Joseph Pilates teaches us that every movement begins with the core. This fundamental idea needs to be repeated again and again through a broad network of community fitness professions to achieve a change in our understanding of what causes incontinence, and how it should be treated.

A Fitness Issue
Bladder control is a fitness issue. This is rather happy news for patients with incontinence because fitness problems generally have fitness solutions. While telling someone they have a medical problem usurps their power, telling them they have a fitness issue empowers them. If you have a medical problem, you rely on your healthcare provider to tell you if you will get better, how to get better, and how long it will take. But a fitness solution puts the power back where it belongs: in the hands of the patient.

This idea represents a significant shift in the current culture of understanding about urinary incontinence, fecal incontinence, sexual dysfunction and pelvic organ prolapse. In most instances these pelvic floor disorders share a common cause of pelvic floor dysfunction.

There is little debate anymore that therapeutic exercise is the best first-line treatment for stress, urge and mixed urinary incontinence. According to the *Cochran Review*, Dumoulin and Hay-Smith’s 2010 review, “Pelvic floor muscle training versus no treatment, or inactive control treatments, for urinary incontinence in women,” “provides support for the widespread recommendation that PFMT [pelvic floor muscle training] be included in first-line conservative management programs for women with stress, urge, or mixed urinary incontinence.”

Stress urinary incontinence and overactive bladder affect millions of Americans. Overactive bladder alone has an impact on quality of life second only to major depression. Most practitioners will recommend women experiencing urinary incontinence perform a program of home pelvic floor exercises often referred to as Kegel exercises. The data is clear that there is therapeutic benefit to these exercises and the recommendation is a good one; but perhaps our understanding of the pelvic floor and how to exercise it has been limited.

The Pelvic Floor
The pelvic floor is like any other somatic neuromuscular system. To function properly it requires conditioning. If we accept that the skeletal muscle of the pelvic floor and the somatic nerves that supply that muscle respond to exercise in a way similar to other muscles in the body, we might rethink how we recommend our patients pursue pelvic floor fitness.

We cannot overstate the value of Arnold Kegel’s contribution to women’s health. Kegel was an American gynecologist who in 1948 first published his idea that voluntary contraction of the pelvic floor muscles provided useful nonsurgical treatment for what he called “genital relaxation.” This idea remains the mainstay conservative recommendation for most PTs and MDs treating patients with pelvic floor disorders. The importance of Kegel’s contribution should not, however, keep us from reexamining the
issue and asking the question: how can we do better? For the last 70 years we have encouraged patients to isolate the pelvic floor, and biofeedback has focused on teaching patients how to engage the pelvic floor independent of the abdominal, gluteal and inner thigh muscles. But does this really make sense? I would argue it does not.

The pelvic floor can be seen as an element of a larger neuromuscular system that includes the abdominals, gluteals, lower extremity adductors and external hip rotators. The pelvic floor naturally responds, with these muscles, to movement in a way that allows us to maintain posture and stability. It is a basic principal of conditioning to engage a muscle in a way that challenges its natural purpose. It would be absurd to attempt to rehabilitate the quadriceps by having the patient sit in a chair and contract his quadriceps over and over again. Rather, we would recommend the patient perform a series of movements that engage the quadriceps naturally. If we accept that the pelvic floor is like any other neuromuscular system and that it naturally responds to certain types of movement, then it seems implicit that we might better condition the pelvic floor using movement rather than the traditional isometric Kegel exercise.

**Pilates Movements**

This was my starting point in 2008 when, frustrated with the prevalence of pelvic floor dysfunction among my patients at The Center for Pelvic Floor Medicine in Reno, Nev., I began to study the effects of movement on the pelvic floor using video synchronized multichannel EMG. What we discovered has completely changed the way we approach pelvic floor rehabilitation. We studied 120 mat Pilates, personal training, and yoga movements looking for movements that provide a degree of passive engagement of the pelvic floor. These movements were analyzed in 6 multiparous women without prior Pilates experience. We identified ten movements that provided significant passive pelvic floor engagement, and that were suitable for the general public. While seven of the movements were inspired by the Pilates method, none are performed in the classic Pilates style. The movements selected include:

1. Lunges
2. Squats
3. Side Lying Bent Knee Lift
4. Side Lying Straight Leg Circle
5. Butterfly
6. Bridging
7. Corkscrew
8. Hovering
9. All 4’s Bent Knee lift
10. Cat into Cow

Each movement is performed as a series of repetitions followed by a sustained hold at the point of peak passive pelvic floor engagement, followed by a pulse. It is during the pulse phase of each movement that a maximal voluntary pelvic floor contraction is added to the already partially engaged pelvic floor. Each of the movements uses two or more “co-recruiter” muscles of the pelvic floor to achieve greater pelvic floor engagement and greater sensor feedback from the pelvic floor.

**Lack of Research**

Surprisingly, there is very little in the literature about the use of Pilates movements for the conditioning of the pelvic floor. In 2010 Culligan et al. reported on a randomized trial of 12 weeks of pelvic floor muscle training in comparison to a Pilates exercise program. Published in the *International Urogynecology Journal*, the study found that both groups demonstrated greater pelvic floor strength
with no significant difference between the groups. Given that no one really disputes the benefit of pelvic floor exercise, perhaps the most important questions we can ask address compliance. I believe it is likely that our patients will be more compliant with a program of pelvic floor conditioning that involves movement and that can be incorporated into a regular fitness routine.

Moving On
Use of video-EMG synchronization has provided an additional opportunity that brings us back to the premise that Joseph Pilates taught us 50 years ago: Every movement begins with the powerhouse (core). Once our patients achieve improved pelvic floor performance over the course of a 4-6 week period, we reintroduce each of the 10 movements as a template for a functional movement. For instance, it is possible to learn to use the squat to change the way one moves from a standing to a seated position. If this can be habituated we have automatically introduced 50 – 70 reps of improved pelvic floor contractions daily. I believe that once patients learn to move differently — from the core — they may no longer require a separate program for pelvic floor fitness.

Given the tremendous impact of pelvic floor dysfunction on the lives of the individual, as well as our society and economy as a whole, we need to rethink how we approach these problems. Perhaps most important is to reconsider how we approach prevention. Providing access to these ideas at the level of the community fitness professional is an excellent step in the right direction. Those with a keen interest in doing their part can help change the culture of understanding about the role of exercise in overcoming the burden of pelvic floor dysfunction in their communities.

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