

## Continence for Women: Evidence-Based Practice

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Approximately 20% of women ages 25–64 years experience urinary incontinence. The symptoms increase during perimenopause, when 31% of women report that they experience incontinent episodes at least once per month. Bladder training and pelvic muscle exercise are the recommended initial treatment and can be taught effectively in the ambulatory care setting. Bladder training enables women to accommodate greater volumes of urine and extend between-voiding intervals. Pelvic muscle exercise increases muscle strength and reduces unwanted urine leakage. Accumulated research results provide evidence-based guidelines for nursing practice. The Association of Women's Health, Obstetric, and Neonatal Nurses has identified continence for women as the focus of its third research utilization project. This article presents the rationale, evidence base, and educational strategies compiled by the Research Utilization 3 Nurse Scientist Team. Nurses can enable women to incorporate these noninvasive techniques into self-care. *JOGNN*, 26, 375–385; 1997.

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Urinary incontinence (UI), the involuntary loss of urine that results in a social or hygienic problem, is a common health problem for women (Bates et al., 1979). Over the past decade, substantial resources have been allocated to the study of incontinence; this effort has yielded an accumulation of research to provide evidence-based guidelines for nursing practice (Fantl et al., 1996). Given the current state of the science, the Association of Women's Health, Obstetric, and

Neonatal Nurses has identified continence for women as the third Research Utilization Project (RU3) ("Emerging Ideas," 1996). The RU3 Nurse Scientist Team has focused on identification of research with demonstrated effectiveness in UI treatment for application to nursing practice in ambulatory care settings. This article presents the rationale, evidence, and educational strategies nurses can use to enable women to learn valuable self-care techniques that promote urinary continence.

### Background

Approximately 20% of women between ages 25 and 64 years experience UI (Herzog & Fultz, 1990). The symptoms increase in the perimenopausal years, when 31% of women report incontinent episodes at least once per month (Burgio, Matthews, & Engel, 1991). Jolleys (1988) found an age-related increase in reported UI: from 46% in women ages 35–44 years to 60% in women ages 45–54 years. Sommer et al. (1990) identified greater levels of stress incontinence among women in their 40s as compared with women in their 30s. Lagace, Hansen, and Hickner (1993) documented increases in overall incontinence and in more severe or bothersome levels of accidental urine leakage among women in their 40s and 50s. Finally, in a carefully sampled community-based population, 38% of women ages 60 years and older who were living at home reported symptoms of UI (Diokno, Brock, Brown, & Herzog, 1986).

Although UI occurs in nulliparous women (Sommer et al., 1990), evidence identifies vaginal birth as a significant predictor of UI. Women who have had even one vaginal birth are more than 2.5 times as likely to report incontinence than are their nulliparous counterparts (Jolleys, 1988; Sommer et al., 1990). Rates also have been found to increase with parity: 38% of mothers reported some UI after one vaginal birth, 57% after two vaginal births, and 73% after three vaginal births (Nygaard, DeLancey, Arnsdorf, & Murphy, 1990). The specific mechanism for the birth-related influences on the continence system has yet to be identified, but a growing body of evidence points to neurologic and musculoskeletal damage (Allen, Hosker, Smith, & Warrell, 1990; DeLancey, 1993).

**A**pproximately 20% of women between the ages of 25 and 64 years have urinary incontinence; the prevalence increases during perimenopause.

Despite increased awareness of UI as a women's health problem, many people still think of the condition as an inevitable, untreatable, even normal part of being female. As a result, fewer than 50% of affected women who reside in the community seek advice from their health care providers (Burgio, Matthews, & Engel, 1991). Thus, health care providers should screen routinely for UI. Whether written or verbal, the screening questions should be prefaced with language that destigmatizes the condition. A screening example is presented in Figure 1.

The types of UI most commonly seen in women are (a) stress UI, characterized by involuntary loss of urine when intra-abdominal pressure increases, such as during coughing, sneezing, laughing, or physical exertion; (b) urge UI, associated with urgency, that is, a strong desire to void that is sometimes but not always associated with involuntary detrusor contraction; and (c) mixed incontinence, which combines the symptoms of stress and urge UI.

The updated *Clinical Practice Guideline: Urinary Incontinence in Adults* (Fantl et al., 1996) is based on a critical review of the existing research base for the treatment of UI. Single copies of the quick reference guideline may be ordered free of charge from the Agency for Health Policy Research (800) 358-9295. The following recommendations advanced in the clinical practice

guideline were based on strong and convergent research support:

Bladder training is strongly recommended for management of urge and mixed incontinence. Bladder training is also recommended for management of stress urinary incontinence (Fantl et al., 1996, p. 35). Pelvic muscle exercises are strongly recommended for women with stress urinary incontinence (Fantl et al., 1996, p. 36).

The ability to contract the pelvic muscles correctly, as done in pelvic muscle exercise, often enhances women's success with a bladder training program. Thus, knowledge of bladder training and pelvic muscle exercise is an important element of self-care, especially for women who have mild to moderate symptoms of UI. Moreover, neither strategy has been shown to jeopardize future therapy.

### Bladder Training: Rationale, Evidence Base, and Educational Strategies

Bladder training, a technique originally designed to decrease episodes of urge incontinence, also is referred to as bladder drill, bladder re-education, bladder retraining, and bladder discipline. The method was first introduced by Jeffcoate and Francis (1966).

#### Rationale

Although the bladder is made up primarily of smooth muscle, it is an organ under cortical control. The healthy bladder relaxes to accommodate storage of urine and allows the woman to suppress the micturition urge until she is in a socially convenient place. Normally, the initial desire to void occurs when a bladder capacity of approximately 150–250 ml is reached; most women do not respond to the initial micturition urge, but wait until a bladder capacity of 450–650 ml is reached (Wall, Norton, & DeLancey, 1993). The complex neurophysiology that involves interaction among the bladder, spinal cord, and cerebral cortex yields a typical voiding frequency of 5–7 per day (Sommer et al., 1990).

**B**ladder training and pelvic muscle exercise are noninvasive techniques that significantly decrease or cure incontinence in many women.

Some women, especially those with a history of urinary tract infections, have been taught that the healthiest pattern of voiding is to empty the bladder as frequently



Date:  /  /   
Site:   
Participant:

### Continence for Women Project: Screening Questions

*Losing urine/water is a problem for many women. Unfortunately, some women do not know that this problem is common and treatable. Your honest answers to these questions will help us to give you better care, and will be kept strictly confidential. Thank you for your help!*

1. Do you ever leak urine/water when you don't want to?  Always  Sometimes  Never
2. Do you ever leak urine/water when you cough, laugh, or exercise?  Always  Sometimes  Never
3. Do you ever leak urine/water on the way to use the bathroom?  Always  Sometimes  Never
4. Do you ever use pads, tissue, or cloth in your underwear to catch urine?  Always  Sometimes  Never

**FIGURE 1**  
Screening questions about continence. Copyright 1997 by AWHONN.

as possible to avoid urinary stasis. Others, who have a history of UI, empty the bladder as often as possible to minimize the amount of urine stored so that in the event of an incontinent episode, less leakage will occur. Unfortunately, this can result in a diminished bladder capacity and the inability to store urine for longer than 60–90 minutes. The need for such frequent toileting is inconvenient, embarrassing, and may trigger a spiral of ever-shortening intervals between voiding.

#### Evidence Base

In a prospective trial that included 12 weeks of bladder training, Pengelly and Booth (1980) found that more than half of the 25 participants who completed the program were completely cured or improved and none got worse. More recently, Fantl et al. (1991) demonstrated a 57% reduction in incontinent episodes for 123 women age 55 years and older who participated in a 6-week program of bladder training. These studies provide empirical evidence for the efficacy of bladder training to diminish or eliminate UI symptoms.

#### Education

Bladder training consists of information provided to the woman about normal bladder function, use of a voiding schedule that incorporates systematic delay of voiding by using distraction and relaxation techniques, self-monitoring, and positive reinforcement. The methods used in bladder training enable women to accommodate increasingly greater volumes of urine in the bladder and gradually to extend the interval between voiding.

The nurse should provide basic information about normal bladder function to all female clients and assess the interval between urinating as a routine part of the health history. If the interval is between 3 and 4 hours, the nurse can affirm that the woman is following a

healthy pattern. Women should be informed that if the interval decreases (or if episodes of incontinence occur), there are tactics that can be used to reestablish a normal pattern. However, when there are no current problems, client education can be limited to providing information about the desirability of a 3- to 4-hour interval between voiding.

Women who report an interval between voiding of less than 3 hours or who report UI symptoms should be asked to keep a voiding diary for at least 3 complete days and to return to the clinic afterward for further evaluation and instruction. The diary is a 24-hour record of the voiding pattern and any incontinent episodes that might occur (see Figure 2). A wallet-sized diary is useful so that the woman may slip it unobtrusively into her handbag when she is away from home.

The bladder training program developed by Wyman and Fantl (1991) is recommended. The beginning interval between voiding is based on the diary data and is prescribed according to the guidelines presented in Table 1. These guidelines are particularly useful for women who are experiencing urgency. By beginning with a short interval, urgency symptoms are avoided. If the woman's situation does not accommodate frequent voiding, for example, if she works outside the home, the nurse can help her to plan for a more practical initial interval. However, should the woman experience any urgency with the longer initial interval between voiding, she should be advised to try the shorter interval schedule in Table 1. A 5- to 10-minute window on either side of the target voiding time allows women reasonable flexibility in maintaining the schedule. Bladder training is followed during waking hours only. After the initial daytime interval is comfortably maintained, the voiding schedule is increased by 15- to 30-minute increments. Usually, adaptation to each expanded period takes at least a week but may require several weeks for women with severe

**FIGURE 2**  
 Voiding Diary. *Note.* From *Urinary Incontinence in Adults: Acute and Chronic Management* (Clinical Practice Guideline Number 2, Update) (AHCPR Publication No. 96-0682), by J. A. Fantl, D. K. Newman, J. Colling, J. O. L. DeLancey, C. Keays, R. Loughery, B. J. McDowell, P. Norton, J. Ouslander, J. Schnelle, D. Staskin, J. Tries, V. Urich, S. H. Vitousek, B. D. Weiss, & K. Whitmore, 1996, Rockville, MD: U.S. Department of Health and Human Services.

NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

INSTRUCTIONS: Place a check in the appropriate column next to the time you urinated in the toilet or when an incontinence episode occurred. Note the reason for the incontinence and describe your liquid intake (for example, coffee, water) and estimate the amount (for example, one cup).

Time interval	Urinated in toilet	Had a small incontinence episode	Had a large incontinence episode	Reason for incontinence episode	Type/amount of liquid intake
6-8 a.m.					
8-10 a.m.					
10-noon					
Noon-2 p.m.					
2-4 p.m.					
4-6 p.m.					
6-8 p.m.					
8-10 p.m.					
10-midnight					
Overnight					

No. of pads used today: \_\_\_\_\_ No. of episodes: \_\_\_\_\_

Comments: \_\_\_\_\_

\_\_\_\_\_

**TABLE 1**  
*Guidelines for Initial Voiding Intervals Prescribed for Bladder Training*

If diary shows urinary frequency (or leakage) occurring on average of:	Prescribe initial voiding interval of:
60 minutes or greater	60 minutes
25 to 30 minutes	30 minutes
Less than 25 minutes	15-20 minutes
<i>Note.</i> From "Bladder Training in Ambulatory Care," by J. F. Wyman & J. A. Fantl, 1991, <i>Urologic Nursing</i> , 11(3), pp. 11-17. Reprinted with permission.	

urgency. Increments are added to achieve a 3–4-hour interval. Wyman and Fantl (1991) report that for many women, a 2–2.5-hour interval is tolerated better.

Women can readily understand the mechanism of bladder training when it is framed as a “mind over bladder” situation. Those who have traveled with small children often have had personal experiences in which mental distraction of the youngsters has forestalled frequent requests for bathroom stops. Many women also have experienced the “key-in-the-lock syndrome,” the strong urge to void as soon as one returns home regardless of how recently the bladder was emptied. This is a reverse example of “mind over bladder” that can help women recognize the potential benefit of actively engaging the cerebral cortex in the decision about how soon to empty the bladder.

The strategy of mental distraction is suggested for women to use to delay voiding until the scheduled time. This technique should be used in concert with deliberate relaxation, such as slow, deep breathing, to combat a stressful rush to the toilet when the first urge to empty the bladder is perceived. Thus, a relaxed acknowledgment of the initial urge to empty is recommended, followed by a conscious effort to turn the mind to something else. Writing a letter, balancing a checkbook, or counting backward from 500 by sevens are distraction techniques that frequently allow the urge to subside and enable the woman to delay voiding until the scheduled time.

Another tactic is the conscious tightening of the pelvic musculature using the maneuver used in pelvic muscle exercise. The correct technique for these contractions will be discussed below. Two or three 10-second pelvic muscle contractions often are sufficient to quiet a signal to empty prematurely.

**N**urses can provide education, advice, and encouragement about self-care practices women can use to improve bladder health.

In bladder training, women are encouraged to adhere to the prescribed schedule as closely as possible. However, if at any time they believe that incontinence is likely, they are advised to use the toilet rather than risk unwanted leakage. See Figure 3 for a bladder training teaching handout.

## Pelvic Muscle Exercise: Rationale, Evidence Base, and Educational Strategies

Pelvic muscle exercise or pelvic muscle rehabilitation is a technique for strengthening the supportive pelvic floor muscles as shown in Figure 4. Pelvic muscle exercise also is referred to as Kegel exercise, recognizing the physician who originally recommended its use in the United States (Kegel, 1948).

### *Rationale*

Although the mechanism for the effectiveness of pelvic muscle exercise is not understood fully, the generally accepted explanation for the improved continence status is that of increased muscle strength and control (Miller, Kasper, & Sampsel, 1994). When striated muscle is repeatedly contracted at moderate to near maximum intensity, the cross-sectional diameter and the ability to exert force are enhanced (Gonyea, 1980). For this improvement to occur, the correct or target muscle must be trained. Moderate to near maximum intensity of contraction is recommended to recruit those muscle fibers that are specialized to exert force rather than to maintain contraction over an extended period. Approximately 70% of the muscle fibers in the pelvic floor are slow-twitch, that is, specialized to maintain posture (Gilpin, Gosling, Smith, & Warrell, 1989). Because the fast-twitch fibers, those specialized to exert force, are drawn into use only after most slow-twitch fibers have been recruited, the intensity of contraction must be greater than 70% if strength training is the goal.

### *Evidence-Based Outcomes*

Programs of pelvic muscle exercise have been shown to increase muscle strength and reduce incontinent urine loss. In a study of 65 women ages 35–75 years, Dougherty et al. found significant improvements in force (25%) and duration (40%) of muscle contraction and significant reductions (62%) in the amount of urine leakage and reported episodes of incontinence after a 16-week course of pelvic muscle exercise (Dougherty, Bishop, Mooney, Gimmott, & Williams, 1993). Similarly, in a randomized clinical trial, Burns, Nochajski, and Pranikoff (1993) found significant reductions in urine leakage for women in a pelvic muscle training group but not for those in a nontreatment group. Fifty-six percent of women who completed a 3-month pelvic muscle exercise program had a greater than 50% improvement in the number of incontinent episodes per day (Nygaard, Kreder, Lepic, Fountain, & Rhomberg, 1996). A 5-year follow-up of women who were taught pelvic muscle exercise found their muscle strength increases to be maintained; 70% of the women not treated surgically were satisfied with their present status and did not want more extensive treatment (Bo & Talseth, 1996).

## BLADDER TRAINING PROGRAM

The bladder training program will help you regain bladder control by strengthening the brain's control over the lower urinary tract. You will do this by practicing voiding on a specific schedule. Initially, the scheduled time between voidings will be brief. However, the time period will gradually be lengthened over the course of the program until you achieve a normal voiding pattern without episodes of urine leakage or problems controlling urgency.

### INSTRUCTIONS

1. Follow the assigned voiding schedule as closely as possible. (Grace period: 10 minutes on either side of hour)
2. Begin your schedule every morning upon getting out of bed, and every evening at bedtime. No voidings are scheduled during sleeping hours.
3. If you feel the need to empty your bladder prior to your schedule voiding, **make every effort to wait to your assigned time.** If you can distract yourself long enough, often the urge to empty your bladder will pass. Suggestions which may help you push off this desire to void are:
  - Use mind games to distract your attention. Count backwards from 100 by 7's or work on a crossword puzzle.
  - Concentrate on a task which requires a great deal of concentration. For example, balancing the checkbook, writing a letter, doing handwork, planning the weekly food menus, or some other activity that requires a great deal of attention.
  - Try to distract yourself by concentrating on another body sensation, such as deep breathing. Sit down and take five slow deep breaths. Try to concentrate on the air moving in and out of your lungs, and not on your bladder sensation.
  - Use self-statements when urgency occurs such as "I can wait," "I don't have to go," "I can conquer this," or "It's not time yet to go." Create a statement that fits your situation the best.
  - Perform five quick, strong pelvic muscle contractions. Often, this will quiet the bladder down long enough for the urge to subside. Alternatively, you could try one strong holding pelvic muscle contraction. Experiment which one works best for you.

- Time how long you can push off the feeling of urgency and try to double this time when urgency occurs again. For example, if you could only control your urgency for 1 minute the first time, aim for controlling your urgency for 2 minutes the next time, and for 4 minutes the time after that.

If you have to interrupt your schedule, get back on schedule at the assigned time even if it has been only a few minutes. Thus, if you had to void 15 minutes before your assigned time, void again at your assigned time. Continue on your voiding schedule, trying not to interrupt it again.

4. Follow your voiding schedule as closely as you can. Even if you do not feel the desire to void, go to the toilet at the assigned time, and try to empty your bladder. **Remember, the amount of urine in your bladder is not important; the important part is your effort to empty it.** Whether you urinate a few drops or a pint, it really does not matter. The important thing is the effort.
5. Record each of your voidings on a Treatment Log.
6. If you miss one or more scheduled voidings, return to the schedule as soon as you remember.
7. Your Treatment Log will be reviewed each week. If you have been able to control your bladder on your assigned schedule without any problems, the voiding interval will be increased by 30 minutes. This pattern will continue each week until you achieve a normal voiding schedule.

If you had difficulty controlling your bladder on the assigned schedule, the time period between voidings may remain the same or be shortened. The voiding interval will be adjusted to meet your needs.

FIGURE 3

Bladder Training Program and Instructions. *Note.* Copyright 1996 by Jean F. Wyman. Reprinted with permission.

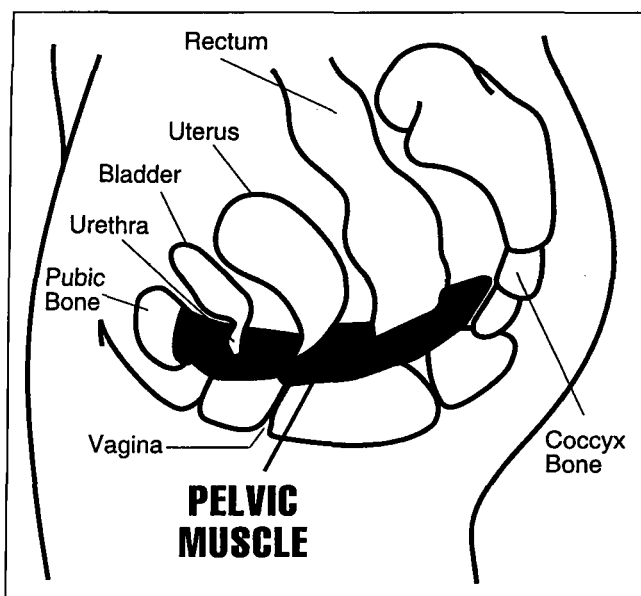
### Education

Basic information for a successful pelvic muscle exercise program includes understanding the purpose of the muscle training, the anatomy of the pelvic floor, and the characteristics of effective and ineffective contractions. The purpose of pelvic muscle training is to increase women's awareness of and to strengthen the voluntary muscles of the pelvic floor. This training improves muscle function so that the urethra is better supported in times of increased intra-abdominal pressure. More effective periurethral force increases the pressure within the urethra, thus working to maintain continence. An explanation of the pelvic floor should include the three different levels of pelvic floor musculature: superficial; mid-level muscles just above the perineal membrane; and the levator ani, which provides the most proximal support to the bladder. These are the muscles targeted for training, but because they are not visible nor routinely used, many women are unaware of their existence and of the voluntary control that can be exerted upon them. Thus, women must be taught how to isolate the target muscles and to contract them correctly.

The characteristics of an ideal pelvic muscle con-

traction are listed in Table 2. In addition to knowledge of the desired technique, women should understand what muscle activity to avoid when exercising pelvic muscles. The most undesirable behavior is executing a bearing-down effort rather than the recommended upward and inward contraction. Bump, Hurt, Fantl, and Wyman (1991) found that 25% of women who received only written instructions mistakenly executed a bearing-down or straining effort. To help a woman avoid this common mistake, the nurse should talk her through a bearing-down effort. This is accomplished by having her take a deep breath, hold it and bear down, and note the bulging of the perineum. Women should be advised that if they notice this sort of an effect during their practice of pelvic muscle contraction, they should discontinue the exercise program until they can obtain additional instruction during a pelvic examination from a qualified health care provider.

An example of correct technique that clients can readily understand is the pelvic tightening necessary to hold back the unwanted passage of intestinal gas or often experienced as a part of coitus when the penis is clasped by the vagina. Women who are comfortable using a



**FIGURE 4**  
 Diagram of Pelvic Muscles. *Note.* The pelvic muscle stretches from the pubic bone in the front to the coccyx bone at the base of the spine. Copyright 1994 by Access to Continence Care & Treatment, Inc., Philadelphia, PA. Reprinted with permission.

mirror can directly observe the perineum for evidence of correct technique. When the correct contraction is executed, the clitoris descends toward the vagina and the rectum pulls inward and upward (an analogy can be made to a slow “anal wink” or to the pursing of lips that occurs when a drink is sipped through a straw). Information about teaching pelvic muscle exercise is included in guidelines found in Sampsel and Miller (1996). See Figure 5 for a teaching handout about pelvic muscle exercise.

Although the clinical practice guideline (Fantl et al., 1996) recommends a frequency of 30–80 pelvic muscle contractions per day, positive results can be achieved using the lower level of this range (Dougherty et al. 1993; Miller, Kasper, & Sampsel, 1994). Because it is more likely that women initiate and maintain a program of exercise that requires fewer repetitions, the recommendation of 30 contractions per day is advised. To gain the highest level of benefit, each contraction should be of moderate to near maximum intensity. This requires sufficient relaxation (a minimum of 10 seconds) between each contraction. In general, a woman should pay attention to her body’s readiness to exert a concentrated contraction and rest until that readiness is apparent.

One problem with popular information about pelvic muscle exercise is that women are told that it can be done anywhere, such as waiting for a traffic light to change. This is true after the exercise is

learned, but initially, a great deal of concentration is required. It is best to advise women to set aside time each day when they can focus only on pelvic muscle exercise. Usually the best position for learning pelvic muscle exercise is supine, with the knees bent and the weight of the legs resting on the soles of the feet. If women have difficulty identifying or contracting the muscles in that position, they can try an alternative position on hands and knees.

Women should be told that several weeks of pelvic muscle exercise are needed before improvements can be expected, and lapses in protocol adherence are common. That is, most people forget to do the exercise program some days and a lapse does not mean that the program must be abandoned. Rather, women should resume the exercise program as soon as possible. In addition, they should be advised not to exercise three or four times as much to “make up for lost time,” but simply to resume the daily protocol.

Once women have learned how to do a correct pelvic muscle contraction, the carefully planned use of this technique can diminish urine leakage even before muscle strength has increased (Miller, Ashton-Miller, & DeLancey, 1996). Nurses can help women identify events most likely to result in urine leakage, such as coughing and heavy lifting. Purposeful contraction of the pelvic muscles is advised as women approach an activity likely to cause UI. This application of pelvic muscle contraction often results in an immediate improvement in symptoms.

## Further Considerations

### *Conditions Associated with Incontinence*

Before initiating an intervention for UI, it is important to assess for conditions that can trigger UI

**TABLE 2**  
*Characteristics of an Ideal Pelvic Muscle Contraction*

Pelvic floor contracts upward and inward.
Anus pulls inward and lifts upward.
Contraction is of moderate to nearly maximum level of intensity.
Bearing-down or straining down effort is absent.
Thigh muscle contraction is absent.
Gluteal muscle contraction is absent.
Contraction is held for at least 3 seconds, building to a hold of 10 seconds over time.
Contraction is relaxed slowly.
At least 10 seconds of relaxation is allowed between contractions.

## Pelvic Muscle Exercise Instructions

**Pelvic muscle exercise:** You may have heard this called Kegel exercise or pelvic muscle rehabilitation. It is a daily training program for the muscles that support the uterus, bladder, and other pelvic organs. This exercise will help your muscles get stronger. Strong pelvic muscles can help prevent accidental urine leakage.

**The way pelvic muscle exercise works:** Regular pelvic muscle exercise makes the muscles that support your pelvic organs stronger. You may have done other exercise to increase the strength and improve the shape of muscles like your abdomen or legs. This training program works the same way. Women who have a problem with urine leakage have been able to eliminate or greatly improve this problem just by doing pelvic muscle exercise each day.

**How to do pelvic muscle exercise:** When you are doing pelvic muscle exercise in a way that will build muscle strength you will feel all the muscles drawing inward and upward. A good way to learn the exercise is to pretend that you are trying to avoid passing intestinal gas. Think about the way you tighten (or contract) the muscles to keep the gas from escaping. Bring that same tightening motion forward to the muscles around your vagina. Then move the contraction up your vagina toward the small of your back. Another good way to understand the best motion for pelvic muscle exercise can be found in things we do when we are making love with a man. Think about how the vagina is able to clasp the penis and move up along the length of the penis during intercourse. This is exactly the upward and inward motion that will help you build strong pelvic muscles.

### Things to keep in mind to get the most benefit from pelvic muscle exercise:

1. Each contraction should involve a concentrated effort to get maximum tightening.
2. Try to contract only the pelvic muscles. (If you feel your abdomen, thighs, or buttocks tightening, relax, aim just for the pelvic muscles, and use a less intense muscle contraction. If it seems impossible not to tighten the abdomen, thigh, or buttock muscles, concentrate on full relaxation. Then try gentle "flicks" of the pelvic muscles, for example, "flick, flick, flick, relax"—working the muscles to higher layers with each flick.)
3. Work up to holding each contraction for 2 seconds, then for 4, 6, 8, and 10 seconds as your muscles get stronger.

4. Rest for at least 10 seconds (longer if you need to) between each contraction, so that each one is as firm as you can make it.
5. Each contraction should reach the highest level of your pelvis. You will feel the pulling up and in over three distinct layers of muscle.

**Avoid bearing down motions with pelvic muscle exercise:** The most serious mistake women make when doing pelvic muscle exercise is to strain down instead of drawing the muscles up and in. Try doing this on purpose once so you can feel what NOT to do: take a breath, hold it, and push down with your abdomen. You can feel a pushing out around your vagina. *It is very important to avoid this straining down.*

To keep from straining down when you do a pelvic muscle contraction: exhale gently and keep your mouth open each time you tighten your muscles. Rest a hand lightly on your abdomen. If you feel your stomach pushing out against your hand, you are straining down. If you cannot avoid straining down, do not continue with the exercise until you check with your nurse to learn how to do it properly.

**Use planned pelvic muscle contraction to avoid leakage:** Once you have learned the correct pelvic muscle contraction technique, it can help you right away to avoid leakage. When you feel a cough or sneeze coming on (or any situation, such as lifting or going down a step, that you know can cause you to leak), tighten your pelvic muscles as tight as you can. Keep them tight through the cough or sneeze. Planned pelvic muscle contraction has been shown to reduce or eliminate leakage. And as your muscles get stronger over the exercise program you will see even more benefit from this trick.

**Making a change in your personal health care program:** It is a challenge to work any new health habit into your everyday life. Here are some ideas to help with this:

1. Think about your typical day. Pick a time (about 15 minutes) that you should have time to do pelvic muscle exercise, maybe when you first wake or maybe during a TV program you almost always watch.
2. Decide on a way to remind yourself to do pelvic muscle exercise. You might put a note on a mirror you always use in the morning, a sticker on your TV, or a special magnet on your refrigerator.

(Continues)

## FIGURE 5

Pelvic Muscle Exercise Instructions. *Note.* From "Pelvic Muscle Exercise: Effective Patient Teaching," by C. M. Sampselle & J. M. Miller, 1996, *Female Patient*, 21, pp. 29–36. Reprinted with permission (*continues*).



### Pelvic Muscle Exercise Instructions (*Continued*)

3. Reward yourself for exercising each time you do it. You might get some special small candies and treat yourself to one each day that you remember. Or you could draw a small flower on your calendar to mark each day you exercise and get yourself a real flower or bouquet when you have drawn 10 or 30 flowers. Any small reward that you know will keep you working on this new habit is fine.
4. Everyone who is making a change like this has lapses. You may forget for several days at a time. Don't get discouraged and think that you won't be able to continue the exercise program. When you realize that you have forgotten, just resume the program. Don't try to do 3 or 4 days at a time just to make up for lost days. Overexercise can make your muscles sore. Just start the daily program again and remind yourself that every day that you do the exercise helps your muscles get into better shape.
5. Monitor your progress. You might want to keep a daily diary of whether or not you have had a leaking accident. Over the weeks you should begin to see a decrease in the frequency and amount of unwanted

urine loss. Another way to check your progress is to see whether you can slow or stop your urine stream when you are going to the bathroom. We recommend that you try this no more than once a week. As your pelvic muscles get stronger, you will find that you are able to stop the stream more quickly.

6. Finally, don't expect an overnight cure. We know that daily pelvic muscle exercise will strengthen your muscles and eventually stop or greatly improve any leakage. But that takes time, maybe 12 to 16 weeks. Expect to exercise for at least 3 or 4 weeks before you see evidence of improvement. This is a major commitment, but there is a good chance that the program will help you avoid surgery or medication that has unpleasant side effects.

GOOD LUCK ON YOUR PROGRAM OF PELVIC MUSCLE EXERCISE! PLEASE CALL \_\_\_\_\_ AT \_\_\_\_\_ IF YOU HAVE ANY QUESTIONS OR CONCERNS.

**FIGURE 5**

Pelvic Muscle Exercise Instructions (*Continued*).

in otherwise continent individuals. Atrophic vaginitis/urethritis, retention of urine, constipation, irritable bowel syndrome, urinary tract infection, and hematuria should be ruled out or the woman should be referred for treatment before the continence strategies discussed above are implemented. A complete evaluation should be made of the woman's current medications. Diuretics and caffeine can cause urgency, frequency, and incontinence; anticholinergics can impair detrusor contractility, resulting in overflow incontinence; alpha-adrenergic blockers can cause incontinence through lowering of urethral tone (Fantl et al., 1996). Also, a history should be taken to identify conditions that may cause neurologic deficits, such as multiple sclerosis, stroke, or spinal cord injury. Women with a positive history of such conditions require a more sophisticated level of care for UI than that presented in this discussion.

#### *Specialty Incontinence Care*

Some women are not able to execute even a weak pelvic muscle contraction or are unable to implement bladder training. They may benefit from pelvic muscle exercise instruction augmented with mechanical or electronic aids and should be referred to a health care provider with specialized knowledge. These providers, often nurse practitioners, specialize in the care of those with incontinence; they are skilled in the use of supplemental

equipment (such as vaginal weights, biofeedback, and electrical stimulation) and in conducting urodynamic evaluations. Clinicians can obtain information about such health care providers in their local area from the National Association for Continence (800-252-3337) and Access to Continence Care and Treatment (215-923-1492). Nurses and their clients also can obtain further information about UI and its treatment from the following sources:

Bladder Health Council  
c/o American Foundation for Urologic Disease  
300 West Pratt Street, Suite 401  
Baltimore, MD 21201  
(800) 242-2393

National Association for Continence (formerly  
Help for Incontinent People)  
P.O. Box 8310  
Spartansburg, SC 29305  
(800) BLADDER or 252-3337

Simon Foundation for Continence  
Box 835  
Wilmette, IL 60091  
(800) 23-SIMON

In sum, bladder training and pelvic muscle exercise are noninvasive strategies that should be a part of women's self-care. The above instructions for pelvic

muscle exercise can be provided as part of an individual ambulatory visit. They also can be combined effectively with information about bladder training and presented to groups of women (Sampselle, Miller, Herzog, & Diokno, 1996). Although a definitive study of the preventive potential of these strategies has not yet been performed, their demonstrated benefit in reducing existing UI symptoms is persuasive. Nurses can provide important education, advice, and encouragement about the adoption of these self-care strategies for improved bladder health.

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September 29-30	Newark, NJ
November 12-13	Philadelphia, PA
November 17-18	Atlanta, GA



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October 16-17	Newark, NJ
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