

The Wellness Express™



Jump on the train to good health

Issue 1, August 2011

Core Stabilization – Foundation of a Healthy Lower Back

Presented by:

We often hear our doctors, therapists and trainers discuss core stabilization and how integral it is for the function and health of our bodies, especially for our lower backs. But what is it? And why is it considered so important?

Core stabilization refers to your ability to keep your core structure (torso, abdomen and spine) relatively stable as the appendicular skeleton (legs, arms and connecting structures) is recruited to do physical work like walking, running, throwing and lifting.

Consider what would happen if you did not possess core stability. Every time you wanted to move – bringing either an arm or a leg away from your midline to perform a task – your body would be pulled in that direction and you would fall over. If you did not fall, you would most likely strain the holding elements of your joints (i.e. the ligaments) instead, once the load became too great. Not a good scenario.

What are the essential components of core stability?

When most of us think of the core muscles, an image of a bodybuilder's six-pack abs (the rectus abdominis) usually comes to mind. Actually, this abdominal muscle is the one contributing the least to core stability!

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Instead of acting as a stabilizer, the primary role of this muscle is to move the torso into flexion (i.e. curling up into a ball).

The deepest abdominal muscle layer is the *transversus abdominis*, and it is the prime stabilizer of the torso, aided by several other specific support muscles (the internal obliques and the *multifidus*). Scientific studies show that before any movement is initiated, these muscles are engaged beforehand, and the transversus abdominis muscles are always recruited first.¹

If you think of a girdle or corset – those ladies' garments often worn to cinch the waist and give that hourglass appearance – this would give you a good idea what the transversus abdominis muscle does for the body. When it contracts, this muscle squeezes and holds the trunk and torso quite rigid and allows for the arms or legs to do their job without pulling the body this way and that. You may be familiar with the competitive powerlifter's thick leather belt - compressing and holding the lower back steady while the rest of the body prepares to lift, clean and jerk up to a thousand pounds overhead. Although this is an extreme example, the function is the same.

Exercise of the Week

Low Back Stabilization in Reverse Bridge Position with Hamstring Curls

Difficulty: Moderate

(Consult your Chiropractor before starting this or any other exercise)

Start: Lie on back, lower legs rest on ball, knees straight. Hands can rest on hips with elbows touching floor. Press down into ball with legs, lifting hips until entire body is in a straight position, feet to shoulders. Stabilize with stomach tucked in and hold.

Exercise: Roll ball toward buttocks using both feet. As ball comes closer to buttocks, hips should rise but not bend, keeping straight line between knees, hips and shoulders. Curl legs to 90 degrees and hold for 2 counts. Return to start position; maintain a tight abdomen throughout. Repeat 5-10 times.

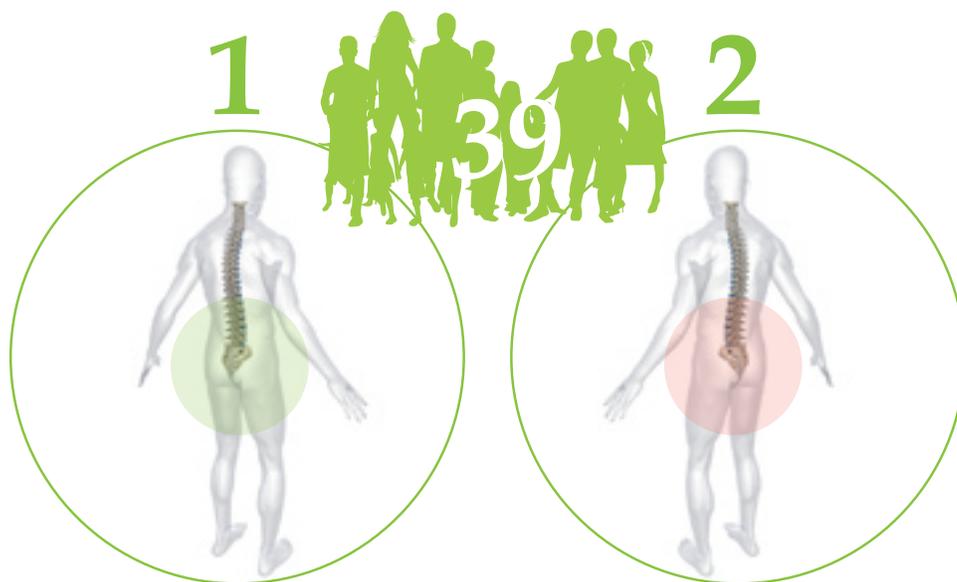


What happens when these core muscles don't function properly?

Research reveals patients with lower back pain have delayed or insufficient firing patterns of the transversus abdominis muscles compared to control groups with no back pain.^{2,3} Although researchers admit it does not prove this muscle delay causes lower back pain, their findings clearly identify a relationship between core stabilization and lumbar spine symptoms. Results from these studies show that by increasing the activation of the core stabilizers, primarily the transversus abdominis, back pain may be reduced or prevented.

Does increasing core stability actually help your lower back?

Recent evidence suggests that it does. Researchers took a group of 39 patients who experienced an initial episode of acute low back pain and then divided them into two groups: one that was given specific strengthening exercises for the transversus abdominis and multifidus muscles, and another group that did not do these exercises.



Follow-ups with these two groups of patients one year and three years later revealed a significant difference between the two. In the group that was given the specific core strengthening exercises, there was a 30-35% recurrence rate of symptoms. Whereas in the other group that did not perform the exercises, there was a 75-85% recurrence rate of lower back pain.⁴

* * *

Although a consultation with your chiropractor is your best bet for a speedy recovery from acute low back pain, it looks like an abdominal contraction-a-day can really help keep the long-term pain away!

Ask your chiropractor to recommend the best core-strengthening exercise for you.

Quote to Inspire

“Motivation will almost always beat mere talent.”

- Norman R. Augustine

References and sources:

1. Contraction of the abdominal muscles associated with movement of the lower limb - *Phys Ther.* 1997 (Feb); 77(2): 132-142
2. Inefficient muscular stabilization of the lumbar spine associated with low back pain. A motor control evaluation of transversus abdominis - *Spine* 1996 (Nov); 21(22): 2640-50.
3. Changes in recruitment of the abdominal muscles in people with low back pain: ultrasound measurement of muscle activity - *Spine* 2004 (Nov); 29(22): 2560-66.
4. Long-term effects of specific stabilizing exercises for first-episode low back pain - *Spine* 2001 (Jun); 26(11): E243-48.

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