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## **The Core Muscles**

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When most of us think of abdominals we typically imagine a chiselled six-pack of hard muscle down the front of our mid-section. Beyond the value of a flat stomach, the benefits of a well-toned, strong set of abdominals are extensive, including lowering the risk of injury, fewer backaches, improved posture and performance.

If you are only performing crunches and other forms of sit-ups, which mostly target the rectus abdominus (the six-pack area and most superficial abdominal muscle) you are neglecting other deeper key muscles collectively called the "core". You can be strong. You can be very fit. You can do 200 abdominal crunches, but that doesn't mean you've got core strength.

The core is the body's centre of power. It gives your body the strength and flexibility needed to function, injury and pain free, in day-to-day activities. It's all about controlling your own body weight in both predictable and unpredictable situations.

Over the past years, the concept of stabilization and functional training has revolutionized the fitness industry's take on exercising the abdominals. Simple put, stabilization is the act of keeping the spine and pelvis in a neutral position while moving the limbs. Functional training involves performing exercises (the abs in this case) in a manner similar to how they will engage in daily activities including rotational and diagonal movement, so that they perform better as you sit at your desk, move furniture or play a game of soccer.

The idea behind core strengthening is that the body is subject to certain forces - torsion, shear and load in all kinds of activities. The higher the rate or intensity of activity, the greater the force involved. By training the correct muscles, one can create a stronger and more stable central core to control the effects of these forces. The muscles involved in core stability are comprised of the "inner unit" and consist of the transverses abdominis (TA), multifidus, pelvic floor and diaphragm. There are all kinds of exercises that work the core but unless you can begin with isolation and recruitment of these core muscles - you are not working the core.

The foundation exercise of all core-strengthening exercises is as follows: Lie on your back on the floor with your knees bent, and a small natural curve in the low back. Place fingertips in front of hip bones. Inhale, and as you exhale gently pull the lower stomach in and up. As the TA contracts you will feel a subtle tension. Keep the low back still, the buttocks relaxed and no pelvic tilt. Continue to breathe as you add a pelvic floor

contraction. It sounds easy but if you've never tried it before you'll see it takes unexpected effort. If you feel a bulge, you are working too hard and activating the internal oblique. The goal is to maintain a 10 second hold while breathing normally for 10 repetitions. Once this is mastered, load can be added in the form of arm and leg movement.

For individuals who have chronic low back pain and/or injury it is advised to consult a fitness professional for one-on-one training to help with finding and recruiting the individual muscles once a complete physical assessment has been performed.

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