. If you do not have stability in the lower trunk, your house will creak and ache. Eighty percent of us will experience low back pain in our lifetime. Nerve irritation from poor low back stability can result in recurrent leg/foot injury and pain. Low back (lumbar spine) instability can result in altered mechanics in the upper back and neck and then the cycle of injury and pain continues.

External Stability

The low back can be supported externally with the use of proper chairs, additions to car seats and corset type belts. Unfortunately, these products may also provide a false sense of security. Lumbar supports must be used correctly and cannot take the place of internal stability to prevent injury.

Internal Stability

There are three components to internal stability; 1) Pelvic Control, 2) Lumbar Control, and 3) Body/Spatial Awareness.

The spine is similar to building blocks laid down one on top of the other on the concrete foundation of your house. The low back consists of bony vertebrae, intervertebral discs, ligaments, connective tissue, muscles, the spinal cord and peripheral nerves. If the spine is on a stable base, internal stability is provided by muscle control and soft tissue support.

The pelvis is controlled by abdominal, hamstring and hip flexor (iliopsoas) muscles. Imbalance, caused by tightness or weakness, prevents the pelvis from staying in an aligned position.



Abdominal muscle control prevents the pelvis from falling into too anterior a position with the lumbar spine increasingly concave. Oblique (side) abdominal musculature controls the amount of rotation being placed through the spine while moving the extremities (e.g. during walking or running). Obesity puts abdominal musculature at a mechanical disadvantage making the pelvic control difficult and increasing lumbar curvature.

The ideal position for the low back is slightly concave (lordotic). While in a neutral position, it should not be side flexed or rotated. To achieve this position, an individual needs sufficient hamstring length and good abdominal control. Tight hamstrings (muscles on the back of the thigh) pull the pelvis into a posterior rotated position flattening the lumbar spine and placing the individual at risk for disc problems.

This blue print for a healthy spine is great in theory, but to apply it, an individual must have a sense of how his/her body parts are positioned in relation to each other. This spatial awareness is often a difficult lesson to learn, but once done, is a lesson for a lifetime. Try this test:

Can you arch or flatten your low back at will. A neutral spine (ideal low back posture) is the median between maximum arch and maximum flattening. Now that you have found neutral - can you maintain your low back neutral while you drive your car home? (It takes extra muscles to lift your foot off the brake)

In some cases it may be difficult to attain optimal alignment without cueing. Consult a Physical Therapist, Kinesiologist or other health professional if you experience recurrent low back or lower extremity discomfort. They can educate you about your body and help you stabilize your house's foundation.