

Pelvic Floor Muscle Exercises: Becoming the Master of Your Pelvic Domain

The pelvic floor muscles (PFM)—first described by Dr. Arnold Kegel—are key muscles that are essential to the health and well being of both women and men. These muscles do not get a great deal of respect, as do the glamour muscles of the body including the pectorals, biceps and triceps. The PFM should garner such respect because, although hidden from view, they are responsible for some very powerful and beneficial functions, particularly when trained.

The PFM compose the floor of our “core” muscles. Our core is a cylinder of muscles of our torso that function as an internal corset. They surround the inner surface of the abdomen, providing *stability*. These muscles are referred to in Pilates as the “powerhouse”; Tony Horton, guru of the P90x exercises series, uses the term “cage.” The major muscle groups in this core are the following: in the front the *transversus abdominis* and *rectus abdominis*; on the sides the *obliques*; in the back the *erector spinae*; the roof is the *diaphragm*; the base are the *PFM*. These muscles stabilize the torso during dynamic movements and provide the wherewithal for body functions including childbirth; coughing; blowing our noses; equalizing the pressure in our ears when we are exposed to a change in air pressure as when we travel on airplanes; passing gas; moving our bowels; etc. If you want to be able to expectorate like Gaston in *Beauty and the Beast*, you need a good core!

Core strength provides us with good posture, balance, support of the back and stabilization and alignment of the spine, ribs and pelvis. The core muscles are a “missing link” when it comes to fitness, often neglected at the expense of the limb muscles. Tremendous core strength is evident in dancers, swimmers, and practitioners of yoga, Pilates and martial arts. The core stabilizes the trunk while the limbs are active, enabling us to put great effort into limb movements—it is impossible to use the arms and legs effectively in any athletic endeavor without a solid core to act as a platform to push off. An example of static core function is standing upright in gale force winds—the core helps stabilize the body so that the winds do not cause a loss of balance or posture. An example of dynamic core function is running up flight of stairs, resisting gravity while maintaining balance and posture.

POP QUIZ (answer below): CAN YOU NAME AN ANIMAL THAT HAS TREMENDOUS CORE STRENGTH?

The PFM form the base of the pelvis and represent the floor of the core muscles. They provide support to the urinary, genital and intestinal tracts. There are openings within the PFM that allow the urethra, vagina, and rectum to pass through the pelvis to their external openings. There are two layers of muscles:

the deep layer is the *levator ani* (literally, “lift the anus”) and *coccygeus* muscle. The levator ani consists of the *iliococcygeus*, *pubococcygeus*, and *puborectalis*. The superficial layer is the *perineal muscles*. These consist of the *transverse perineal muscles*, the *bulbocavernosus* and *ischiocavernous muscles*, and *anal sphincter muscle*.

The PFM have a resting muscle tone and can be voluntarily and involuntarily contracted and relaxed. A voluntary contraction of the PFM will enable interruption of the urinary stream and tightening of the vagina and anus. An involuntary (reflex) contraction of the PFM occurs, for example, at the time of a cough to help prevent urinary leakage. Voluntary relaxation of the PFM occurs during childbirth when a female voluntarily increases the abdominal pressure at the same time the PFM are relaxed.

The PFM have three main functions: *supportive*, *sphincter*, and *sexual*. Supportive refers to their important role in securing our pelvic organs in proper position. Sphincter function allows us to interrupt our urinary stream, tense the vagina, and pucker the anus and rectum upon contraction of the PFM. In terms of female sexual function, the PFM tightens the vagina, helps maintain and support engorgement and erection of the clitoris, and contracts rhythmically at the time of orgasm. With respect to male sexual function, the PFM helps maintain penile erection and contracts rhythmically at the time of orgasm, facilitating ejaculation by propelling semen through urethra.

In men, the bulbocavernosus muscle surrounds the inner urethra. During urination, contraction of this muscle expels the last drops of urine; at the time of ejaculation, this muscle is responsible for expelling semen by strong rhythmic contractions. In women, the bulbocavernosus muscle is divided into halves that extend from the clitoris to the perineum and covers the erectile tissue that is part of the clitoris. The ischiocavernosus muscle stabilizes the erect penis or clitoris, retarding return of blood to help maintain engorgement.

The PFM can get weakened with aging, obesity, pregnancy, chronic increases in abdominal pressure (due to straining with bowel movements, chronic cough, etc.), and a sedentary lifestyle.

In women suffering with urinary incontinence or pelvic relaxation, the strength of the PFM can be assessed by inserting an examining finger in the vagina, after which the patient is asked to contract her PFM tightly. (A similar assessment can be performed by placing a finger in the rectum, after which the patient is asked to contract the PFM.)

The Oxford grading scale is used, with a scale ranging from 0-5:

- 0—complete lack of response
- 1—minor fluttering
- 2—weak muscle activity without a circular contraction or inward and upward movement

3—a moderate contraction with inner and upward movement

4/5—a strong contraction and significant inner and upward movement

PFM exercises are used to improve urinary urgency, urinary incontinence, pelvic relaxation, and sexual function. The initial course of action is to achieve awareness of the presence, location, and nature of these muscles. The PFMs are *not* the muscles of the abdomen, thighs or buttocks, but are the saddle of muscles that run from the pubic bone in front to the tailbone in back. To gain awareness of the PFM, interrupt your urinary stream and be cognizant of the muscles that allow you to do so. Alternatively, a female can place a finger inside the vagina and try to tighten the muscles so that they cinch down around the finger. When contracting the PFMs, the feeling will be of your “seat” moving in an inner and upward direction, the very opposite feeling of bearing down to move your bowels. A helpful image is movement of the pubic bone and tailbone towards each other. Another helpful mental picture is thinking of the PFMs as an elevator—when PFMs are engaged, the elevator rises to the first floor from the ground floor; with continuing training, you can get to the second floor.

Once full awareness of the PFM is attained, they can be exercised to increase their strength and tone. The good news is that you do not need to go to a gym, wear any special athletic clothing, or dedicate a great deal of time to this. As a test, perform as many contractions of your PFM as possible, with the objective of a few second contraction followed by a few second relaxation, doing as many repetitions until fatigue occurs. The goal is to gradually increase the length of time of contraction of the PFMs and the number of repetitions performed. Working your way up to 3 sets of up to 25 repetitions, 5 seconds duration of contraction/5 seconds relaxation, is ideal. These exercises can be done anywhere, at any time, and in any position—lying down, sitting, or standing. Down time—traffic lights, standing in check-out lines, during commercials while watching television, etc.—are all good times to integrate the PFM exercises. Expect some soreness as the target muscles will be overloaded at first, as in any strength-training regimen. It may take 6-12 weeks to notice a meaningful difference, and the exercises must be maintained because a “use it or lose it” phenomenon will occur if the muscles are not exercised consistently, just as it will for any exercise.

With respect to incontinence and urgency, recognize what the specific *triggers* are that induce the symptoms. Once there is a clear understanding of what brings on the urgency or incontinence, immediately prior to or at the time of exposure to the trigger, rhythmically and powerfully contract the PFM—“snapping” or “pulsing” the pelvic floor muscles repeatedly—this can often be a means of pre-empting or terminating both urgency and leakage. This benefit capitalizes on a reflex that involves the PFMs and the bladder muscle—when the bladder muscle contracts, the PFM relaxes and when the PFM contracts, the bladder muscle relaxes. So, in order to relax a contracting bladder (overactive bladder), snap the PFM a few times and the bladder contraction dissipates.

Stress incontinence can improve as well, because of increased resistance to the outflow of urine that occurs as a result of increased PFM tone and strength.

By improving the strength and conditioning of the PFM, one may expect to reap numerous benefits. Urinary control will improve, whether the problem is stress incontinence, urgency, or urgency incontinence. Post-void dribbling (leaking small amounts of urine after completing the act of voiding) will also be aided. Furthermore, improvement or prevention of bowel control issues will accrue. Some improvement in pelvic organ prolapse may result, and PFM exercises can certainly help stabilize the situation to help prevent worsening. PFM toning can also improve sexual performance in both genders. When a female masters her pelvic floor, she acquires the ability to “snap” the vagina like a shutter of a camera, potentially improving sexual function for herself and her partner. Similarly, when a man becomes adept at PFM exercises, erectile rigidity and durability as well as ejaculatory control and function can improve. For both sexes, PFM mastery can improve the intensity and quality of orgasms. In terms of quality of life, PFM exercises are really as important—if not more so—than the typical resistance exercises that one does in a gym.

Andrew Siegel, M.D.
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ANSWER TO QUESTION: Can you name an animal that has tremendous core strength?

Dolphins—essentially all core with rudimentary limbs.