Rehabilitation through Pilates:

Pelvic Floor Dysfunction in Middle Age Women

Alyssa Crosby
October 9, 2015
Course Year: 2014
Oceanside, CA
Abstract:

Pelvic floor dysfunction is said to affect 50% of women, age 55 and older. Commonly known as PFD, this issue may be a result from many different variables. Aging, childbirth, pelvic trauma, inactivity, and a higher body weight are among the most common causes of dysfunction. The pelvic floor muscles run from the pubic bone to the base of the spine and are shaped like a sling. They play a vital role in the overall stabilization, strength, and balance of the entire abdomen, as well as support the pelvic organs and provide sphincter control for the bladder and rectum. When these muscles are weakened, they are unable to function properly causing structural imbalances, muscle compensations, and pain. Pilates is an excellent source of therapy to improve PFD cases, as there are many low impact exercises that focus on mind-body connection and awareness. This paper focuses on a treatment plan designed around a middle age woman who is having concerns of pelvic floor dysfunction, post hysterectomy. Her case is mild, yet requires appropriate care as she is still recovering from surgery. The one-hour Pilates session will be focused on the reformer.
The Pelvic Diaphragm = the deepest muscle layer

Superior View of Female Pelvis
Case Study

Terry is a 43-year-old woman who had her uterus removed about 6 months ago. I began working with her 5 months ago with a goal to improve pelvic floor strength and control. Terry is very diligent regarding her recovery as she walks daily, including a steep staircase in her back yard. She also plays tennis and has a history of practicing yoga. I have designed a Pilates session that is appropriate for what she is currently able to achieve. We will work entirely on the reformer and will be focused on proper abdominal-pelvic floor recruitment and neutral spine awareness.

After our roll down, we begin in a pelvic curl position with the eyes closed. Focusing down to the feet, we find equal weight in the ball and in the heel as the toes relax. Traveling up to the pelvis we feel the weight of the sacrum into the carriage. Our shoulders feel imprinted, head is heavy and arms are long down by the hips. We take an inhale as the ribs expand and exhale to tuck the pelvis into a posterior tilt, imprinting the lumbar spine into the carriage. As we rock back and forward, inhaling and exhaling, I cue to let go of the gluteals and legs and purely focus on abdominals pulling in to rock the pelvis into posterior tilt. This specific cue gives Terry an opportunity to concentrate on mind-body connection and focus in on recruiting deeper levels of the abdominals. We then find the center of those two movements and pause to relax the floor muscles entirely, even if they don’t feel like they’re turned on.

Consistent and unknown tension within the pelvic floor muscles is common, causing muscles to shorten and weaken over time contributing to PFD (DeLancey, 2005). As Terry opens her eyes, I give her a second to practice turning the floor muscles on and off so that she may learn the difference. This exercise may not be too easy for most people who already suffer from the disorder. Holding a squeeze for as little as 10 seconds, 10 times, is a good beginning to work from. A common cue to help clients engage correctly is to imagine holding urine and a bowl movement in as they lift up into the pelvis.
From there we go into five pelvic curls, cueing to gently engage the pelvic floor muscles, pulling up and engaging the abdominals, and relaxing the floor as she returns to neutral pelvis. We then move into spine twist supine, chest lift and chest lift with rotation. Here I continue to cue on breath, engaging the transverse abdominal and maintaining a neutral pelvis. It is important for someone to practice proper abdominal recruitment as it is paired with breathe because this technique could help decrease excessive intra-abdominal pressure, often contributing to PFD. Intra-abdominal pressure is caused when there is an excessive amount of rectus abdominis recruitment along side holding one’s breath. This pressure pushes down on the pelvic floor muscles and causes them to weaken. Educating clients on how to avoid rising intra-abdominal pressure while practicing Pilates or any daily activity can greatly lower risk and improve signs of PFD.

Throughout our footwork we focus a great deal on ankle joint alignment and neutral pelvis. “Pelvic floor dysfunction has more to do with a musculoskeletal issues and your body being out of alignment” (Weiss, 2001). Terry was always quick to loose concentration and go through movements in race mode. We have spent a lot of time talking about hip disassociation and ankle stabilization, and as a result she is very aware and quite good at controlling her movement now. The alignment of the feet and knees contribute to the alignment of hips and position of pelvic floor. Therefore, when are footwork is stable and pelvis remains in neutral, we “improve the overall balance and function of the abdomen” (Study Guide, 2013).

For the abdominal block I have chosen the Hundred. This exercise is great for practicing strength endurance after learning the fundamental technique. I cue on keeping the collar bones open while engaging adductors and flattening the abdominals even deeper with every exhale. “The transversus abdominis, pelvic floor muscles, and multifidus work together to create a feed-forward mechanism to stabilize the trunk and control intra-abdominal pressure in response to truck perturbations” (Nordin, 2009). With further abdominal strengthening will come better core stabilization and pelvic floor function.
I have chosen extended frog and extended frog revers for hip work. We begin with circles down and circles up to warm the hip joints. The circles and frogs offer great coordination challenges for the brain and test Terry’s muscle memory on a moderate to challenging level. Also, stretching and strengthening the hamstrings and adductors are a good benefit to her. Hamstrings “play a vital role in lengthening and strengthening pelvic floor muscles” (DeLancey). Hip work has been a block that we have spent some time on due to the stretching benefits, and Terry has made leaps and bounds from where we began regarding neutral pelvis.

We continue into bottom lift for our spinal articulation because of how it opens the hip flexors and strengthens the hamstrings. This exercise enables me to keep a close eye on Terry’s areas of weakness and correct any hip drops. In the beginning she would bow the legs and sink down on the right. Now she is able to keep the weight evenly in the balls of the feet and tuck the hips up at a much higher level. This higher level enables her hip flexors to actually get a stretch as her hamstrings are working to support her position. The combination of stretching the psoas muscles and strengthening the hamstrings directly affect the alignment of the pelvis and, as previously discussed, can improve PFD signs and symptoms. I cue to lift up in the pelvic floor and to keep abdominals and hamstrings even on both sides.

For our stretching block, I chose to have Terry in the standing lunge because of her knee sensitivities in kneeling lunge. As I cue her into the iliopsoas stretch, we focus on lifting up into the powerhouse, posteriorly tilting the pelvis and imagining her body lifting up through the chest. While transitioning into the hamstring stretch I cue her to reach the tailbone back to an anterior tilt of the pelvis. These stretches give Terry a good opportunity to focus on stretching, posture and breathing into her muscles. If fact, poor posture and improper breathing have been found to have a direct correlation to PFD. “When the trunk is rounded forward this causes a decrease in mobility of the head and neck and compromises proper breathing. This posture often causes a predominance of upper chest breathing with minimal activity of the abdomen and pelvic floor” (Advanced Massage, 2014).
The full body integration that I chose was round back and flat back from the knee stretch group. Both of these exercises are beneficial to the stability of Terry’s pelvis. She also has tightness in her lumbar spine due to gardening, so I thought these two exercises would be appropriate as they require a smaller amount of lumbar and hip flexion. I cue her to keep the abdominals drawn in and resist the springs on the exhale in towards the stopper.

We will go through arms sitting series for arm work to strengthen Terry’s pelvic-lumbar stabilization and scapular positioning for long hours at the office. This series consists of chest expansion, biceps, rhomboids, hug-a-tree and salute and challenges scapular stabilization and core strength to maintain a strong neutral spine. I cue her to maintain a tall spine and scapular stability throughout. As a business manager, Terry’s job requires her to be at the computer for long hours. She needs the strength and indurance to maintain good posture throughout the day and this arms series will provide just that. As previously discussed within the stretching block, a rounded therasic spine may be one of the attributing factors to minimal activity within the pelvic floor. In most cases, one would not think to associate the two areas with one another, which is why discussing this research with my client has been so beneficial for her. She now understands why we do what we do and can apply it to her everyday life.

For leg work, I have chosen to give single leg skating. This focuses primarily on the gluteas medius, and will help balance the position of Terry’s pelvis. Much of what we hear regarding PFD therapy focuses on the practice of proper Kegel muscular contractions. Kegels are a good source to follow, except when they are done excessively. In fact, too many contractions will “continue to pull the sacrum inward promoting even more weakness, and more pelvic floor gripping. The muscles that balance out the anterior pull on the sacrum are the glutes” (Advanced Massage, 2014). Therefore, if someone with weak gluteals is practicing too many Kegels, they are more susceptible to developing PFD. Single leg skating will offer the gluteal strength she needs to balance out the pelvic floor. I cue Terry to push down through the skating heel, straighten that knee completely and keep hips level. With such good stability in her pelvis, she is able to feel the gluteas
medius engage.

Due to the tightness in Terry’s back as well as instability in her shoulders, we will move onto mermaid for the later flexion and rotation block. I especially like mermaid for the placement of the legs. This position gives Terry a nice opportunity to stretch tight adductors and hip rotators that could be off setting the pelvic position. As she rotates her upper body around to the foot bar I cue to keep stable shoulder strong and spine elongated through the back of the neck. The abdominal recruitment is also a key focus for us as it contributes to further stability of the torso and pelvis. This exercise would not be complete without a lateral stretch over the shoulder pads.

Lastly, we will complete pulling straps 1 for the back extension block. The benefits to this exercise include strengthening shoulder extensors to correct rounded shoulders as well as working back extensors to further stabilize the pelvis. The multifidus is a deep posterior muscle that runs along the spine and functions together with the transversus abdominis, and pelvic floor. Throughout this session, we have focused on the transversus abdominis, pelvic floor, and now it is only logical to complete our work with the multifidus. As Terry sets up for the exercise, I cue her to draw her shoulders down, pull up in the abdominals, and lengthen her legs. As she begins I watch to see if the elbows are straight and the palms are faced towards the hips.

In conclusion, looking back to where Terry and I began, it is hard to believe that this is the same person; what an amazing transformation in so little time. What I enjoy most about Pilates and what it could offer is that it begins with an internal focus before moving outward. Most other fitness routines are geared towards minutes, weights, and reps, yet where is the concentration, the precision, the control, the center, the breath or the flow? These key concepts are, in my opinion, more beneficial to what are body needs in regards to health, wellness and prevention than any other form of conditioning. Terry has seen her symptoms almost disappear in our time together, and that makes me feel very accomplished. I believe she will continue to grow in her flexibility and strength for many years to come and hopefully be able to help another find relief down the road.

“American Society of Colon and Rectal Surgeons.” Web. 2008


Richard C. Bump, MD, Peggy A. Norton, MD. “Epidemiology and Natural History of Pelvic Floor Dysfunction”. Volume 25, Issue 4, 1 December 1998, Pages 723-746


“Advanced Massage” Hands On. Web 2014

Nordin, J. Walker, C. Schwarz, K. “Texas Sate University’s Evidence-based Practice project”. 2009