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Initiate Management of Urinary Incontinence in any PT Setting

Nicole Sadeghi, MPT

Learning Objectives

• The Participant will be able to list at least three functions of the pelvic floor.
• The Participant will be able to list at least three signs and three symptoms of urinary incontinence.
• The Participants will be able to identify at least two common causes for constipation.
• The participant will be able to list at least two rehabilitation interventions to reduce urinary incontinence.
• The participant will be able to accurately describe the proper bowel movement technique.
• The participant will be able to list at least two goals related to each classification of urinary incontinence.
• The participant will be able to list the classifications of urinary incontinence.
Is Pelvic Floor Physical Therapy under a PT’s scope of Practice?

- American Physical Therapy Association (APTA) Section of Women’s Health
- Performance of tests and measures to aid in the evaluation and treatment of specific medical conditions.
- APTA Guide to Practice
- Pattern 4C Impaired muscle performance
- Pathology: Pelvic Floor Dysfunction
- Impairments: Loss of muscle strength, power, endurance; diastasis recti, stress urinary incontinence

What is the impact for PT’s?

- Social and economic health impact
- Affects FIM scores
- Impedes Physical Activity
- Affects discharge planning
- Institutionalization
- Affects quality of life
- Depression, Isolation, Decreased self esteem
What is the Pelvic Floor?

- External genitalia to internal reproductive organs and bladder
- Composed of 3 muscular layers
- Ligaments
- Endopelvic fascia which attaches the bladder, uterus, vagina, and rectum to pelvic walls

Function of the Pelvic Floor

- Primary:
  - Support - pelvic organs including rectum
  - Sphincter- continence mechanism
- Secondary:
  - Sump-pump (lymph drainage)
  - Sexual function
  - Stability - skeletal

5 S’s
Function - Sump Pump

- The pelvic floor is a venous and lymphatic pump for the pelvis
- Congestion can develop with decreased sump pump action, i.e. lymphedema, patients with cancer, poor circulation, heart failure, scrotal edema, post surgical.

Function - Sexual

- Levator Ani’s tone, strength and performance assists with vaginal receptivity, responsiveness and orgasm.  

- Study: 55 men with erectile dysfunction, 28 were engaged in pelvic floor exercises, biofeedback training and lifestyle modification. At 3 months and 6 months significant mean increase in erectile function, anal pressure, anal MMT strength. 22 attained normal function, 19 improved erectile dysfunction and 14 failed to improve. 

- If increased overactivity of superficial or deep muscles, then pain or inability for penetration to occur (Dyspareunia)
Function - Support

• “Act as a “ floor” for the abdominal viscera including the rectum”
• Supports the uterus, bladder, and rectum
• Support the pelvic bones
• Fixes the trunk with UE Movements
• Muscle Fibers: 30% fast twitch, 70% slow twitch
• Sapsford R., Phyt D. et al, 2008: “More upright sitting postures recruit greater PFM resting activity irrespective of continence status” i.e. - Get patients in chair to get PFM activated especially with catheter placement to reduce muscle weakness.

Anatomy

Hammock of muscles that support organs against gravity and intra-abdominal pressure.

Ray Long, MD
Anatomy - Muscles

Layer 1: Urogenital Triangle
Muscles: Bulbocavernosus, Ischiocavernosus, Superficial Transverse Perineal (STP), External Anal Sphincter

Layer 2: Urogenital Diaphragm
Muscles: External Urethral sphincter, Sphincter urethrovaginalis, compressor urethrae, Deep transverse perineal

Layer 3: Pelvic Diaphragm
Muscles: Levator Ani (Pubococcygeus, Iliococcygeus, Puborectalis) Coccygeaus

Anatomy

- Underactive Muscles can cause laxity and weakness, loss of nerve, muscle ligament or fascia integrity, pelvic organ prolapse, and incontinence
- Overactive Muscles can cause pain, spasms, difficulty voiding or defecating, intercourse, limiting sitting, incontinence, difficulty wearing tight clothing (jeans)
Underactive Muscles - Pelvic Organ Prolapse

- "A departure from normal sensation, structure, or function, experienced by the women in reference to the position of her pelvic organs."
- Usually aggravated by standing and relieved by lying down.
- Symptoms include:
  - Vaginal Bulging
  - Pelvic Pressure
  - Bleeding, discharge, and infection
  - Splinting/digitation
  - Low Backache
Conservative Management of Prolapse

- Exercise with gravity eliminated
- Abdominal (transversus) and PF
- Splinting for bowel movements with rectocele
- Double void
- Avoid Intra-abdominal pressures (straining, poor voiding - urine and bowel)

Implications for Therapists

- Teach kegels in gravity eliminated positions (Hip elevated ball exercises)
- Teaching proper lifting techniques (Do Not Hold Your Breath or Bear Down)
- Exercise with low impact
- Pelvic Bracing (activation of PF, Trab, and Multifid)
- Bracing with knee drop out
- Bracing with adductors (pillow, ball)
- Bracing with hip abduction (clam)
- Avoid straining/Teach proper bowel movement technique
- Constipation management
- Hypopressives
- Weight Loss
Pelvic Organ Prolapse

• Braekken IH, Majida M, Engh ME, Bo K. Can pelvic floor muscle training reverse pelvic organ prolapse and reduce prolapse symptoms? An assessor-blinded, randomized, controlled study.

• 109 women with prolapses stages I, II, and II assigned to PFMT (n=59) or control (n=50). Both groups received lifestyle advices, learned the “Knack”. PFMT included PT and HEP.

• Eleven women (19%) in the PFMT group improved 1 Pelvic Organ Prolapse quantification system stage vs 4(8%) controls. Compared with controls, the PFMT group elevated the bladder and rectum, reduced frequency and both of symptoms compared to control.

Pelvic Organ Prolapse

• Li C, Gong Y, Wang B. The efficacy of pelvic floor muscle training for pelvic organ prolapse: a systematic review and meta-analysis.

• 13 studies with 2,340 patients were included.

• Results indicated women receiving PFMT gained a greater improvement than controls in prolapse symptom score and POP stages. The number of women who said their prolapse was getting better was higher and other discomfort syndromes, such as vaginal, bladder, and rectum, were lower in the PFMT groups than in controls.
5 S's

Sump - pump
Sexual
Support
Stability
Sphincter

Function - Stability

Assists in SIJ, pubic symphysis, sacroccygeal, limbo-pelvic and hip joints

Assists in unloading the spine

UI was noted in 78% of 200 women with LBP

The 2011-2012 Canada Canadian Community Health Survey (CCHS) surveyed 125,645 adults, results showed UI increased the risk of having back problems in both men and women compared to not experiencing UI.
Function - Stability

The core stabilizes the spine through IAP (intra-abdominal pressure)

This occurs when the diaphragm contracts down, causing the pelvic floor and transverse abdomens to lift up, creating a stable environment of the spine.\(^{30}\)

Function - Spincter

- “In the urethra, the action of the vesicle neck and urethral sphincteric mechanisms maintains urethral closure pressure above bladder pressure.”\(^2\)
- Allows for normal passage of waste
- The “hammock” of muscles, along with ligaments and fascia forms the backstop for the urethra.
What’s Normal

- **Bladder Control**
  - **FILL**: Kidneys will filter your blood for urea, thus producing urine which will accumulate in your bladder.
  - **STORE**: Bladder stores your urine: 400-600ml (Grande Starbucks Coffee 473ml)
  - **EMPTY**: When stretch receptors in bladder are activated with increased urine, a strong sensation to void will occur: urge
Urinary Incontinence

Who is Affected with Urinary Incontinence?

- Urinary and Fecal Incontinence affects 50% of nursing home residents.\(^{31}\)
- Affects over 50% of postmenopausal women, 30% of women post partum, and 3-5% of women in high level sports. \(^{24}\)
- 3-11% of men (urge is 40-80%, stress in less than 10%) \(^{35}\)
- 3-17% of women (Rapidly increases at ages 70-80 years) \(^{35}\)
- Financial Impact
- The estimated total national cost of OAB with UUI in 2007 was $65.9 billion, with projected costs of $76.2 billion in 2015 and $82.6 billion in 2020.\(^{14}\)
Who is Affected with Urinary Incontinence?

- 11 women with UI after hysterectomy and radiotherapy for endometrial cancer, 18 women with a history of hysterectomy but not UI
- Max opening of dynamometer branches, maximal vaginal length, PFM maximum force development in strength test, and number or rapid contractions during a speed test were reduced for the affected group.
- No significant difference for endurance tests.
- UI was found to correspond to the rate of force development and the number or rapid contractions in a speed test, endurance, age, and vaginal length.
Transient Causes

- Infection
- Metabolic
- Heart Failure
- Peripheral Edema
- Diuretic Use
- Restricted Mobility
- Medication

Differential Diagnosis of Chronic Pelvic Pain:

- Gynecologic - Endometriosis, Adhesions, Chronic Infection
- Gastrointestinal - IBS, Diverticulitis, Proctodynia
- Vulvar - vulvodynia, vulvar vestibulitis
- Vaginal - scarring, neuroma
- Perineum - PN, PN Entrapment
- Psychiatric - depression, abuse
- Urinary - Interstitial cystitis, Detrusor Dyssynergia
- Musculoskeletal - Hernia, Disk disease, Piriformis syndrome
- Vulvar Dermatoses
Implications for Therapists when Patients Have Pelvic Pain: Interventions and Outcomes

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<thead>
<tr>
<th>TREATMENT</th>
<th>INTERVENTION</th>
<th>OUTCOME</th>
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<tbody>
<tr>
<td>Therapeutic Exercise</td>
<td>• “Do not initiate Kegels”</td>
<td>• Optimal function of trunk and pelvic muscles</td>
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<tr>
<td></td>
<td>• Stretching - pelvic girdle, trunk muscles</td>
<td>• Improved fitness</td>
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<td>• Aerobic Exercise</td>
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<td>• Jacobson Techniques</td>
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<td>• Imagery - breathing with “dropping” pelvic floor</td>
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<td>• Muscle discrimination techniques</td>
<td>• Increased Awareness of muscle tension</td>
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<td>• Diaphragmatic Breathing</td>
<td>• Coordination of Pelvic Floor with breathing and lifting</td>
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<td>Relaxation Exercises</td>
<td>• Observe for “butt clenching”</td>
<td>• Improved alignment of trunk and pelvis to enhance sitting and standing tolerance</td>
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<td>• with positions that create pain</td>
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<td></td>
<td>• Joint mobilization</td>
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<td>• Trigger point and STM</td>
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<td>• Myofascial release</td>
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<td>• Connective Tissue Massage</td>
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<tr>
<td>Postural Education and</td>
<td>• Observe for “butt clenching”</td>
<td>• Optimal musculoskeletal alignment</td>
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<tr>
<td>Functional Training</td>
<td>• with positions that create pain</td>
<td>• Connective Tissue Mobility</td>
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<tr>
<td>Manual Therapy</td>
<td>• Joint mobilization</td>
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<td>• Connective Tissue Massage</td>
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Refer to Pelvic Floor Specialists
Classifications of Urinary Incontinence

- Stress
- Urge
- Overflow
- Functional
- Mixed

Stress Incontinence

- “Involuntary urine leakage with physical exertion (symptom)”
- Cough, Sneeze, Laugh, Lifting, exercise or transitional movements
- Usually a small amount of urine
Stress Incontinence

Ghaderi, F. Oskouei A.\textsuperscript{23} Physiotherapy for Women with Stress Incontinence: A Review Article.

…”greater improvements in SUI occur when women receive a supervised exercise program of at least three months. The effectiveness of physiotherapy treatment is increased if the exercise program is based on some principles, such as intensity, duration, resembling functional task, and the position in which the exercise for pelvic floor muscles is performed.”

Urge Incontinence

“Involuntary leakage associated with or immediately preceded by a sudden compelling need to void (urgency)"\textsuperscript{19}

Difficult to defer voiding

Can be a large or small amount of urine loss

Often referred to as “overactive bladder”
Overactive Bladder

- Burgio, KL. Update on behavioral and physical therapies for incontinence and overactive bladder: the role of pelvic floor muscle training.
- “The collective literature indicates that PFMT is effective for incontinence, as well as urgency, frequency, and nocturia. It can be combined with all other treatment modalities and holds potential for prevention of bladder symptoms.”

Mixed Incontinence

- Signs and symptoms of both stress and urgency urinary incontinence
- Leakage results from a combination of loss of urine during increased intra-abdominal pressure but not accompanied by a contraction of the detrusor muscle and with detrusor overactivity.
Functional Incontinence

• Incontinence associated with impairment of:
  • mentation
  • physical impairment (RA, immobility, recent surgery)
  • psychological unwillingness (dementia)
  • environmental barriers to the toilet
  • Can be small leakage or complete emptying
  • Consult with your OT

Overflow Incontinence

• The bladder does not empty normally and becomes very full (distended).
• Constant loss of a small volume of urine (dribble)
• The bladder may never feel empty
• Causes: (www.umm.edu/health/medical/reports/articles/urinary-incontinence)
  • Tumors
  • Constipation.
  • Certain medications (such as anticholinergics, antidepressants, antipsychotics, sedatives, narcotics, and alpha-adrenergic blockers)
  • Benign prostatic hyperplasia (enlarged prostate)
  • Scar tissue.
  • Nerve damage.
Stress/Urge/Mixed Urinary Incontinence

Kegels

**FITT**
- **Frequency** - 3 sets of 10 once a day to start (Goal 30-80 daily)
- **Intensity** - max intensity without increasing IAP
- **Time** - up to 10 second holds for slow twitch muscle fibers
  Complete 2 seconds holds for fast twitch
- **Type** - sidelying, supine, sitting, standing, progress to functional activities (sit to stand, going up stairs, Crossfit)
- **Include rest times**
- If compensating using adductors, gluts, abs then decrease the intensity and frequency
- Once able to isolate pelvic floor, add transverse abdominis training.
- Incorporate into regular exercise programs.

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*Continued*
Verbal cues to use when Teaching Kegels

• Use visualization cues (NOT JUST SQUEEZE)

• Rectum - drawing in a marble, act like you are stopping your "toots"

• Vagina - Sucking up through a straw

• Move the clitoris or penis

• Close the openings and lift the entire floor

• Draw your "sits bones" together, tailbone to your pubic bone,

Task Specific

• When contracting, what is occurring at the pelvic floor?

• When relaxing what is occurring?

• When bulging, bearing down, or dropping pelvic floor what is it used for?
  • childbirth, bowel movements, voiding, stretching or cueing for relaxation of the PF
Kegels

- Boyle R, Hay-smith EJ et al\textsuperscript{8} - Pelvic Floor muscle Training for prevention and treatment of urinary and faecal incontinence in antenatal and postnatal women.
- Twenty trials of 8485 women (4231 PFMT, 4254 controls)
- Pregnant women without prior UI who received PFMT were less likely than women with no PFMT to report UI up to 6 months after delivery.
- Preventative Care
- Postnatal women with persistent UI 3 months after delivery who received PFMT were less likely than women who did not receive treatment or received usual postnatal care to report UI 12 months after delivery (about 40\% less).

External Assessment - PF\textsuperscript{27,41}

- Purpose: Assist patient with PF muscle awareness, contract, relax and bulge (lengthen), and screen for tender points.
- Technique: Ask the patient to tighten the PFM using verbal cues. Then ask the patient to lengthen, drop or bulge (Belly big, belly firm). Palpate from the line between ischial tuberosity and the tailbone and feel for trigger points.
- Palpate/Observe: Do you feel proper contraction and relaxation with verbal cues? Do you feel tension or symptomatic reproduction of pain?
- Treatment: This can be used to facilitate correct pelvic floor muscle contraction and relaxation. External trigger point releases can be used to
External Assessment - OI

- **Purpose:** Screen and Treat tender points of muscle
- **Technique:** Gently Pushing into the ischiorectal fossa, medial to the ischial tuberosity, the therapist then rotates the wrist so the thumb sinks into the OI
- **Observe or Palpate:** Tension or complaints of symptom reproduction
- **Treatment:** External trigger point releases can

---

**STRESS/URGE/MIXED INCONTINENCE**

**Knack**

- The ability to initiate a pelvic floor contraction before a rise of the IAP, laugh, sneeze, cough
- A women is able to decrease leakage by contracting her pelvic muscles before and during a cough.34
- “Squeeze before you Sneeze”

**Pelvic Brace w/Functional Activities**

- Simultaneous contraction of the TrA, multifidus and PF before progressing strengthening and with all lifting
- Ensure they are not holding their breath
Stress/Urge/Mixed Urinary Incontinence

Hypopressives

Hypopressives or Low Pressure Fitness

Series of Postural and Breathing Exercises
that help reduce intra abdominal pressure using apneas.

Causes Myofascial and visceral traction

Hypopressives objective is not to strengthen the Pelvic Floor, but does improve the resting tone and function with respiratory function.

❖ https://youtu.be/2TYM6KQcE9I

Urinate every 3-4 hours
No “Just in case”
Go for 8 Mississippi
Sit on the Toilet
No Straining

Drink enough water 32-64oz a day (Do not deprive and become dehydrated)
Avoid Constipation
Avoid Bladder Irritants
Go Before and After Sex

Time fluids: Hydrate adequately in morning and early afternoon
Decrease fluid intake 3 hours before bed to decrease nocturnal incontinence (nocturia)

Obesity can contribute to UI
Wear clothes that are easy to get off
Showers are preferred over tub baths
Smoking is an irritant
Avoid Pads
### Stress/Urge/Mixed/Cognitively Impaired/Urinary Retention

**Bladder Irritants (pH, Acidic)**

<table>
<thead>
<tr>
<th>Category</th>
<th>Example</th>
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</thead>
<tbody>
<tr>
<td>Alcoholic Beverages</td>
<td>Apple, Apple Juice</td>
</tr>
<tr>
<td>Ascorbic Acid</td>
<td>Cantaloupes</td>
</tr>
<tr>
<td>Carbonated Beverages</td>
<td>Chili</td>
</tr>
<tr>
<td>Citrus Fruits</td>
<td>Coffee</td>
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<tr>
<td>Cranberries</td>
<td>Grapes</td>
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<tr>
<td>Guava</td>
<td>Lemons, Lemon Juice</td>
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<tr>
<td>Lime</td>
<td>Nectarines</td>
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<tr>
<td>Oranges</td>
<td>Peaches</td>
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<td>Pineapple</td>
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<tr>
<td>Plums</td>
<td>Strawberries</td>
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<tr>
<td>Tea</td>
<td>Tomatoes</td>
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<tr>
<td>Vinegar</td>
<td>Cigarettes</td>
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</tbody>
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### Stress/Urge/Mixed/Cognitively Impaired and Retention

**May Irritate Bladder (High in Arylalkamines)**

<table>
<thead>
<tr>
<th>Category</th>
<th>Example</th>
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<tbody>
<tr>
<td>Avocados</td>
<td>Bananas</td>
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<tr>
<td>Brewer’s Yeast</td>
<td>Canned Figs</td>
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<tr>
<td>Cheese</td>
<td>Chicken Livers</td>
</tr>
<tr>
<td>Corned Beef</td>
<td>Cranberries</td>
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<tr>
<td>Marie</td>
<td>Mayonnaise</td>
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<tr>
<td>Nuts</td>
<td>Onions</td>
</tr>
<tr>
<td>Pineapple</td>
<td>Prunes</td>
</tr>
<tr>
<td>Rye Bread</td>
<td>Saccharin</td>
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<tr>
<td>Soy Sauce</td>
<td>Vitamins B &amp; C</td>
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<td>Yogurt</td>
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<td>Beer</td>
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<td>Champagne</td>
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<td>Chocolate</td>
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<tr>
<td></td>
<td>Fava, Lima Beans</td>
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<td></td>
<td>Nutrasweet</td>
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<td></td>
<td>Pickled Herring</td>
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<tr>
<td></td>
<td>Raisins</td>
</tr>
<tr>
<td></td>
<td>Sour Cream</td>
</tr>
<tr>
<td></td>
<td>Wines</td>
</tr>
</tbody>
</table>
Cherry | Pears
--- | ---
Kale | Plum
Squash | Green Beans
Cauliflower | Broccoli
Asparagus | Mild Cheeses
Milk (Non-infected Bladder) | Okra
Apricots | Lettuce
Prune | Rutabaga
Brussel Sprouts | Spinach
Papayas | White Chocolate
Watermelon | Kava
Non-citrus teas | Sun-brewed teas

**Urge/Mixed/Cognitively Impaired Urinary Incontinence**

**URGE SUPPRESSION**

Use this technique to:
- Reduce or eliminate leakage on the way to the toilet or during strong urge
- To help you hold your bladder longer if you urinate too frequently

- **STOP** and stand still.
- **SIT DOWN** if you can. Don’t move, you need to stay very still to maintain control.
- **RELAX**. Take a deep breath and exhale. Use the power of distraction and think of something other than having to go to the bathroom. Pinch the end of your thumb, pretend to tie your shoelaces.
- **CONTRACT** your pelvic floor muscles (kegel) quickly 10-15 times. This keeps the urethra closed so urine cannot escape, AND starts a reflex that quiets the bladder.
- **When the urge goes away you can walk normally to the bathroom.**
Urge Management

- A retrospective study of female patients with Urge Incontinence\textsuperscript{16}
- 66 patients who were included in study received PFM exercise, urge suppression techniques and fluid advice.
- Of these, 55 (85\%) had sufficient improvement and no further management
- Specifically, urge suppression techniques were reported to have helped 85\% of the women.

**Why does Urge Management Work?\textsuperscript{4}**

- Bradley’s Loop
- (Loop 3) Sacral micturition center S2-4
  - Coordinates detrusor contraction with Spincter relaxation
  - Without it we have uninhibited sphincter relaxation
  - **There is a reciprocal relationship of the bladder to external pelvic floor muscle sphincters.**
Pelvic Floor PT’s will have patients fill out a bladder diary.

If a patient has greater than 8 voids a day, and greater than 1 at night, their therapist evaluates their diet and then may put them on a bladder re-training program.

Bladder RE-TRAINING: Timed voiding throughout the day. Set according to patients’ diary.

Example of Bladder Retraining:

- Pt going to the bathroom every 1 hour, waking up 4 x a night
- Have pt start by extending that one hour to one hour and 15 minutes. If they have the urge to go at the one hour mark, then have them do urge suppression technique until they reach 1 hour 15 minutes. Urinate every 1 hr and 15 minutes throughout day.
- Try to minimize “JICs”
- At night, if woken by urge, do urge suppression and try to return to sleep
- Increase voiding interval by 15 to 20 minutes as pt progresses.
- GOAL: Return to normal of urination every 2-3 hours.
Environmental Barriers

- Location of Toilet - distance, accessibility
  - Remove rugs and clutter, obtain commodes
- Clothing - buttons, zippers, pulling pants up and down
  - Wear easily accessible clothing (skirts, elastic)
- Consult OT if concerns of fine motor task, arthritic conditions.
### Intractable Incontinence Protocol - Severe Cognitive Impairment
- Check of wetness every two hours
- Change garment
- Cleanse skin/Topical barrier
- Inspect skin
- Minimize pressure and turn every 2 hours
- MaxPA x 2

### Scheduled Voiding
- Taken every 2-3 hours to the bathroom
- Goal to keep dry
- Widely used
- Good results

### Prompted Voiding
1. Always greet the resident by name.
2. Ask the resident if she/he is wet or dry. Ask a second time if does not respond.
3. Turn or reposition to check for wet or dry. Tell if she/he is correct
4. If the resident asks for help in toileting.
   - Praise the resident
   - Assist her/him to toilet
5. If the resident does not ask for help in toileting, YOU ask the resident if she/he wants to toilet.
   - Ask the resident again if she/he doesn’t say yes the first time.
   - Ask the resident a third time if her/his response is either yes or no
6. Assist resident to toilet only if she/he says yes to your offer.
   - Praise the resident for appropriate toileting.
   - Record outcome.
7. Empty and clean bedpan, urinal, or commode. Wash your hands.
8. Ask the resident if she/he wants a drink of water and give it if she/he says yes.
9. Tell the resident when she/he can expect you to be back.
Stress/Urge/Mixed/Functional/Cognitively Impaired Cleanliness and Wiping Techniques

- Wipe from front to back prevents germs present in feces from getting near your urethra and causing a urinary tract infection.

- Do not rub hard to avoid abrasions.

- Wipe with toilet paper or wipes until you are completely clean to avoid itching or irritation.
1. **Timed Voiding**
   - You are to use the restroom every two hours to initiate urination. Sit on the toilet every two hours whether you have the urge or not to void. This will help with relaxation of the urethral sphincter muscles.

2. **Relaxation and Breathing Exercises, Posture**
   - The muscles around the urethra have to completely relax for voiding to occur. Pain, anxiety, and stress interfere with relaxation of the pelvic floor muscles and will prevent voiding.
   - Sit on the toilet seat and use a straw to blow gently in and out through your mouth. Your feet should touch the ground and legs should be relaxed. If your feet do not touch the ground, use a “squatty potty” or a small stool under each foot to keep legs apart and relaxed. Relax the muscles around your urethra.
   - Breathing Exercises: Your belly and pelvic floor should also be relaxed each time you breath in and out. (Belly big, belly firm)
     - Quote “Smell the Rose” - Inspiration
     - “Blow out the Candle” - Expiration
   - Listen to calm music or take a book or magazine to the toilet when you are attempting the timed void.

3. **Modified Crede Maneuver**
   - This technique uses self-applied pressure to the bladder in order to help with emptying of the bladder.
   - Quickly apply pressure with both hands to the anterior abdominal wall between the umbilicus and the pubic symphysis while sitting on the toilet seat and leaning forward.
Urinary Retention/Overflow Incontinence
Double Void

Double voiding is emptying your bladder or urinating two times at one sitting. It helps to empty your bladder all the way.

How to:
- Sit on the toilet and empty your bladder.
- Do voiding facilitation exercises.
- Do not strain.
- Take a deep breath in while you lift your arms up toward the ceiling and blow all the air out through your mouth at the same time bending forward, bringing your arms down to the sides of your legs.
- Stand up and sit back down
- Let yourself urinate or void again.

Do these steps every time you go to the bathroom.
It may take your bladder more than just 1 week to learn this exercise.

BOWELS
How do Bowels affect Urinary Incontinence?

“There is a close relationship between the muscles and nerves that control bladder functions and those that control bowel movements. In addition, the bladder and the colon are close together in the body. Large amounts of stool in the colon can put pressure on the bladder which can cause the bladder to not fill as much as it should, or cause the bladder to contract when the bladder is not supposed to contract. This large amount of stool can also cause the bladder to not empty well. All of these problems can lead to daytime wetting, nighttime wetting, urinary tract infections, and in some cases vesicoureteral reflux.”.... department of urology, UCSF.
How are your bowels?

The Gastrocolic Reflex

- The presence of a large volume of fluids or food in the stomach causes distention or stretching of the stomach wall. This distention is sensed by stretch receptors in the muscular wall of the stomach and activates a generalized increase in colonic motility and mass movement of faecal material.
- High intensity contractions of the circular muscles in the transverse colon trigger a propulsive mass movement which propels faeces towards the sigmoid colon and the rectum.
- If a sufficient volume of faeces is deposited into the rectum, the resulting pressure will cause stretching of the muscles in the rectal wall. This distention is detected by mechanoreceptors in the muscle wall and initiates
  a) A reflex contraction of the sigmoid colon
  b) Relaxation of the internal anal sphincter
  c) Contraction of the external anal sphincter.

This process creates the urge to go.
The Gastrocolic Reflex Continued

• Faeces are normally stored in the sigmoid colon and its contraction is the beginning of the defecation process.
• However, the defecation reflex merely creates the urge to defecate and may be ignored to delay opening the bowel.

Defecation does not begin until conscious relaxation of the external anal sphincter and the puborectalis muscle takes place.

Conscious control of the external anal sphincter and control of the puborectalis muscle by adopting the correct posture allows you to delay defecation for a while until you are ready.

Voluntary relaxation of the external anal sphincter allows for a quick and easy bowel movement if the stool is well formed and the correct posture is adopted.

Who is affected with Constipation?17,45

• 2. 5 million physician visits annually
• 3 million laxative prescriptions in the United States
• 20,000 admissions in hospital
Constipation\textsuperscript{13,18,26,36}

- Varied meanings:
  - Medical is < 3 bowel movements per week
  - Patients equate constipation with
    - Stool consistency (hard, dry, small)
    - Feelings of incomplete emptying
    - Strong urge for defecation
    - Painful or difficult to pass.

Rome III Diagnostic Criteria* for Functional Constipation (romecriteria.org)

- **Two or more of the following:**
  - Straining at least 25% of defecation or BM
  - Lumpy or hard stools at least 25% of BM
  - Sensational incomplete evacuation at least 25% of BM
  - Sensation of anorectal obstruction/blockage at least 25%
  - Manual maneuvers to facilitate at least 25% of BM
  - Fewer than 3 defecations per week
  - Loose stools are rarely present without laxative use
  - Insufficient criteria for IBS
- *Diagnostic criteria fulfilled for last 3 months with symptom onset at least 6 months prior to diagnosis*
**Constipation Types**

<table>
<thead>
<tr>
<th>Idiopathic</th>
<th>Functional</th>
</tr>
</thead>
</table>
| ❖ Unresponsive to standard treatment  
❖ Medical workup may have problems with:  
❖ Hormones  
❖ Nerves  
❖ Muscles | ❖ Healthy Colon, but not working properly  
❖ No organic disease  
❖ Attributed to lifestyle: poor diet, decrease exercise  
❖ All age groups, most common in women  
❖ **Three Categories:**  
❖ Colonic inertia  
❖ Delayed Transit  
❖ Pelvic Floor Dysfunction |

**Functional Constipation**

3 categories

1. **Normal Transit (functional)** - Stool transit is normal, but subjective symptoms are not/defecation disorder

2. **Slow Transit (colonic inertia)** - Stool delayed; motility disorder, medications, anorexia nervosa, neuroenteric changes.

3. **Outlet Obstruction (defecatory disorders)** - Pelvic Floor dyssynergia, structural abnormalities, rectocele.
Common Causes of Constipation

- Not enough fiber
- Lack of physical activity
- Medications
- Milk
- Dehydration
- Abuse of laxatives
- Ignoring urge to go
- Travel
- IBS

- Pregnancy, luteal phase of mensus (after ovulation)
- Aging
- Specific diseases or conditions (CVA, MS, DM, hypothyroidism, SCI, Parkinsons)
- Colorectal Problems
- Intestinal dysfunction
- DRUGS (Diuretics, calcium channel blockers, antacids, OAB meds, Antihistamines, pain meds, narcotics)

Symptoms of Constipation

- HA
- Bad Breath
- Decreased Appetite
- Bloating/gas
- Skin Eruptions
- Flatulence
- Depression
Squatty Potty

https://youtu.be/pYcv6odWfTM

Correct Bowel Position\(^2\)

- Sit all the way back on the toilet
- Knees higher than hips (use a squatty potty or stools)
- Lean forward bending from hips and put elbows or forearms on thighs (Do not lean if prolapse)
- Relax the anal opening
- Breathe in and exhale. Expand the belly by gently pushing toward you belly button. Keep belly firm and expanded as you gently direct pressure down and back to the anus. "Belly big, belly firm"
- Repeat 3-4 times. If unsuccessful, contract the pelvic floor to restore normal tone and get off the toilet. Do not strain!
Healthy Bowel Habits

- Attempt to have a bowel movement everyday.
- Sit on the toilet the same time every day.
- 20-30 minutes after meal or drinking a hot beverage.
- After you eat, the fullness of your stomach triggers a gastrocolic reflex to give you the urge to empty your bowels. Breakfast is the most important meal involved in bowel stimulation.
- Do not delay your bowel movement to empty at HOME. Respond to your natural urge to defecate.
- Do not hover over the toilet. Do not rush to finish.
- Eat at least two servings of fruit or vegetables and at least one serving of a complex carbohydrate (whole grain product).
- Drink Water.
- Eat all of your meals at a predictable time each day. Introduce food in similar amounts.
- Exercise daily.

High Fiber Diet

- Add fiber to your diet daily until you reach 25-35 grams per day. You should add fiber to your diet slowly to avoid increased amounts of gas or diarrhea. Stool should have a consistency of toothpaste.
- Rationale: Fiber draws in fluid from your body to make the bowel movements soft but does not dehydrate you.
- Drink 64 ounces of caffeine free fluids everyday in addition to fluids with meals. If you exercise or perspire heavily, you will need to add more caffeine-free fluids to your diet.
- Rationale: Caffeine is a diuretic which pulls fluids from your body and excretes it as urine. For every 1 cup of caffeinated fluids, the Michigan Bowel Control Program recommends that you drink 2 glasses of decaffeinated fluids.
- Caffeine-free fluids stay in your system longer. This allows the fiber in the colon to absorb the fluid and therefore make your bowel movements soft.
- You will become constipated if you consume enough fiber but do not consume enough caffeine-free fluids.
- Recommendation for daily fiber intake:
  - 50 and younger: 38 grams Men, 25 grams Women
  - 51 and older: 30 grams Men, 21 grams Women
**Bowel Massage**

- Lay Supine, with pillow under knees.
- You should feel relaxed and your abdominal muscles should not be tightened.
- Starting at #1 (on the inside of your right pelvic bone), massage in small clockwise circles, up to the right ribs #2, straight across to the left ribs #3, down to the left hip bone #4 and down toward pubic bone or sigmoid colon #5. This should take one minute to perform.
- You can use a tennis ball, bottom of a water bottle, or vibrating massager to assist.
- Repeat kneading, always in clockwise motion for 10 minutes.
- This should not create pain. If it does, stop and talk to your physical therapist before continuing.

**Bowel Massage**

- Turan N, Asti TA. The effect of abdominal massage on constipation and quality of life.
- 30 intervention subjects, 30 control
- Findings indicated that abdominal massage applied to patients diagnosed with postoperative constipation reduced symptoms of constipation, decreased time intervals between defecation, and increased quality of life.
Splinting

- Support to perineal body
- Manual support of the rectal wall through the vagina with use of patients thumb or fingers.

Exercise

- Daily, aerobic exercise
- Postural exercises: for trunk elongation
- Stretching: Abdominals, QL
- Strengthening: Core, TrAb
Goals and Case Study

Goals

• Borelli-France, D. Burgio KL et al.⁷ Adherence to Behavioral Interventions for Stress Incontinence: Rates, Barriers, and Predictors found that “remembering to do exercises” was associated with exercise adherence.
Goal Writing

• Void
  • Void at most 8x per day with void interval 1 x every 2-3 hours
  • Delay void for 15, 30, minutes to decrease urinary frequency
  • Rises to void at most 1 x a night
• Leakage
  • Urine leakage at most 4 x month
  • Absent urine leakage with cough, sneeze, or jumping
• Strength
  • Hip strength
  • Sahrmanns/Core Strength
• Diet
  • Education in bladder irritants, non-irritants, and overall bladder health to decrease leakage and improve urinary incontinence.
  • Education on anatomy, bowel habits, fiber diet to assist with constipation management and reduce prolapse, abdominal pain, and/or urinary incontinence

Goal Writing

• Impairment Goal
  • Able to state 4 of 4 urge suppression/bladder retraining strategies.
  • Independent with PF Contraction and concentric/eccentric control of muscles in functional positions.
• Functional Goals
  • Able to return to running/exercise program without leakage.
  • Able to pick up 20 pounds without symptom increase (prolapse, leakage).
Goal Writing

- Use
  - Pelvic Floor Impact Questionnaire (PFIQ)
  - Pelvic Floor Distress Inventory (PRDI)
  - Bristol Stool Form Scale
  - Constipation Assessment Scale (CAS)

Case Study 1

Jerry is a 65 year old male referred to therapy for weakness secondary to exacerbation of COPD and recent hospitalization. Pt complaints of feeling unsteady and having trouble making it to the bathroom in time. He also reports leaking when he coughs. He has increased thoracic kyphosis and takes a lot of energy to sit upright. He reports no concerns with bowel movements.
Case Study 1

- Type of Incontinence: Stress Incontinence, possible Mixed
- Bristol Stool Chart Type: 3
- Orthopedic Considerations: Generalized Weakness, Standing Balance, Gait Speed, Postural, Stretching
- Cardiorespiratory function

Case Study 1: Therapy to Initiate

Knack
Urge Suppression
Posture/Stretching, Mobilization
Respiratory
BM technique - increased risk for prolapse
Case Study 2

Sophia is a 45 y/o female office worker who is referred to PT for Low Back Pain. She reports symptoms of R hip pain and chronic history of LBP. With subjective questioning she reports symptoms of urgency and frequency with strong urge to void. She voids greater than 11 times a day and 1 x at night. No bladder irritants are noted with questioning. Leakage occurs up to 2-4 times a day.

She is embarrassed to discuss this with you, but does not know who else to talk to. Posture exam reveals standing with abdominal holding and posterior pelvic tilt, tender points over OI, inability to differentiate between PF contraction and relaxation, weakness of hip ER. Pt reports lumpy hard stool.

- Type of Incontinence: Urge Incontinence
- Bristol Stool Chart Type: 1
- Orthopedic Considerations: Further lumbar and hip evaluation, posture, and muscle imbalances
- Pelvic Floor Considerations: Bladder frequency, decreased awareness of PF contraction/relaxation, tenderness over OI, possible PF spams?, Constipation
Case Study 2: Therapy to Initiate

Urge suppression technique
Bladder re-training
Pelvic Floor relaxation exercises - able to differentiate between contraction and relaxation
Constipation management
Manual therapy to PF and OI
REFER TO PELVIC FLOOR SPECIALIST

SUMMARY

• FUNCTIONS of the Pelvic Floor - 5 S
• UI ALGORITHM
• CLASSIFICATIONS of Urinary Incontinence
• REHAB INTERVENTIONS for Urinary Incontinence
• CONSTIPATION
• BOWEL MOVEMENT TECHNIQUE
• GOALS to Incorporate
THANK YOU!