

Core Training vs Core Strengthening What is the Difference and Why Does it Matter?

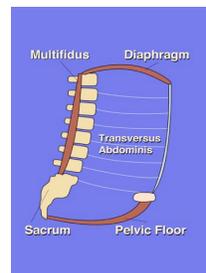
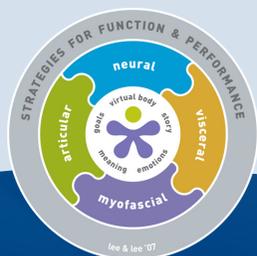
by Diane Lee

Diane Lee
& ASSOCIATES
PHYSIOTHERAPY



The terms core training and core strengthening have been used interchangeably in both physiotherapy and the fitness industry for years and often the same exercises are given indiscriminately to everyone, regardless of how their core is functioning. Is core training the same as core strengthening? Are core stabilization exercises the same as core strengthening exercises? Do you know the difference? Is there a difference? There certainly is, read on.

Language is often the source of much confusion in the world and exercises for your core are no exception. Most people with back pain are now aware that they need to 'do something' about their core if their back pain is to resolve. What should you do? Turn to the best place to find information these days - Google! If you search the internet for information on the best exercises for your back pain and you search 'core exercises' and back pain you too will become confused with which exercises to do, when, how many etc. What is the core anyway? Where is it and why is it so important? What should you do about it?



Where is your core?

The word 'core' refers to the area of your body between your diaphragm (breathing muscle that separates your chest from your abdomen) and your pelvic floor. It includes all the joints of the lumbar spine as well as those of the low thorax (chest) and the pelvis. There are many muscles that support this region and in addition to the pelvic floor and breathing diaphragm, the transversus abdominis (deepest abdominal) and the multifidus (deepest back muscle) are known to be important.

What do we know about how the core should function?

Recent research has shown that the deep muscles function differently from the superficial muscles (oblique abdominals, rectus abdominis and long back muscles) in that they not only prepare us for movement but they work no matter what we do, they are not movement or direction dependent. In health, they work like a harmonious chord in synergy with one another varying their levels of activation as they anticipate the impending loads that are about to load the trunk. The timing and amplitude of their contraction is vitally important if they are to provide control to the joints of the back and pelvis. Exercises for the core that focus on timing and co-activation with other muscles of the core are called core training exercises. Exercises that then take a well-timed and co-activated core and load it are called core strengthening exercises. Now you know the difference.

Why is the timing and co-activation of the core important?

Research has shown that it is the timing, or synergy, of co-contraction of the core muscles that is effected by back or pelvic pain or by the fear of back pain. Clinically, it appears that visceral pain (from the bowel, uterus and/or bladder) can also inhibit optimal function of the core. Current motor control theory suggests that the problem stems from a disruption in communication between your brain and the core muscles (motor planning problem). Since you cannot strengthen a muscle that your brain is not using, your current core strengthening exercises may merely be reinforcing a non-optimal pattern of muscle activation that you already have. Furthermore, this inhibition or delay in timing of contraction DOES NOT improve once the pain has resolved. One study followed people from their very first episode of acute low back pain for several years and found that some people still had discordant or non-synergistic muscle patterns. In addition, they continued to have frequent episodes of acute low back pain!

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Ultrasound imaging is a powerful biofeedback tool that we also use to help you engage the right muscles at the right time. Efficiency, or effort, to move is also a useful way to know if you are activating your muscles in the right sequence. You can easily feel the difference in the effort it takes to lift your leg when you compare an optimal sequencing strategy with a non-optimal one.

Once you can activate the deep muscle system synergistically, it is time for core strengthening exercises. By adding loads through the trunk, leg or arms you will functionally strengthen an optimal pattern for stabilization that gives you stability but doesn't limit your mobility. This pattern of muscle activation can, and should, be integrated into any exercise you do.

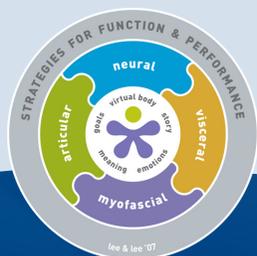
Core training exercises focus on restoring the timing and sequencing of your deep muscles. For the lumbopelvic region these include transversus abdominis, multifidus, the pelvic floor and breathing diaphragm. Since this system is anticipatory and prepares you for movement, we cannot give you 'doing' exercises as your brain will fire the big superficial doing muscles. Instead, we use preparatory cues and images where you imagine guy wires and connections to increase the activation of these deep muscles before you then move. We use our hands to feel for the right contractions, teach you how to feel with your hands the right contraction yourself, and then teach you to feel internally (bring awareness) the right contraction.



If you continue to use non-optimal strategies, such as inappropriate core strengthening exercises, while an underlying deep core muscle deficit is present, you will end up reinforcing the non-optimal pattern. Over time this can lead to tissue break down, pain or an inability to function at the level you used to. For some, the clue that their body isn't working well is the onset of low back pain. For others, the pain can be remote such as knee pain, plantar fasciitis or perhaps shoulder pain; everything ultimately connects to your core!

So now you know the difference between core training and core strengthening. It does matter and it will make a difference.

Call us today - we'd love to help get you back on track to living with an active, healthy body.



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