

Keeping the vital pelvic floor healthy

Strong pelvic floor muscles support continence and pelvic vitality in older adults. Here's how you can help your clients condition these important muscles

by Nancy Muller

After age 40, men and women begin losing muscle at the rate of about half a pound per year, replacing it with fat. The rate of loss doubles for women after menopause.¹ Unless an effort is made to prevent this loss of lean body mass through exercise, gradual declines take place in muscular strength and endurance throughout the body, including the internal muscles.

The pelvic floor is a *hammock* of muscles that supports the internal abdominal and pelvic organs (see figures 1 and 2 on page 35). These muscles run in different directions, vary in size, and support, lift and control the sphincter muscles that close the urethra and rectum. When healthy, all the pelvic floor muscles can be voluntarily controlled. If these muscles become weak, however, the effects can include loss of bladder and even bowel control, loss of pelvic organ support, and diminished sexual enjoyment.



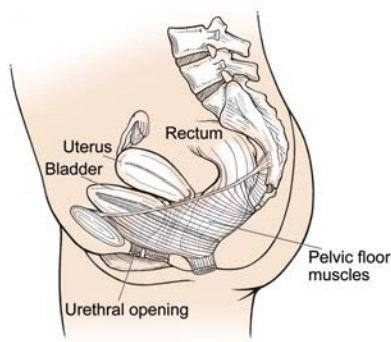


Figure 1. The female pelvic floor

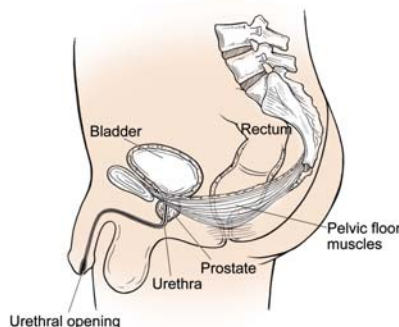


Figure 2. The male pelvic floor

The National Association For Continence, a consumer education and advocacy organization, estimates that 25 million adults across the United States routinely experience loss of bladder control due to a variety of causes. It is more difficult to estimate the prevalence of fecal incontinence, or loss of bowel control. But studies suggest that at least 2–3% of the adult population is affected, which translates into approximately five million adults.

Symptoms of incontinence

Urinary incontinence, or loss of bladder control, can take different forms:

- **Stress incontinence** is the leakage of urine when coughing, sneezing, laughing, straining or lifting.
- **Urge incontinence** is the urgent need to pass urine with little or no warning, accompanied by the inability

to reach the toilet in time. Sudden urgency, frequency of urination and urge incontinence are all symptoms of overactive bladder.

- **Mixed incontinence** is the combination of urge and stress incontinence symptoms.
- **Overflow incontinence** is the seepage of urine when the prostate gland becomes enlarged in men or a pelvic organ slips out of position in women, blocking the normal flow of urine through the urethra. Overflow may also result from nerve damage.

Incontinence may occur for transient reasons, such as tissue trauma caused by surgery, from which the body recovers. Other factors may chronically interfere with timely toileting, even when there are no inherent problems with the bladder and lower urinary tract. An example: impaired mobility caused by arthritis.

While incontinence threatens the quality of life of people of all ages, its prevalence increases with age in both sexes. Yet this urinary system problem is far more widespread among women and appears most commonly in women older than 50.²

How exercise benefits the pelvic floor

More than half a century ago, gynecologist Arnold Kegel proposed that female stress incontinence occurred because of a lack of awareness of the function and coordination of the pelvic floor muscles.³ As a result, pelvic floor muscle exercises (also known as *Kegels*) have traditionally been used for treating stress incontinence in women. Growing clinical evidence suggests that this training can also help men restore muscle strength following prostate surgery, minimizing or eliminating the involuntary loss of urine caused by surgical trauma to the urethra and urethral sphincter. So pelvic floor muscle exercises are now considered the

first line of treatment for stress urinary incontinence in both men and women.

Although more research is needed, exercises for the pelvic floor were recently shown effective for urge and mixed incontinence, as well. Investigators believe that increased muscle strength, improved resting pressure in the urethra, increased urethral closure pressure, and increased bulk around the urethra may account for the clinically demonstrated improvements.⁴ Furthermore, knowing how to contract the pelvic floor muscles can be key to managing urgency, or the symptoms of overactive bladder, and preventing episodes of incontinence.

Additional benefits exist. According to some research, training the pelvic floor muscles may help prevent—even reverse—mild pelvic organ prolapse in women. (Prolapse occurs when the tissues supporting a pelvic organ are no longer able to hold it in place.) A strong pelvic floor also helps to support anal sphincter function, thus guarding against fecal incontinence. Lastly, the pelvic floor muscles contribute to sexual pleasure and satisfaction. Keeping these muscles strong helps to maintain the pelvic vitality considered so essential to male and female sexual function.

Today, pelvic floor muscle exercises represent a clinical cornerstone of behavioral intervention in addressing symptoms of stress, urge and mixed incontinence. Such behavioral treatments, including biofeedback, verbal instruction and physical therapy, are safe options. However, to be effective, they require commitment and patience on the part of the individual.

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Strengthening the pelvic floor muscles

The focus of pelvic floor muscle exercises is on altering the physiologic responses of the bladder, rectum and pelvic floor muscles. Two kinds of muscle fibers make up the pelvic floor, and both need exercise.

The first type of muscle fibers serves a support function. To exercise these fibers, individuals must do long, slow muscle contractions, with the goal of holding single contractions for a count of 10. The second type of muscle fibers helps the muscles quickly shut off the flow of urine or gas and stool to prevent accidents. People should do short, quick contractions to exercise these fibers, completing 10 contractions in about the same time they would hold a single long contraction. It is important that clients rest the pelvic floor muscles between repetitions and avoid doing too many repetitions at one time to prevent these muscles from becoming fatigued. (The client handout on page 37 offers instructions for these beginner-level exercises.)

Health and wellness professionals might want to encourage older clients to start by doing the above exercises at home to strengthen their pelvic floor muscles. Eventually, individuals can progress to doing more traditional fitness exercises, either at home or in fitness settings, while contracting these muscles.

Another way to progress the challenge involves making exercises of those daily activities during which individuals have trouble with bladder control. (Kelli Berzuk, PT, provides readers with examples of both approaches in “Exercises to condition the pelvic floor muscles” on pages 40–41.)

Path to improvement

While neither difficult nor time-consuming to do, contracting or relaxing the pelvic floor muscles requires concentration and practice. Individuals must be able to *locate* these muscles to exercise them correctly.

Some clients may have trouble isolating the pelvic floor muscles at first. These individuals may need to work with a physical therapist or nurse specialist, who can use biofeedback to help them identify the right muscles. In fact, contemporary research reveals that 30–50% of people cannot contract their pelvic muscles or contract them incorrectly and need the help of a trained specialist or home training device.⁵ In rare cases individuals cannot benefit from pelvic floor muscle rehabilitation, however. For example, if during a vaginal delivery a woman loses portions of her pelvic muscles that influence continence, she is unlikely to find pelvic muscle exercises effective.⁶

For individuals with nerve damage, a healthcare provider may recommend electrical stimulation, which releases a small electrical charge directly to the muscle, producing a contraction. In this way, the muscles *re-learn* how to contract—eventually with conscious instruction. Electrical stimulation can be performed in a continence care specialist’s office or with the help of a home device.

Regardless of the approach used, building pelvic floor muscle strength takes time. It may be weeks or months before individuals see meaningful results. Health and wellness professionals should advise aging clients to look for proof in the meantime that their pelvic floor muscle exercises are working. Small signs of improvement include longer times between bathroom visits, fewer leaking

Resources

Canadian Continence Foundation
www.continence-fdn.ca/

I laughed so hard I peed my pants!
A woman’s essential guide for improved bladder control

By Kelli Berzuk, PT
www.ilaughedsohard.com
Also available from NAFC for US\$36.49 (includes shipping and handling).

National Association For Continence (NAFC)
www.nafc.org

- **Women’s Pelvic Muscle Exercise Kit**
US\$15 postpaid (includes shipping and handling)
Includes a manual, motivational video and instructional audio recording. Available in DVD/CD or VHS/cassette formats.
- **Men’s Pelvic Muscle Exercise Kit**
US\$6 postpaid (includes shipping and handling)
Includes an audio cassette and manual.

accidents, the ability to hold muscle contractions longer and do more repetitions, less frequent feelings of wetness, and more enjoyable sex. Clients may also want to keep records of their progress, as well as reward themselves to remain motivated. And if symptoms persist beyond eight weeks without improvement, they should enlist the help of a continence care specialist.

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Contracting the pelvic floor muscles: exercises for beginners

There are two kinds of fibers in the pelvic floor muscles and you must exercise both to improve your strength in combating incontinence. The first kind helps your muscles shut off the flow of urine quickly to prevent accidents and is exercised with short, quick contractions. The second kind supports your muscles and is exercised with slow, long contractions.

Fast contractions

Begin by finding a comfortable position. This may be sitting on a chair or lying in bed or on the floor, with your legs extended or bent. You can do these exercises in any position with the same results, but as a beginner you should find the easiest way to help you locate your pelvic floor muscles.

Take a few deep breaths, relaxing all your muscles. Try to keep your abdominal muscles (stomach) and anal muscles (buttocks) relaxed. Some women believe that contracting their stomach muscles exercises their pelvic floor muscles. This is incorrect. If you like, place a hand on your lower stomach. You should not feel it move while you do these exercises. Squeeze your muscles quickly and strongly for just a second or so, release the contraction for just a moment, and contract again. Your goal is to do five repetitions of this exercise two times a day. Begin with as many as you can, and build up to this goal.

Long contractions

The second kind of exercise consists of long contractions. The principle is the same, but you will squeeze your muscles more slowly, and rest after each exercise. Contract your pelvic floor muscles slowly. Try to keep your abdomen and buttocks relaxed. Slowly, contract your pelvic floor muscles, and hold for a few seconds. In the beginning, you might not be able to hold the contractions for longer than two or three seconds at a time. This is normal, and as you become stronger you'll see that you can hold the contractions longer. In time, your goal is to hold

your pelvic floor muscle contraction for 10 seconds at a time.

As you release your first contraction, continue breathing slowly and relax the muscle. Rest is just as important as the exercise, so never skip this step. Relax the muscle for 10 seconds, regardless of how long you maintained the contraction. Once you have rested, contract your muscles again.

Repeat this exercise a few times. In the beginning, you may find that you can repeat the contraction only five times, or maybe not even that. Do what is comfortable, but try to challenge your muscles, because that is the only way they can become stronger. As you continue these exercises, you will be able to add more repetitions. Try doing an extra repetition once or twice every week. Eventually, you should be able to complete 20 repetitions, two times a day.

This text is excerpted from the Women's Instructional Manual for Pelvic Floor Muscle Exercises, published by the National Association For Continence. For information about exercise instruction kits for men and women, call NAFC toll-free at 800-252-3337.

This handout appears in the May/June 2005 issue of the Journal on Active Aging, published by the International Council on Active Aging.

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When the pelvic floor muscles lose their strength and endurance, the problems that arise can seriously affect an individual's quality of life. To prevent or address these problems, exercise that conditions the pelvic floor must become a lifelong habit. ☺

Nancy Muller is the executive director of the National Association For Continence, the world's largest and most prolific consumer advocacy organization devoted exclusively to this field of healthcare. Muller has served in this capacity since 2000, and she has been on NAFC's board of directors since 1996. Prior to directing NAFC, she served as chief operating officer for South Carolina's largest group of private medical practices focused on nutritional counseling and intervention. More information about NAFC is available at www.nafc.org.

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Signs for referring aging clients to healthcare professionals

by Kelli Berzuk, B.A., B.Sc.

Fitness and wellness professionals need to recognize when older adults are having trouble with pelvic floor muscle (pfm) exercises, as research tells us that many people do these exercises incorrectly when given verbal instruction.

When clients complete pfm exercises correctly, they may notice the following:

- Increased strength and endurance of their pfm contraction;
- Improved bladder and bowel control;
- Increased sexual sensation and appreciation; and
- Improved support to the pelvic organs.

If individuals do not report improvements in these areas, they likely are not contracting their pfm correctly or effectively. Often, they are recruiting accessory muscles, instead of the pfm. Most commonly, people contract their abdominal, gluteal or hip adductor muscles and unknowingly ignore the pfm. As these accessory muscle contractions

will not promote pfm health or strengthening, individuals become frustrated and stop doing the exercises. Fitness and wellness professionals can help by assessing accessory muscle groups and encouraging clients to relax these areas during pfm contraction. An easy way to tell whether someone is recruiting the right muscles is to watch the body for movement. If the body moves, the client is contracting muscles other than the pfm.

Fitness and wellness professionals should refer older clients to healthcare professionals trained in pfm dysfunction when individuals are unsure they are contracting the correct muscle, when there is significant accessory muscle use, or when there is no improvement in symptoms and pfm strength.

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Exercises to condition the

by Kelli Berzuk, B.A., B.Sc.

To address weak pelvic floor muscles (pfm) in older adults, fitness and wellness professionals must first ensure that clients become proficient in contracting these muscles (see “Contracting the pelvic floor muscles: exercises for beginners” on page 37). These movements will increase pfm strength and endurance in most individuals. Once improvement is noted, what then? Clients can progress to incorporating pfm contractions into regular exercise routines, as well as activities of daily living.

Exercises and activities that involve contracting the abdominal muscles will increase intraabdominal pressure, producing a downward pressure on the pelvic floor musculature. To protect this area, clients can try to contract their pfm *before* recruiting the abdominal muscles. The following exercises are examples of where pfm contraction throughout the movement has both fitness and functional benefits.



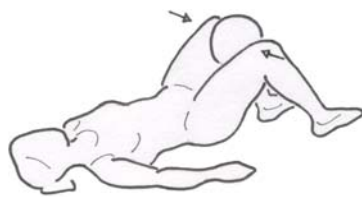
A. The Bridge

1. Lie on your back with your knees bent and feet flat on the floor, slightly separated. Relax and remember to breathe normally.
2. Contract your pfm, slowly drawing these muscles into your abdomen and toward your head. Imagine you are trying not to lose urine or pass gas.
3. Next, raise your hips off the floor, trying to make a straight line from your knees to your shoulders. While raising your body into this position, your pfm should remain firmly contracted.
4. Hold this position for 10 seconds.

5. Lower your body to the floor.
6. Finally, relax your pfm fully.
7. Repeat this exercise 5–10 times.

By ensuring the pfm is the first area to contract and the last to relax, clients can counteract the downward intra-abdominal pressure on the pfm.

Tip: If this exercise increases hip discomfort in clients, especially those who have undergone hip replacement surgery, professionals should modify this movement. In these circumstances, clients should raise their hips to six inches off the ground, instead of trying to make a straight line from knees to shoulders.



B. Squeeze-the-Ball

1. Lie on your back with your knees bent and feet flat on the floor, slightly separated. Relax and remember to breathe normally.
2. Place a 6–8 inch ball between your knees.
3. Contract your pfm, slowly drawing it into your abdomen and toward your head. Imagine you are trying not to lose urine or pass gas.
4. Now, squeeze the ball with your knees, to superimpose hip adductor muscle contraction onto the pfm contraction.
5. Squeeze the ball firmly for a count of 10 seconds.
6. Release the squeeze and relax your hips.
7. Finally, relax your pfm fully.
8. Repeat this exercise 5–10 times.

This exercise is especially good for people who have difficulty contracting or isolating their pfm, as recruitment of

these muscles is often associated with hip adductor contraction.

Tip: Fitness and wellness professionals can substitute a folded pillow for the ball.

Working the pelvic floor muscles in daily activities

Older clients can take the approach illustrated in the traditional exercises above and use it for activities of daily living. This involves activating and recruiting the pfm during daily activities that increase intraabdominal pressure, thereby counteracting the downward pressure on the pfm.

Individuals with urinary or anal incontinence (both gas or loss of stool) should note the activities they are involved in when problems arise. They can then practice contracting the pfm during these specific activities.

For example, a client who leaks urine when bending down to pick up the car should contract the pfm before bending. This contraction will not only compensate for the increase in intraabdominal pressure, but also produce better closure to the urethral sphincter. In addition, contracting these muscles will support the internal pelvic organs, such as the bladder, and therefore position the organs to function properly.

An individual who experiences leakage during golfing should practice swinging a golf club while maintaining a pfm contraction. At first, it may help to mock a golf swing without holding a club. This will allow the person to concentrate on holding the pfm contraction, while the arms, torso, hips and lower limbs follow through the swinging motion. The client can try this movement with a club in hand once he or she finds the mock swing easy and feels confident that the pfm contracts

pelvic floor muscles

before the swing, stays contracted during the movement, and remains contracted until actively relaxed after the follow through. The weight of the club will probably make the exercise more difficult initially. However, the movement will become easier with practice.

Say someone enjoys curling and leaks urine while throwing a rock. This person must learn to contract the pfm *while* opening the pelvis as the rock is released. He or she can reenact this crouching position at home while doing long-hold pfm contractions (as described on page 37). The client may find it quite a challenge to contract the pfm in this stretched position. When the movement becomes easy, he or she can then practice it in a cold arena. Cold will often have a negative effect on the bladder muscle and

lead to feelings of urgency. As well, the pfm may be sluggish to contract when cold. For these reasons, a client should begin this exercise in a warmer environment and avoid adding the stress of cold temperatures until prepared for this progression.

Older adults who incorporate pfm contractions into their activities of daily living will probably begin to contract these muscles subconsciously. Eventually, they may develop the habit of contracting the pfm during daily activities. By contracting their pfm during traditional exercises and/or daily activities, many older adults will strengthen these muscles and reduce their problems with incontinence.☞

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director of IPPC—Incontinence & Pelvic Pain Clinic (division of Nova Physiotherapy & Sports Fitness Clinic), located in Winnipeg, Manitoba, Canada. For the past 11 years, she has concentrated on the treatment of incontinence and pelvic floor muscle dysfunction for women and men and enuresis/encopresis in children. Further information on incorporating pelvic floor muscle contractions during traditional and functional exercises and activities of daily living is available in Berzuk's book, I Laughed So Hard I Peed My Pants! A Woman's Essential Guide for Improved Bladder Control. (See "Resources" on page 36 for more information about this book.)

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