McLeod
Sports Medicine

March 2015

Volume 4 Issue 1

The "Core" of Abdominal Strengthening

You cannot venture into a workout facility these days without hearing the word "core" as if it were some magical body part. Often though, a person will perform an exercise they have seen in a magazine or in the gym without knowing the particulars of the exercise. Let us first start off by defining the core so that we can have a better understanding of how to improve it most efficiently. One way to think of the core is to picture a human body. Remove the arms and legs. What is left is termed the core. As you can see, there is more to the core than just the abdominals. Often overlooked are the butt muscles (gluteals) and the shoulder blade (scapular) muscles.

All of these muscles work hand in hand to provide stability to your spine during exercise, preventing injury and allowing for a stable base for the rest of your body to move on. Therefore, during core exercises, the goal many times is to prevent the trunk from moving while the arms and legs move. Without this stable base, performing dynamic movements would be like shooting a cannon out of a canoe. That is a dramatic representation but signifies the importance of our trunk muscles. The best way to have those muscles work most effectively is through proper positioning. The key concept to remember is maintaining a neutral straight spine. To ensure core activation, keep your low back from rounding by keeping your chest engaged and bending the hips instead of your low back.

There are three specific exercises that I recommend and use as a foundation. The first is a simple crunch with one condition. When performing, pay attention that the low back does not press into the ground. Placing your hands underneath the low back to begin will give you a good idea of when it is occurring. If you feel your low back depressing, lower the height you are lifting your shoulders from the floor. This exercise can be made more difficult by eventually moving your arms overhead.

The second exercise is a side plank. (The basic set up will not be discussed but you can internet search an image for reference.) A key point to remember during the exercise is to maintain a straight line. Push your hips forward, as people commonly keep their hips bent

back making the exercise less effective. One last correction to make is to ensure that your shoulders aren't rotating down towards the elbow on the ground. Keep your shoulders in a line perpendicular to the floor. The ultimate goal of this exercise is to feel the obliques or side abdominal wall activate in the side closest to the ground.

The final exercise is called "bird dogs". You will begin on your hands and knees. Start by rounding and arching your low back so that you have a sense of what each end of the spectrum feels like. After performing a couple reps of this exercise, find a position in the middle of those two end ranges of motion. This is neutral. Your back must remain in this position. Pretend as if there is a glass of water sitting on your low back and you don't want to spill the water. After securing that position, lift your opposite arm and leg right arm and left leg) and then vice versa without letting that low back change position. You will hold your arms and legs lifted and then switch. A more advanced version of this exercise includes holding arms and legs lifted and then bringing them to their start position without setting them back down, and lifting and holding again.

One final note pertains to sets and reps. Research shows that improving trunk muscle endurance is a better way to remain free of low back pain as opposed to increasing gross strength.[1] It is commonly said that one increases trunk muscle strength for athletic performance and endurance for low back health. Along that line of thinking, each exercise will be performed for a high number of reps if possible. Each position or rep will be held for 7 to10 seconds, as torso muscles exhibit a rapid loss of oxygen after this time period.[2] Begin with 2 sets of 6 reps holding for 10 seconds each rep for each exercise. Remember that these exercises form a foundation for core and abdominal health and can be progressed when mastered.

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References

1. Luoto S, Heliovaara M, Hurri H. et al. Static back endurance and the risk of low back pain. *Clinical Biomechanics*. 1995; 10:323-324.

2. McGill SM, Hughson R, Parks K. Lumbar erector spinae oxygenation during prolonged contractions: Implications for prolonged work. *Ergonomics*. 2000; 43: 486-493.

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