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Leaky Pipes:

AN ANALYSIS OF THE CLINICAL PATHWAY
FOR BETTER OUTCOMES FOR INCREASED
CONTINENCE ACROSS THE LIFESPAN

SPEAKERS:
Rachael Percoco, Preferred Therapy Solutions
Beth Huller, ACP
Rita Cole, Net Health

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Housekeeping Reminders

- All attendees are on mute
- **Handouts** are available on the NARA website: Resources>Quick Links Page
- **Questions for Speakers:** submit them using the Q&A button on the attendee control panel
- **Technical Questions:** submit them using the Chat button on the attendee control panel
- **Recording:** will be available on the NARA website: Resources>Quick Links Page

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| Objectives

- Understand pelvic floor and bladder anatomy and function
- Learn about the different types of Incontinence
- Explore how changes in body position affect anatomical position of the pelvic floor muscles
- Identify assessment techniques and treatment options
- Implement strategies to defend medical necessity/safeguard reimbursement
- Discover the clinical and operational value trajectory for pelvic health services/programming

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| More than urine is lost with incontinence



Prevalence

- Estimated 200 million people worldwide
- Impacts women more than men
- Increases with age: over 50% of individuals over the age of 65


Quality of Life

- Quality of Life significantly reduced
 - Loss of self-confidence/shame
 - Social isolation leading to anxiety and depression
 - Loss of mobility due to decreased physical activity and social engagement

Cost and Resources

- Products
- Laundry
- Staff

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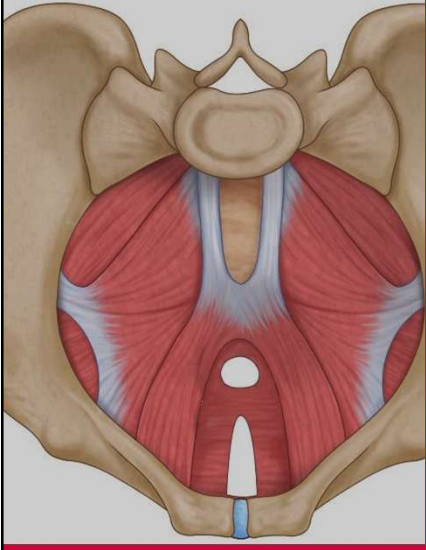


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Survey Question

What is your knowledge of your pelvic floor?



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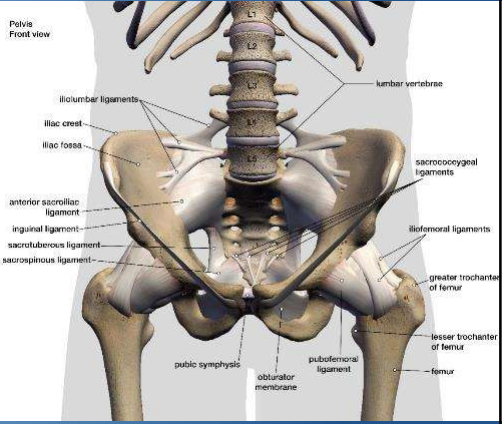
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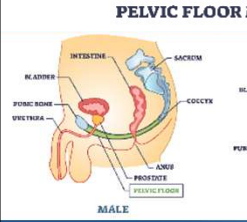
The Pelvic Floor

Skeletal System
Pelvic Organs
Fascia/connective tissue
Nerves
Blood vessels
Pelvic Floor Muscles (PFM)

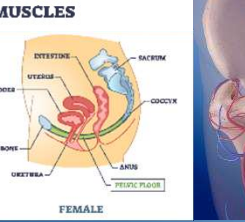




PELVIC FLOOR MUSCLES




MALE



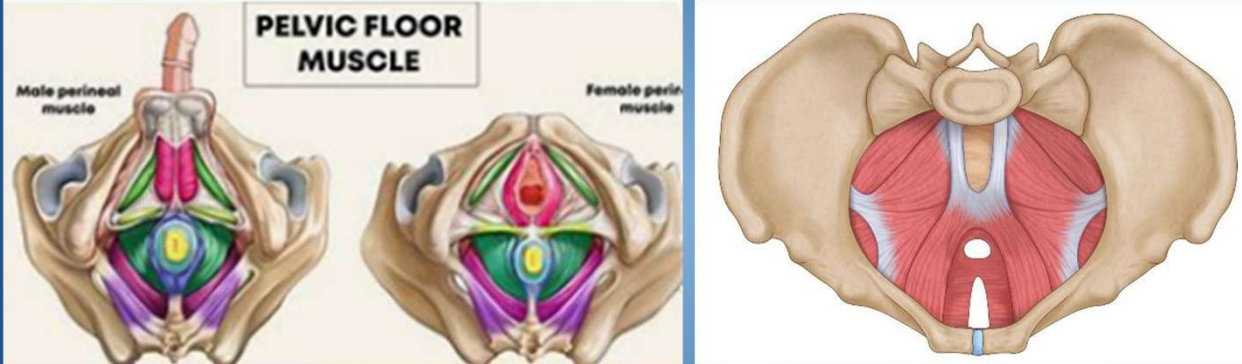
FEMALE

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PFM Anatomy



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Muscle Movement

- Muscles fibers: slow and fast twitch
- Voluntary Contraction
- Voluntary Relaxation
- Involuntary Contraction
- Lengthening



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Let's Practice

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Bladder Anatomy

Urinary Bladder and Urethra

Male


- Ureter
- Rugae
- Detrusor muscle
- Ureteral opening
- Trigone
- Internal urethral orifice
- Prostate gland
- Prostatic urethra
- Urogenital diaphragm
- Membranous urethra
- Spongy urethra
- External urethral orifice

Female

- Ureter
- Rugae
- Detrusor muscle
- Ureteral opening
- Trigone
- Internal urethral orifice
- Urethra
- External urethral orifice

Bladder, Uterus, Rectum, Vagina, Pelvic floor muscles

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Healthy Bladder: 2 Jobs

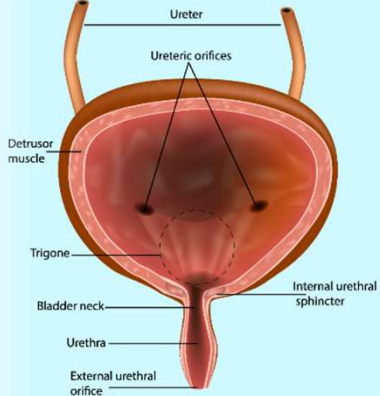
Storing

Bladder is a reservoir that stores urine (13-20 oz)


Sensory stretch receptors in bladder wall

Detrusor muscle is relaxed

PFM are contracted



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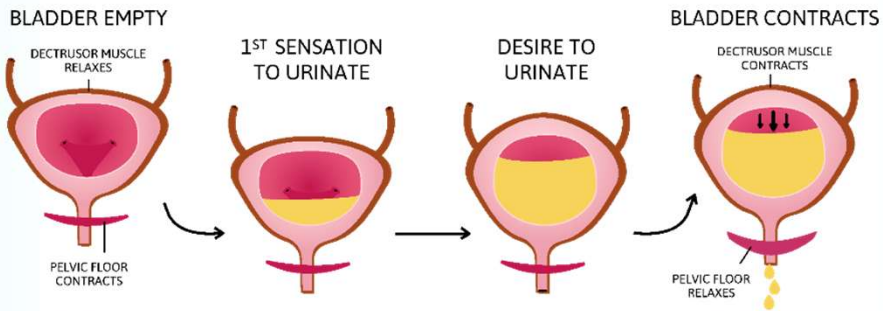
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Healthy Bladder: 2 Jobs


Emptying

No increase in intra-abdominal pressure

Detrusor muscle contracts | PFM are relaxed



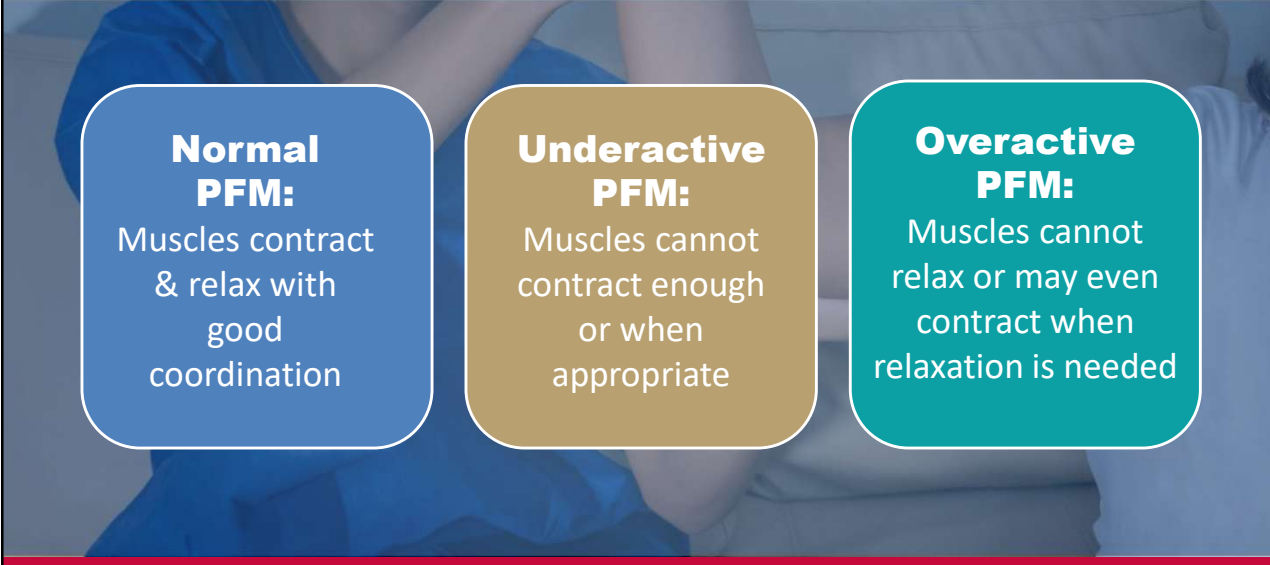
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| PFM Diagnosis/Dysfunction



Normal PFM:
Muscles contract & relax with good coordination

Underactive PFM:
Muscles cannot contract enough or when appropriate

Overactive PFM:
Muscles cannot relax or may even contract when relaxation is needed

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| Underactive PFM



Possible causes:

- Childbirth/injuries
- Surgery
- Aging/Disuse
- Weakness
- Genetics: connective tissue disease
- Nerve Injury

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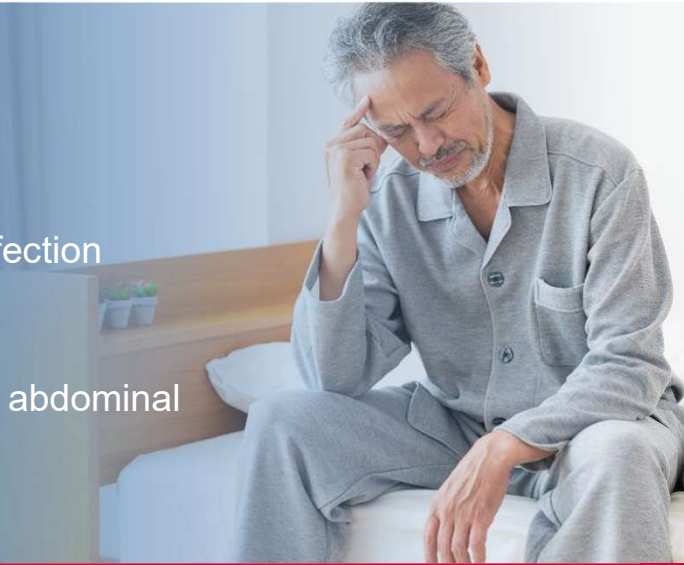
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| Overactive PFM

Possible causes:

- Anxiety/patterning/guarding
- Sexual Abuse
- Acute infection: UTI, skin infection
- Surgery: scar tissue
- Birth Injury
- Pain close by: back, hip, SI, abdominal
- Nerve injury



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Urinary Incontinence

What is it?
The involuntary loss of urine

Most common types?

How is it treated?

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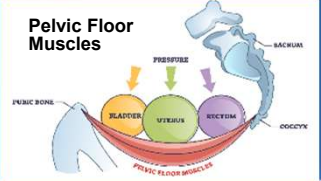
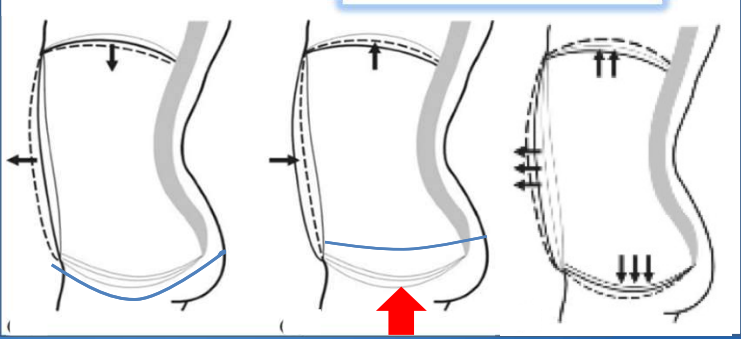

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Stress Incontinence

Increased abdominal pressure:

- Physical exertion
- Sneezing
- Laughing
- Coughing




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Urge Incontinence



“If I don’t get inside quick, my trip could end in disaster!”

An unstable bladder can strike at any time...

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Posture-Based UI Assessment



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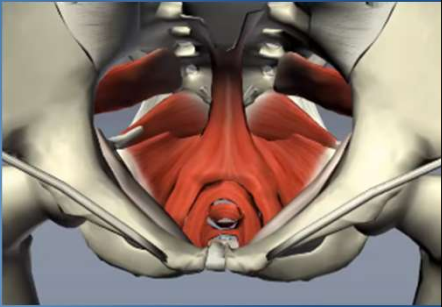


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| The Influence of Posture


- Before we start, take a moment to notice your posture... Are you sacral sitting, slouched, crossing your legs, leaning to the side, sitting on a hard surface, leaning back?
- We typically start the conversation of incontinence going inside, deep to the pelvic floor muscles (PFM).



PFM are important, but we are going to work “outside in” as much of your posture affects your ability to properly strengthen and stretch these muscles that are the recommended first line of treatment for urinary incontinence.

Qaseem, Ann Intern, 2014

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| Clinical Relevance- Body Position

Various researchers have associated inactivity, loss of muscle mass, loss of grip strength, decreased time in standing position, lack of upright posture, increased BMI and decreased lumbar motion associated with increased incontinence

Heung, *BJU*, 2018
Lae, *Curr Aging Sci*, 2012
Coynne, *Urology*, 2011


High BMI is associated with all types of UI, fecal incontinence and sexual dysfunction

Ramalingam, *Best Pract Res Clin Obstet Gynaecol*, 2015

Higher level of activation of PFM in neutral or anterior tilt (lordotic) posture vs. posterior tilted or 'slumped' posture

Capson, *J Electromyography and Kines*, 2011

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| Assessment of Body Position

Due to fascial and neural connections, numerous structures within the body have impact on the performance of the pelvic floor muscles

- Pelvis
- Diaphragm
- Tongue
- Cervical spine
- Thoracic spine
- Lumbar spine
- Hips
- Ankles
- Feet

(in weight bearing positions)

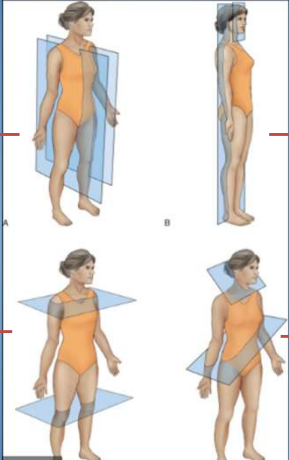
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Postural Assessment: Multiple Planes



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| Postural Assessment by Plane

<p>Sagittal plane</p> <ul style="list-style-type: none"> • Lumbosacral spine/Pelvis • Cervical spine <ul style="list-style-type: none"> • Tongue position • Scapula • Hip • Ankle 	<p>Transverse plane</p> <ul style="list-style-type: none"> • Lumbosacral spine/Pelvis • Hip • Foot
<p>Frontal plane</p> <ul style="list-style-type: none"> • Lumbosacral spine/Pelvis • Hip 	<p>Oblique</p> <ul style="list-style-type: none"> • During activity

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| Sagittal Plane: Lumbar Spine at Rest

Anterior Pelvic Tilt (APT) – Increased Lordosis


- Sacral nutation - long, weak PFM
- Coccyx up and back
- Increased boney support of bladder
- Lengthened TA and Internal Oblique
- Shortened Erector Spinae
- Shortened Latissimus Dorsi
- Decreased hip extension
- Short hip flexors
- Short hip adductors
- Shortened Gastroc/Soleus

Posterior Pelvic Tilt (PPT) – Flat Lumbar Curve

- Sacral counternutation – short, weak PFM
- Coccyx down and forward
- Reduced boney support of bladder
- Shortened abdominals
- Lengthened back extensors
- Promotes weak Gluteal muscles
- Increased scapular protraction and elevation
- Increased cervical extension
- Decreased shoulder extension and external rotation

Claus, Spine, 2009 Sapsford, Man Ther, 2004

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| Sagittal Plane: Lumbar Spine in Motion


Anterior Pelvic Tilt (APT)

- Can patient perform?
 - Often patients with UI cannot extend the lumbar spine
- What happens with various movements?
- Clinical Indications for this movement:
 - Vaginal or bladder prolapse
- Benefits:
 - Overflow to PFM when activating TA and IO,
 - ↑ diaphragmatic excursion
- Risks:
 - Rectus Diastasis

Posterior Pelvic Tilt (PPT)

- Can patient reverse?
 - Most common position for patients with UI
- Of note:
 - If patient cannot reverse, ensure relaxation of PFM prior to performing PFM strengthening
- Clinical Indications for this movement:
 - Exercise for Rectus Diastasis with external lateral support
- Risks:
 - Decreases inspiratory capacity and diaphragmatic excursion, decreases neural activity of the PFM

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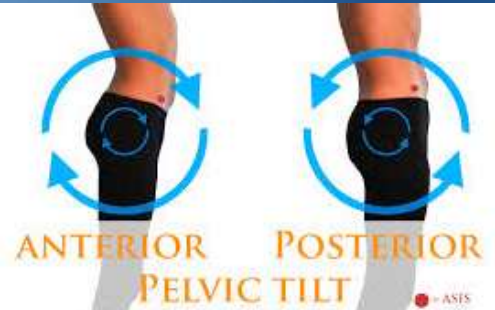


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| Anterior/Posterior Pelvic Tilt


- **Validated measurements:**
 - At rest: Cobb's Angle with x-ray
 - With movement: inclinometer or goniometer
- **Sagittal Plane**
 - Flexion/Forward bend: normal at rest = 39-53 degrees
 - Extension/backward bend: normal = 20-35 degrees
 - Magee, Orthopedic Physical Assessment, 2014
- **Required With Various ADLs**
 - Flexion/Forward bend: 5-59 degrees
 - Extension: 3-49 degrees, decreased extension associated with UI
 - Bible, J spinal Disorder Tech, 2010



ANTERIOR PELVIC TILT **POSTERIOR PELVIC TILT**

ASIS

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| Frontal Plane: Lumbosacral Spine and Pelvis

- Lumbar spine side bending:
 - Assess via goniometer or inclinometer
- Pelvic obliquity
 - Assess via functional leg length
 - Supine: umbilicus to medial malleolus measured in cm with tape measure
 - Standing with ankles hip width apart, line up iliac crest
 - Assess via actual leg length
 - Supine: ASIS to medial malleolus measured in cm with tape measure
 - If high, widen stance and recheck
 - Impact of asymmetry: contributes to decreased balance and changes angle of pull of the PFM

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Transverse Plane: Lumbosacral Spine and Pelvis

- **Umbilicus to ASIS**
 - Assess via length measurement in cm
 - Impact: changes position of abdominal obliques and fascial/pelvic attachment of TA; changes shape of the PF
 - Recommendation: progress exercise by gradually increasing rotation/transverse plane activity at the lumbar spine and pelvis

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Oblique Plane: Applied Postural Assessment

In what positions or activities does your patient need to be successful? To determine intervention strategy: Possible posture and movement patterns should be assessed in all positions and activities where continence is lost

- Sitting
- Standing
- Supine
- While sleeping
- With movement transfers:
 - supine to sitting
 - sitting to standing
- With walking
- With running/jumping
- With lifting
- While laughing
- While coughing
- With intercourse



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| Results of Too Much Sitting

- Posterior pelvic tilt
- Inability to extend lumbar spine
- Short, weak abdominals
- Long, weak gluteals
- Tight hamstrings and hip flexors
- Decreased hip rotation ROM and strength, especially IR
- Thoracic flattening or kyphosis
- Forward head/Jaw position with extension or flexion of the cervical spine
- Tightened/Shortened PFM
- Lack of fast-twitch firing of the PFM
- Thoracic breathing pattern



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| Specialty Care

- Physicians and therapists who specialize in the evaluation and treatment of lower urinary tract and pelvic floor dysfunction are available
 - Specialized skills include: bladder scanning, ultrasound imagery, infrared spectrometry, dynamometry, internal manual assessment, internal soft tissue treatment, use of pelvic floor biofeedback and pelvic floor electrical stimulation
- Referral of patients who would benefit from such specialized care is highly encouraged
- *General understanding of the influence of posture and core muscle strength on the pelvic floor can assist therapists to guide patients with UI who may not have access or inclination to seek specialty care.*



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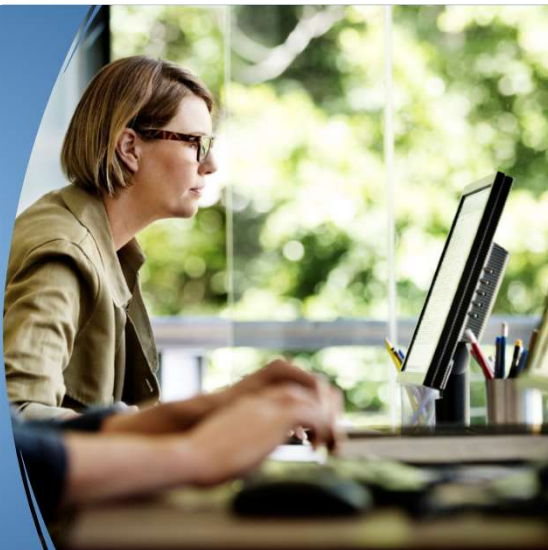


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Successful Outcomes

The Write Words to Achieve the Right Results



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Coverage Requirements: Reasonable and Necessary



CMS Publication 100-02, Medicare Benefit Policy Manual, Chapter 15, Section 220 through 230

- **Skill:**
 - Require the professional skills of therapist to perform or supervise, cannot be safely and effectively administered through other means
- **Reasonable and Necessary:**
 - Considered accepted standards of medical practice to be a specific and effective treatment for the patient's condition, includes amount, frequency and duration of service

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**Acceptable Practice for
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- Evidenced based literature
- Professional associations

Medicare Coverage Guidelines:

- CMS Publication 100-04, Medicare Claims Processing Manual, Chapters 5 and 7
- CMS Publication 100-03, Medicare National Coverage Decisions (NCD) Manual
 - E.g., Non-Implantable Pelvic Floor Electrical Stimulation

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**Acceptable Practice for
Therapy Services**


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Medicare Administrative Contractors (MAC):

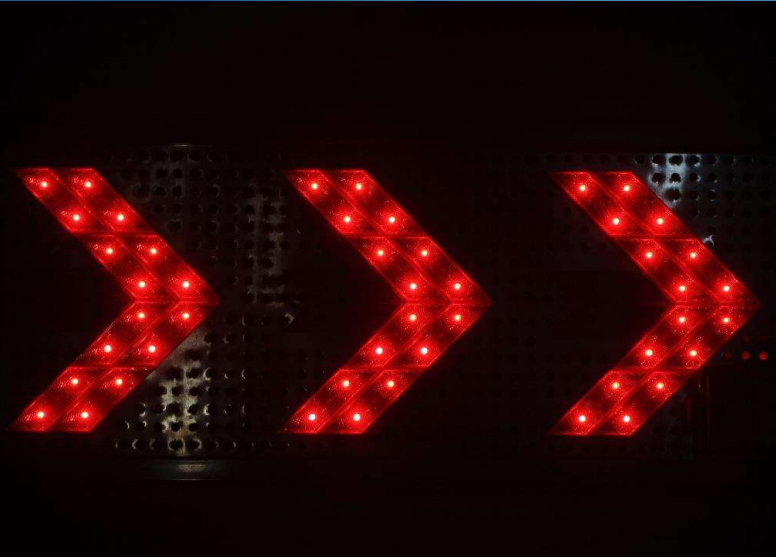
- Local Coverage Guidelines (LCDs)
- Articles
 - Biofeedback
 - Unattended electrical stimulation
 - *Non-coverage statements:
 - Pelvic floor congestion
 - Pelvic floor dysfunction (not including incontinence)

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PART 2:
February 6th, 3PM Est.

- PFM Assessment
- Treatment interventions
- Case scenarios
- Telehealth considerations
- Operational outcomes and considerations

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RESOURCES: ADDITIONAL RESOURCES AVAILABLE ON REQUEST

1. Frawley, Helena, Shelly, Beth, Morin, Melanie, et al., An International Continence Society (ICS) report on the terminology for pelvic floor muscle assessment. *Neurology and Urodynamics*. 2021; 40: 1217 – 1260.
2. Fricke, A., Lark, S., Fink, P., Mundel, T., Shultz, S. Exercise Interventions to Improve Pelvic Floor Muscle Functioning in Older Women With Urinary Incontinence: A Systematic Review. *Journal of Women's Health Physical Therapy*, 45(3), 115-125.
3. Fisher, S., Stanich, S., Hong, I., McGaugh, J., Jang, H., Galloway, R., Utsey, C. Fall Risk Reduction in the Elderly Through the Physical Therapy Management of Incontinence. *Journal of Women's Health Physical Therapy*, 43(1), 4-9.
4. Stefanacci, R., Yeaw, J., Shah, D., Newman, D., Kincaid, A., Mudd, P. Impact of Urinary Incontinence Related to Overactive Bladder on Long-Term Care Residents and Facilities: A Perspective From Directors of Nursing. *Journal of Gerontological Nursing*, 48(7), 38-46.

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RESOURCES: ADDITIONAL RESOURCES AVAILABLE ON REQUEST

5. Bernard, S., Pellichero, A., McLean, L., Moffet, H. Responsiveness of Health-Related Quality of Life Patient-Reported Outcome Measures in Women Receiving Conservative Treatment for Urinary Incontinence: A Systematic Review. *Journal of Women's Health Physical Therapy*, 45(2), 57-67.
6. Pelvic Pizzol, D., Demurtas, J., Celotto, S., Maggi, S., Smith, L., Angiolelli, G., Trott, M., Yang, L., Veronese, N. Urinary incontinence and quality of life: a systematic review and meta-analysis. *Aging Clinic and Experimental Research*, 33(1), 25-35.
7. CMS Publication 100-02, *Medicare Benefit Policy Manual*, Chapter 15. <https://www.cms.gov/regulations-and-guidance/guidance/manuals/internet-only-manuals-ioms-items/cms012673>
8. CMS Publication 100-03, *Medicare National Coverage Decisions (NCD) Manual*, <https://www.cms.gov/regulations-and-guidance/guidance/manuals/internet-only-manuals-ioms-items/cms014961>

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QUESTIONS?

Thank you!

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