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Achieving Core Stability

crossover training for rehab and fitness professionals

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What is meant by Core?

If you were to think of your body as two halves part of a whole, then most likely you'd pick your waist as the midway point. This also happens to be an effective way to describe your body's core.

The body's core muscles, also known as the trunk, are made up of the transversus abdominis, lumbar multifidus, diaphragm, and pelvic floor muscles. These muscle groups encircle and support your spine making them the most intimately involved groups in spinal stabilization. They also play a crucial role in communication with the central nervous system and brain.

According to Michelle Schwahn, PT,

In a healthy spine there is activation of deep core muscles in stabilization of the trunk before the body moves. This interaction between the deep core muscles and the nervous system plays a role in the proprioceptive feedback sent to the brain as we perform activities and undergo our normal activities.[1]

Why is it Important?

The strengthening of functional muscle groups **(core muscles)** leads to a more sophisticated neuromuscular system and improved lumbar spine support. Think of them as a brace for your spine. What's more, the strengthening of these muscles can lead to the reduction of urinary stress incontinence. The correlation between the transversus and pelvic floor muscles is becoming more evident. In her article, *Core Stability,* CynthiaTrentman, PT, writes, "Many patients who have been given exercises for the transversus abdominis report a reduction in urinary stress incontinence; patients given pelvic floor strengthening exercises report a decrease in back pain."[2] Though they've primarily been confined to the offices of physical therapists around the globe, core strengthening exercises are slowly creeping into the depths of athletic training rooms because of their ability to refine even the most highly trained athlete.

In today's aging society back pain issues are more prevalent than ever. "In fact, 80 percent of the population experiences back pain at some point in their lives" says Lori Evans, MSPT, and Tatum Wilson, MSPT, in their article, *At the Core*.[3] They go on to say, "The lumbar multifidus provides segmental stabilization to the spine, which is imperative in patients with lumbar spine instability. Research shows that people with previous episodes of low back pain have delayed activation of the transversus abdominis and lumbar multifidus."[3] A training regimen designed to target these muscles can significantly reduce present and future pain, as well as posture problems.

In addition to pain reduction and injury prevention, **core stability** can significantly improve athletic performance. This type of training can help teach athletes to move more efficiently by effectively increasing the transfer of energy from core to limb. Rick Jemmett explains this theory in his book, *The Athletes Ball*,

To understand the concept of energy transfer, imagine a baseball pitcher who is for some reason prevented from using his lower body throughout the pitching motion; he has to keep his legs still and throw the ball using only his arm. Will he throw as hard as when he is able to use his lower body as he winds up to pitch? In beginning the throwing motion with the legs, kinetic energy generated in the lower half of the body is transferred through the core muscles to his throwing arm, and eventually to the ball. If the athlete's core muscles are well trained, this transfer of kinetic energy takes place efficiently.[4]

"80% of the population experiences back pain at some point in their lives."
-Lori Evans, MSPT, and Tatum Wilson, MSPT

From rehab to sports and fitness training, the importance of **core stability** is no secret. A strong core leads to the improvement of everyday life, injury prevention/pain reduction, and enhanced sports performance. Growing popularity and proven results have vaulted core strengthening exercises into all types of training programs from the gym to the pilates studio.

How Can I Use This?

Stability, strength, and performance are the goals of any core strength training program. Physical therapists, for example, use integrated products and techniques to isolate the weakness and work multiple muscle groups. Personal, group, and athletic trainers can also incorporate **Core Training** techniques into their sessions with clients and athletes, alike. According to Michelle Schwahn, "Core stabilization is most effective on dynamic surfaces in order to recruit proprioceptive, kinesthetic, and balance systems."[1] The new inflatable FitBall Roller is a terrific tool that provides a dynamic challenge for all levels. The key to incorporating this type of training is to do so at a gradual pace.

According to Jemmett, "One objective of **Core Training** is to teach our body to make correct use of the middle and outer layer muscles."[4] One way to accomplish this is by training on a stability ball. In his article *Exercise Balls: Scientific and Clinical Applications,* Phil Page, MS, PT, states,"Because of the challenge in maintaining balance while on the exercise ball, it is thought to reflexively increase activation of the core muscles."[5]

Perhaps the most popular way to train/rehab the core is through Pilates. One reason for this is that virtually anyone can do it. "The most wonderful part about Pilates is that it's for everyone. Pilates exercises help to condition your core muscles, which in turn enhances stability, coordination, balance, and strength,"[6] says Certified Pilates Instructor Kristine Fritz, ACE, AAAI. Another significant development is the recognition of Pilates as a key contributor to core strength, and its incorporation into rehab clinics everywhere. Many Pilates exercises are recognized as being beneficial for sufferers of low back pain. Wilson and Evans note, "Pilates can help reactivate the prime muscles, improve posture and decrease stress on the spine."[3]

Some exercises they recommend are:

- bent knee fall-outs
- knee spreads
- isolated gluteal squeezes
- **trunk rotation →**

Delving deeper into the core benefits of Pilates exercises, you'll also find that they're ideal for relieving the symptoms of urinary stress incontinence. Trentman notes,

Based on research and clinical evidence, using Pilates for patients with urinary incontinence or pelvic floor weakness may be an effective way to improve their symptoms. Additionally, establishing Pilates mat exercise group classes in your facility may be a fun way and effective way to improve pelvic floor strength for those patients who need it.[2]

She also recommends the following exercises that help facilitate the pelvic muscles.

- The roll-up
- The corkscrew
- The swan dive
- Double-leg kicks

"Core stabilization is most effective on dynamic surfaces in order to recruit proprioceptive, kinesthetic, and balance systems."

- Michelle Schwahn, PT

Making the Transition

Always remember that the transition to core training should be a gradual one. If you experience pain at any time the exercise should be discontinued. Proper form and controlled movements are the focus of any core exercise program. "Pilates takes the pain out of working out and brings the control back in. In many cases students in Pilates classes stay on the floor for 60 minutes, but actually work harder than if they were in an aerobics class," says Kristine Fritz.

Product Mentions

All products mentioned in this newsletter can be purchased from OPTP. Shop online at OPTP.com to see our vast selection of Foam Rollers, Gymnic Balls, Wobble Boards, The FitBall Roller, Bosu, and more! Or you can talk to one of our knowledgeable customer service representatives Monday-Friday from 8AM-5PM CST. Call us today at 1-800-367-7393, and we'll be happy to assist you with all your health and fitness needs.

References:

1) The Next Core Challenge: Core Stability on the New Inflatable Roller course outline. Michelle Schwahn, PT, AFAA.

2) Trentman, Cynthia, PT. "*Core Stability*." Advance for Directors in Rehabilitation, April 2003, pp. 51-54.

3)Wilson, Tatum, MSPT, and Evans, Lori, MSPT. "*At the Core. Pilates exercises can help eliminate back pain*." Advance for Directors in Rehabilitation, October 2004, pp. 45-47.

4) Jemmett, Rick B.Sc., PT. *The Athlete's Ball*. Halifax, Canada: novont health publishing ltd., 2004.

5) Page, Phil, MS, PT, ATC, CSCS. *"Exercise Balls. Scientific and Clinical Applications."* Home Health Products, April 2002, pp. 18-21.

6) Kristine Fritz, CPI, ACE, AAAI. Kristine is AGM of Northwest Athletic Club in Maple Grove, MN and submitted her quotes to the author via e-mail.