

PILATES

The Balanced Body® Newsletter

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Lindy lives near Denver with her husband and two teenage boys. She loves skiing, biking, hiking, rafting, and *Dancing With the Stars*.

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FROM THE STUDIO

Are We Over-Cueing “The Core?”

by Lindy Royer, P.T.

The “core” is everywhere these days. It came into popular consciousness quickly, and became the buzzword of personal trainers, physical therapists, fitness experts, the media, Pilates instructors – and our students.

It’s as if we’ve never had a “core” before.

What Exactly is “The Core”

Many people have come to me over the years because they’ve heard that Pilates strengthens their “core.” Yet they can’t describe what their core is, or why it’s important to have one, but they do know that they want “a 6-pack.” Most of my students wave their hands vaguely at their tummy when I ask them to tell me about their core. But of course, we have always had a core. We’ve managed to function for millennia without really knowing anything about it. We just did what came naturally, oblivious to all the complexities we’re now discovering.

Why is it important for Pilates teachers to have a deeper understanding of the core? Because most of our exercises involve core control, and many of our students are coming to us to get a stronger core. What’s your own understanding of the core? How do you describe it to your students? What visual images do you use to help them gain awareness? Are you “over-dosing” your clients with core training and cueing?

According to leaders in spine research, the core is comprised of the muscles and connective tissue that corset the spine and support it - the pelvic floor, the diaphragm, the multifidus and the transversus abdominus. This group of muscles is often referred to as the “inner unit.” The transversus abdominus (TrA) has received much attention as a trunk stabilizer, and has commonly been incorporated into a lot of the cueing that we use in Pilates. For example, “hollow your belly” is a widely used term in Pilates that aims to activate the TrA. But the TrA is not the only core muscle.

The Deep Core Muscles

The deep core muscles work differently than the superficial (global) muscles; they work in a variety of directions, anticipating and preparing us for movement, and they work harmoniously to stabilize the trunk appropriately for the impending load, automatically adjusting to changing conditions. The timing and sequencing of the core muscles is a key component to optimal function.

And the timing of the deep core muscles can be disrupted by pain, or even by the fear of pain. The current theory of motor control indicates that with pain and movement dysfunction there's a break-down in the communication between the brain and the deep core.

If the deep core muscles are not doing their job optimally, the superficial muscles are likely to become excessively active – external oblique, rectus abdominus and long back muscles. The superficial muscles lack the skill to monitor and control the trunk, leading to pain and dysfunction.

Is it really possible to cue such a complex system as the deep core, with all of its variable components? And is cueing one muscle, like the TrA effective for facilitating optimal core control during an involved series of movements? These problems challenge our own understanding and call in to question whether our favorite cues work appropriately for every student and in every situation.

Looking at the Core in a Different Way

To investigate further, I had some sessions with a colleague who uses diagnostic sonography (ultrasound) to train her back pain, pelvic pain and incontinence patients. What I learned was astounding. First, I was able to see the difference between sequencing from the “bottom-up” and from the “top-down.” A bottom-up (pelvic floor first) sequence results in optimal deep core control. A top-down (external oblique/rectus abdominus) sequence results in dysfunctional core control. Secondly, I was able to visualize what I'd only read about in the literature – that the deep core muscles require almost no effort to fire optimally. In the case of the multifidi, just thinking about moving the tailbone was enough to activate them. The amount of force needed to co-contract the core muscles adequately to stabilize the spine is very little.

My experience got me thinking about our common Pilates “core” cues. We often use the same cues for every student, in every class, without really assessing the results. For example, “narrow your ribs” often results in the external obliques firing first – a top-down, superficial core contraction that does not activate the deep core effectively. Are we helping our students achieve optimal, functional, timing and sequencing of their core if we cue “draw your belly button in and up” while they perform footwork on the reformer, or are we just getting in the way of normal, healthy movement? Our job is to help our clients experience their core in a way that will facilitate a healthy movement experience in Pilates, and in their daily life. If our well-meaning cues produce excess superficial muscle tension, or incorrect core sequencing, how is this benefiting them?

Here are some of the adjustments I've made to my teaching as a result of my sonography sessions:

1. Explaining the deep core using the image of a beer can
2. The bottom of the can is the pelvic floor, the top is the diaphragm, and the body is the TrA and multifidus. I tell my students that they need a good beer can before they can have a 6-pack.
3. Students with back pain need to be trained in optimal deep core sequencing
4. This includes an overview of the basic anatomy – the beer-can – breathing, and deep core sequencing from “bottom-up,” without excess muscle tension.
5. Over-cueing the core muscles in all students is not always necessary. Optimal core contraction for spine stability is very low, and motor control so complex, that cueing one muscle prior to or during movement can disrupt the natural sequence.
6. It's clear that much controversy still exists on the subject of The Core, and that further studies are needed to truly understand the complex integration of brain, body and movement. I'll keep learning and evolving my teaching as more knowledge is gained.