

Abdominal Strengthening: Are We Doing it Right?

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Men and women of all ages have been doing sit-ups for many reasons--their appearance, their health, their posture. They do crunches, reverse crunches, and core stabilization. They do Yoga, Pilates or the latest gym craze to achieve their "abs of steel". Do they know if they are doing them right? Do their gym teachers, coaches or personal trainers know if they are doing them right? Most people do not know the importance of contracting the pelvic floor musculature when performing abdominal strengthening exercises.

With abdominal strengthening, many muscles participate. With a crunch in the sagittal plane, the individual is primarily working the rectus abdominus. With exercises requiring any kind of trunk rotation, the internal and external obliques are given the greater challenge. But the primary stabilizers of the core with any motion are the deeper muscles. These deeper muscles are the transversus abdominus, the multifidus and the pelvic floor musculature.

In healthy individuals, these deeper muscles automatically co-contract. With a contraction of the pelvic floor muscles, those muscles that stop a urine stream or a bowel movement, there is an automatic co-contraction of the transversus abdominus. The reverse is also true. With a contraction of the transversus abdominus, the pelvic floor automatically contracts.

The job of the transversus abdominus is to stiffen the spine, flatten the abdominal wall and compress the abdominal viscera. The pelvic floor muscles provide sphincteric control and support the abdominal viscera. So with a co-contraction of these two muscles, the compression of the abdominal viscera increases pressure on the pelvic floor muscles. Imagine a tube of toothpaste squeezed in the middle instead of the bottom. Half the toothpaste will move to the bottom of the tube. It is a good thing the bottom closure is reinforced.

What if the pelvic floor is weak? What if it is just weak enough to co-contrast too late or not contract at all? A 2003 study in Neurology and Urodynamics by Kari Bo, Margaret Sherburn and Trevor Allen found that in 30% of a fit group of individuals, instructions to contract the transversus abdominus resulted in downward movement of the pelvic floor.

Many people do not know their pelvic floor is weak. It may co-contrast late or not at all resulting in descent rather than lift of the muscles. This ill-timed contraction increases stress and further weakens those muscles. A physical therapist is trained to teach individuals how to properly contract the pelvic floor muscles when weakness is present. Some patients may believe they are contracting when in actuality they are not. So what happens if the tube of toothpaste with the *UN*-reinforced bottom is squeezed in the middle? You get toothpaste on your shirt!