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Unspoken Pain: Evaluation and Management of Pelvic Pain from a Physical Therapy Lens

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Disclosures



View from behind. Tilted forward.

- Dr. Stephenson- GWHI.org non profit that funds PT projects improving women's health nationally & internationally
- Dr. Markowski- no disclosures

• Note:

- When referencing "female" and "male" in this presentation, this is referring to natal anatomy
 - Data collected in the literature refers to natal anatomy
 - This is NOT a reference to gender the authors respect and treat individuals of all gender identities

Objectives

1. Introduce the anatomy and physiology of the pelvic floor muscles, genitourinary and gastrointestinal system, and sexual organs in males and females

2. Discuss normative bladder, bowel, and sexual function - a systems approach

4. Review the role of the musculoskeletal system in the following pelvic floor syndromes: urinary and fecal incontinence, constipation, pelvic pain, sexual pain, and sexual dysfunction

5. Provide a clear understanding of the role of the pelvic floor physical therapist in the evaluation and treatment of various pelvic floor conditions

6. Discuss the examination and various pelvic physical therapy treatment options including: bladder and bowel retraining, manual techniques, biofeedback/neuromuscular re-education, therapeutic exercise, and postural re-education

7. Review the current evidence for pelvic physical therapy intervention in pelvic floor related pain syndromes

8. Understand the importance of a multi-modal approach to the treatment of pelvic pain

Physical Therapists ¹

Physical Therapy (PT)

- Experts in the musculoskeletal system, doctoring profession
- Most recognized in orthopedics
- Play a large role in the evaluation and treatment of pelvic floor conditions including: pelvic pain, incontinence, and constipation
- Pelvic floor muscles (PFM) are important in continence, elimination, sexual function, and postural control



Image:https://encryptedtbn0.gstatic.com/images?q=tbn:ANd9GcQaw1R9685z3h65P84UskLizuspzM8HR3 K8Kg&s

The Pelvic Floor ¹

- All visceral, neurovascular, and myofascial structures contained in the bony pelvis
- Two layers of muscles, perineum, genitals, fascial layers, and connective tissue
- <u>Three Main Functions:</u>
 - 1. Supportive
 - Of internal organs
 - Of lumbar spine
 - 2. Sphincteric
 - Closure of urethra, anus, and vagina



Image: https://cdn.shopify.com/s/files/1/0265/5685/8403/files/Picture5_1024x1024.jpg?v=1619649597

3. Sexual appreciation Information is the property of M. Markowski and is not to be reproduced without permission.

Male / Female Pelvic Floor Muscles





Posterior Abdominal Wall

- Respiratory Diaphragm
- Quadratus lumborum
- Psoas (major & minor)
- Transversus abdominis
- Iliacus
- Piriformis
- Pelvic floor diaphragm



Pelvic Floor Physiology- Slow and Fast Twitch

- **Type II** Slow-twitch fibers rely on aerobic respiration for contractions, while fasttwitch fibers rely on anaerobic respiration to fuel muscle contractions. Quick sphincter closure- 70%
- **Type I** fibers are perfect for long-term endurance exercises. Chronic tone maintained throughout the day -30%
- We lose fast twitch fibers with age

MUSCLE FIBER TYPES



Muscle Spindle Mechanism



http://www.bandhayoga.com/images/Science_keys/scikeyo3/hams_spin ae_utt.j



https://classconnection.s3.amazonaws.com/638/flashcards/461638/png/p icture71351743069235 -thumb400.png

PFM Trunk Stabilizer Role¹

- Cylinder Concept" of trunk stability
 - Bottom of cylinder = pelvic floor muscles (PFM)
- Mobility versus Stability Concept
 - Organs and outlets of the pelvic floor need to have mobility
 - Too much mobility = weakness
 - Presents as incontinence or prolapse
 - Too much stability = overactivity
 - Presents as pain or constipation



PELVIC FLOOR MUSCLE CONTRACTION



Correct action The pelvic floor lifts, the deep abdominals draw in and there is no change in breathing Incorrect action Pulling the belly button in towards the backbone and holding your breath can cause bearing-down on pelvic floor

© Continence Foundation of Australia

PFM Function Bladder/Bowel/Sexual Roles



Review: Pelvic Floor Muscles Function¹

Trunk Support

Allows fixation of trunk with strong
movement of upper extremities

Pelvic Organ Support

 Allows increased PFM closure during increases in intra-abdominal pressure (IAP)

• Sphincteric

Closes urethra, anus, and vagina

• Sexual

Provides tone and support to the genitals



The Role of the PFM Regarding Continence ^{1,6}

• PFM assist in urinary and fecal continence by increasing pressure through sphincteric control of the urethra and anorectal angle of the rectum



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Pelvic Organ Support³

Boat in Dry Dock



Image: https://media.springernature.com/lw685/springerstatic/image/art%3A10.1007%2Fs10439-021-02755-6/MediaObjects/10439_2021_2755_Fig1_HTML.png

- Boat = pelvic organs
- Water = PFM
- Rope (moorings) = ligaments and fascia
- If PFM function normally, there is proper support and the ligaments and fascia are under normal tension
- If the PFM cannot actively support the organs, over time the connective tissue will become stretched and damaged

PFM in Sexual Function ⁶

- Muscle strength to maintain blood flow in erectile structures clitoris or penis
- Muscle length to release/open the anus or vagina for penetration without pain
- Muscle coordination to return muscles to resting baseline after orgasm



Photo available at: http://www.bartleby.com/107/120.html

Pelvic Floor Muscle Dysfunction & Pelvic Pain Pathophysiology

Two Main Categories of PFM Dysfunction ¹

Decreased Tone/Underactive PFM

- Incontinence
 - Urinary Incontinence
 - Stress UI
 - Urge UI
 - Mixed UI
 - Functional UI
 - Anal/Fecal Incontinence
 - Passive
 - Urge
- Pelvic organ prolapse (POP)

Increased Tone/Overactive PFM

- Dyssynergic defecation/Constipation
- Pain diagnoses:
 - Vulvodynia
 - Vulvar vestibulitis/ Vestibulodynia
 - Vaginismus
 - Dyspareunia
 - Prostatitis/Chronic Pelvic Pain Syndrome
 - Coccygodynia

Increased Tone/Overactive Pelvic Floor Muscles ¹

PAIN Diagnoses

- 1. Vulvodynia
- 2. Vulvar vestibulitis/ Vestibulodynia
- 3. Vaginismus
- 4. Dyspareunia
- 5. Prostatitis/Chronic Pelvic Pain Syndrome
- 6. Coccygodynia
- 7. Dyssynergic Defecation*
- 8. Constipation*
- 9. Overactive Bladder*





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Chronic Pain 53, 54

- Central nervous system <u>changes</u> with chronic pain:
 - Central changes in the reception, processing and output
 - Dorsal horn changes at the spinal levels
 - Peripheral changes
 - Abnormal impulse generating sites (AIGS) in the peripheral nerves
 - Immune response changes
 - Modulating factors resulting in increased nocioceptive activity include:
 - Increased inflammatory response
 - Increased tissue temperature
 - Decreased blood flow



photo: https://europepmc.org/articles/PMC9381002/bin/j_mr-2022-0013_fig_001.jpg

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Chronic Pain 56,57

- Cortical changes occur in the primary sensory and motor cortices as pain persists = Smudging
 - Motor control and sensation of that body part is distorted
 - These changes become part of the problem
 - **"Sensitized Nervous**

•



Photo available at: http://www.specialistpainphysio.com/complex-regional-painsyndrome-it-feels-weird/

System" Lorimer Mosley's Ted Talk: "Centralized" pain https://www.youtube.com/watch?v=gwd-wLdIHjs

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Homunculus



Chronic Pain 58

- All pain is real to those who feel it
- Pain is a subjective and personal experience
- Contributing factors of pain:
 - Physical dysfunction
 - Beliefs
 - Distress
 - Illness behavior
 - Social interactions



Consider term "*Persistent*" Pain instead of "*Chronic*" Pain^{10,11}

- Chronic can imply permanence, no chance for improvement
- As providers, we want to provide **HOPE**

Persistent/Chronic Pain vs Persistent/Chronic Pelvic Pain¹²

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Similarities

- Involves CNS
- Creates a stress response
- Can lead to changes within the brain
- Heal similarly

Differences

Central location of pelvic pain

- Where bodies hold stress (GI system)
- Hidden part of the body
- "Private area"
- Shame / Don't discuss
- Pelvis can never fully rest
 - Impacts basic ADL's toileting, intimacy
- Many providers tend to ignore/dismiss

Review of Common Pelvic Pain Conditions

Chronic Pelvic Pain Syndrome/Prostatitis

- Non-malignant pain perceived in structures related to the pelvis, lasting continuously or recurrent for at least 6 months ¹⁸
- Difficult to manage as it is often impossible to identify pathophysiology ⁵²



Photo: <u>https://getmegiddy.com/sites/default/files/2022-12/male-chronic-pelvic-pain-syndrome-social.jpg</u>

Chronic Pelvic Pain Syndrome (CPPS)/Prostatitis ⁵⁹

Category I	Bacteria
Acute bacterial prostatitis	60 000
Category II	
Chronic bacterial prostatitis	Bladder
Category III	
Chronic prostatitis/chronic pelvic pain syndrome (CPPS; further classified as inflammatory [IIIA] or noninflammatory [IIIB])	
Category IV	
Asymptomatic inflammatory prostatitis	Sphincter apparatus
	Inflammation and enlargement of the prostate

photo:<u>https://img.medscapestatic.co</u> m/pi/features/slideshowslide/prostatitis/fig1.jpg

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Category 3: Non-Bacterial Prostatitis ^{59,60}

- PT related issue
- Symptoms:
 - Pelvic pain
 - Urinary urgency/frequency
 - Pain or burning with urination
 - Post-ejaculation pain
- Pain patterns can vary:
 - Suprapubic
 - Perineal
 - Scrotum
 - Urethra
 - Penis
 - Low back



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Vulvodynia and Dyspareunia

2

- Interstitial Cystitis(IC) / Painful Bladder Syndrome (PBS)
- Pudendal Neuralgia (PN)
- Vulvodynia, Dyspareunia, IC/PBS, PN combined
 - Burning shooting stabbing pain in the PN distribution
 - Primarily unilateral
 - Provoked by sitting, trunk or hip flexion, resisted external rotation walking uphill, intercourse, clitoral stimulation, toileting, orgasm
 - **3- Pudendal Neuralgia**

1- Vulvodynia and Dyspareunia

- Vulvar burning, stabbing and shooting pain
- Urinary urgency, frequency, hesitancy, dysuria
- Clitoral pain, burning, swelling, hypersensitivity, abdominal and pelvic girdle pain, back pain, orgasm changes, foot and lower extremity pain

4-Overlap

Adapted from S. Prendergast¹⁷

- Pain with bladder
 FILLING
- Isolated bladder pain

2- IC/PBS

*Note: PN and IC/PBS can be seen in anyone

Example: Pathophysiology of LPV ⁴⁰⁻⁴³

Upregulation of 3 systems

- Neuromuscular system
 - Overactivity of PFM antecedent or secondary to vestibulodynia
- Immunologic system
 - Introital mast cells, inflammatory molecules, nerve growth factors
 - May be upregulated by: infections, mechanical trauma, chemical or physical abuse
- Pain system
 - Upregulated by proliferation of local nerve fibers and endings which contribute to the following
 - Hyperalgesia (an increase in the magnitude of pain)
 - Allodynia (pain from a non-painful stimulus, like light touch)



Photo: https://id.elsevier.com/as/authorization.oauth2?platSite

Increased PFM Tone Causes ¹

- Joint malalignment of SI, lumbar spine, coccyx, pubic symphysis
- Habitual postural dysfunctions
- Childbirth trauma/episiotomy/tears
- Surgical trauma, adhesions
- Pelvic inflammation/infection/disease
- Hemorrhoids/fissures/fistulas
- Bowel and bladder disorders
- Sexual abuse



Photo:<u>https://centralcoastphysiolates.com.au/wp-</u> content/uploads/2023/05/Screen-Shot-2023-05-20-at-2.21.53-pm-1024x318.png


Trauma Informed Care Approach 85

- Be aware of the <u>possibility</u> of past sexual abuse, even if the patient reports a <u>negative</u> history
- Pelvic examination may cause extreme anxiety; re-trigger trauma
- Give patients VOICE and CHOICE
- **CONSENT** at every stage
- Good communication and patient education will often help to allay anxiety
- Maintain eye contact and engage them in conversation during examination
 - Look for signs of disassociation

• Imperative that the therapist learn to read the patient's body language and responses!!! Information is the property of M. Markowski and is not to be reproduced without permission.

PT Evaluation

Physical Therapy Examination and Evaluation

- Review of record and medical screening
- Patients subjective story
- Review of four systems
 - Musculoskeletal
 - Bladder
 - Bowel
 - Reproductive/Sexual
- Exam
 - Neuro and sensory exam
 - Musculoskeletal exam
 - Posture examination
 - External pelvic floor examination
 - Internal pelvic floor examination
 - Muscle strength



https://www.alpinephysicaltherapy.com/wp-content/uploads/2020/10/Annual-PT-Exam_Featured-Image-1-1080x675.jpg

External Pelvic Floor Examination- Male & Female





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Internal Pelvic Floor Examination- Male and



https://encryptedtbn0.gstatic.com/images?q=tbn:ANd9GcTmFojcigkSVGbxaAZvMb0T 0GFJ9_nQIIVjcg&s



https://femalephysioco.com/wp-content/uploads/Internal-Pelvic-Floor-Assessment-Explained.jpg

Pain Mapping/Internal Exam



Jantos, M., 2020. Pain mapping: A mechanisms-oriented protocol for the assessment of chronic pelvic pain and urogenital pain syndromes. *Pelviperineology*, *39*(1), p.3.

Physical Therapy Treatment of PFM Dysfunction



Underlying Goals of Physical Therapy

- Identify any behavioral, physical or biomechanical dysfunction contributing to the condition
- Correct the underlying habits
- Re-establish coordination



Photo available at: Photo available at: http://www.4us2be.com/health-fitness/detox-your-body/

Patient EDUCATION

- Understanding PFM function
 - Bladder/Bowel
 - Sexual Function
 - Supportive function



- Understanding the specific presenting pathology
- Understanding what voluntary controls can be modified

 \circ Role of PT

- Proper body mechanics and habits
 - $\circ\,$ Toileting techniques and behaviors
 - Pelvic pain
- Pain Education!

Patient Education ¹

- •Normal values for urination/defecation
- Proper positioning during voiding
- Mechanics of urination/defecation
- •Risk factors for incontinence
- •Behavioral Retraining
 - Use of Bladder and Bowel DiaryPostural education
- •Risk factors for pain
 - $\circ \mbox{Avoidance}$ of pain provoking activities



Physical Therapy Treatment ¹ Manual Therapy

- Myofascial Release, Soft Tissue Mobilization
 Surgical scars & adhesions
- Trigger Point Release, Massage, Positional Release, Contract/Relax, Reflex Inhibition

○ Tension myalgias, overactivity, referred pain

- Direct Joint Mobilization & Muscle Energy Techniques

 Pelvic obliquity, sacral torsions, coccygodynia, etc.
- Visceral Mobilization
- Nerve Flossing
 - Nerve flossing involves performing a controlled glide that moves a nerve back and forth relieving tension

Physical Therapy Treatment¹

Stretching

- Hip adductors, hamstrings, obturator, piriformis, abdominals, iliopsoas
 - Connections to PFM
 facilitate stretch indirectly to
 the PFM for overactivity



Photo:https://thefemaleathletedpt.com/why-you-should-be-training-your-glutes-for-your-pelvic-floor/

Physical Therapy Treatment¹

Modalities

- Thermal & non-thermal ultrasound
 - Wound Healing
 - Scar prevention/management
 - Edema prevention/management
 - Warming tissues as needed prior to other treatments
- Electrical Stimulation
 - **Urinary Urgency for Reflex inhibition
 - FES
 - TENS for pain
- Superficial heat/ice

Physical Therapy Treatment 1, 143, 146

Modalities: Biofeedback

- Biofeedback:
 - A conditioning treatment where typically unknown information about a physiological process is converted into simple visual or auditory cues ⁹¹
- Based on operant conditioning techniques



Physical Therapy Treatment 1, 143, 146

- Biofeedback/Neuromuscular Re-educatic ~
 - Diagnostic as well as treatment tool
 - Up-training/strength training
 - Down-training/coordination or relaxation
 - Provide insight and motivation
- Goal: Attempting to get the voluntary control of responses at a conscious level, so they can be altered to be more effective



Biofeedback/Neuromuscular Re-education ^{6,7,90, 144} 146, 151

- Purpose: Retraining the PFM to correct dyssynergia, improve coordination and strength/support
- •Types:
 - Manual cues
 - Mirror
 - Surface electromyography (sEMG)
 - ○Pressure EMG
 - ○Balloon catheter
 - Rehabilitative Ultrasonic Imaging



*No single technique appears more effective than others, based on therapist's training and experience

PT and Pain Science Education ¹⁰

- Pain is a **protector** in the setting of *real* or *perceived* threat
- Pain does <u>NOT</u> equal the health of our tissues



Photo:https://encryptedtbn0.gstatic.com/images?q=tbn:ANd9GcR1jLWdhKfG6htcixk64uIuREZ2iSfQywt0 xQ&s

- Moving away from "Fixer" (PT) and "Fixee" (patient)
 - PT are guides to empower patients
 - Active treatment plans versus passive treatments of tissues
- Collaborative relationship
 - Giving patient's voice and choice in their care
- Consider language:
 - "Persistent pain" vs "chronic"
 - Tissues are "healed" but tight (versus trigger points)

4 Themes for Pain Science Education ¹⁰



PT and Pain Science Education ¹⁰

Education and Action!

- Essential to combine Pain Science Education with practical strategy advice
 - Empowering
 - Respectful



Image: https://encrypted-tbn0.gstatic.com/images?q=tbn:ANd9GcQgL-my8Deu5xaW08DIA9w246v_UWaz-Y5Nrw&s

Physical Therapy Treatment: Central Nervous System Regulation ¹²

- Breath Work
 - Triangle breath: inhale, exhale, hold
 - Heart centered breath: equal time inhale and exhale
 - Diaphragmatic breathing
 - Can be more challenging to correctly perform if PFM tension leading to diaphragm tightness
- Vagus Nerve quieting strategies
 - Humming
 - Chanting
- Visualization of the goal- sports psychology
- Mindfulness
- Behavioral health referral to address trauma and other specific emotional coping strategies Information is the property of M: Markowski and is not to be reproduced without permission.





Adapted from: Why Pelvic Pain Hurts: 2014 Louw, Hilton, Vandyken

- The first row in this picture is an MRI of someone who has had chronic pain for 3 years.
- The second row is the same person, and they have just completed a movement that gives them pain.
- The third row is the same person, doing the same activity, after learning about pain science for 30 minutes.

Multidisciplinary & Multimodal Approach is KEY!



Pelvic Pain Case Studies

Case Study 1: History



- 44 y/o G2P2 female who presents with % secondary dyspareunia (tampon use and intercourse) over the last five years along with copious vaginal discharge d/t diagnosis of desquamative inflammatory vaginitis (DIV)
- She denies any bladder or bowel symptoms or low back pain, regular menses, history of two cesarean sections of 7# babies; no other pertinent medical history
- Previous treatment includes trials of various medications including:
 - Bactrim, clotrimazole, and 50 mg hydrocortisone suppositories, under the care of her specialized vulvar pain gynecologist and dermatologist
 - None of these medications improved her symptoms

Case Study 1: Functional Presentation

- Pain intensity is 8/10 with initial penetration with lingering 4/10 pain at introitus for hours after penetration
 - Abstaining from penetration due to the pain Ο
- Previously able to have pleasurable, pain free penetration with same partner (her husband of 15 years)
 - Partner aware of symptoms and supportive
- Wears daily tampons to manage discharge to avoid clothing changes despite pain to insert She has since been prescribed a topical compound of 100mg hydrocortisone/gram, 0.01%
- estradiol, 2% clotrimazole for which she is to use 1g QD Admits that due to her busy schedule she uses the medication about 1-2 times per week
- Clinical oncologist and researcher; Mother of two teenagers
 - Pilates 5x/week and avid tennis player
- Patient Goals: To resume pain free sexual activity and no longer need to use tampons for daily discharge

Case Study 1: Examination

- Pelvic and Vaginal Exam:
 - Erythema and allodynia from 3-9 o'clock of vestibule
 - Copious non-malodorous white discharge at introitus
 - Ability to voluntarily contract and relax PFM; inability to lengthen PFM for defecation/penetration
 - PFM exam: 3+/5 MMT; 5 second holds, 6 reps; 6 fast twitch contractions
 - Palpable trigger points present: B pubococcygeus (6/10) and iliococcygeus (5/10) with reproduction of dyspareunia
 - Mobile Pfannenstiel scar without restriction or pain
- Lumbopelvic Exam: all unremarkable including: Full ROM, Negative pelvic girdle testing; B LE's: 5/5 MMT; negative hip screen; ambulates independently with normalized gait pattern



Case Study 1: Treatment

- Detailed education regarding DIV changes and dyspareunia/LPV diagnosis with resultant sensitivity of nervous system and musculoskeletal impairments
- Emphasized importance of medication compliance as prescribed if goal is to stop use of tampons; tampons role in contributing to her ongoing pain
- Barriers to compliance





Case Study 1: Treatment

- Non-instrumented neuromuscular reeducation/biofeedback (mirror and digital feedback)
 - Restore coordinated PFM activity for lengthening needed for pain reduction and pain free penetration
- Manual techniques for PFM trigger points and tight tissues
 - Reduce pain, improve muscle length/flexibility
- Pelvic/hip stretches
 - Reduce tension globally
- Home exercise program



Case Study 1: Treatment

- Once muscle spasms reduced and PFM coordination for lengthening improved, progressive dilator training
 - For desensitization of vestibule; stretch of PFM; and neuromuscular coordination to use PFM lengthening during insertion all to attain goal of pain free penetration
 - Added to HEP

Visits: 1x/ week 30 minute appointments of one on one care with primary PT for 8 weeks, then 3 visits spaced every 2-3 weeks for a total of 11 visits over 16 weeks



Case Study 1: Outcome

lution of pain with any penetration to have pain free sexual activity and penetration of tampo istently x 6 weeks by last PT session mal need for tampons for DIV discharge with consistent pliance with compounded medication

Discharge PT to independent HEP to maintain progress

Case 2: History Male 28 Perineal Pain

- 28 year old male with primary diagnosis- pelvic floor pain 10 years duration with numbness tightness in the perineum and hamstrings sudden pain post episode of masturbation.
- Erectile dysfunction for past several years, able or orgasm, libido intact, no prior PT
- No dysuria, urinary frequency, urgency, hesitancy, hematuria or incontinence per urology
- MHX Type 1 Diabetes mellitus age 12- A1c 6.4-switching to a pump
- Varicocelectomy in college no complications
- Second year law student and works in a financial institution. To be married in June 2024
- Meds Insulin aspart U-100 (Novolog) 100 unit/mL (3mL) Insulin glargine (Lantus) 100 unit/mL injection tadalafil(Cialis)5 mg Tretinoin (Retin-A) 0.05% cream

Case 2: Functional Presentation

Subjectively

- Pain on 0-10 scale: average 8, worst 10, best 6
- Subjectively felt lack of penile sensitivity and tightness in his perineum
- Exacerbating factors: Stress Alleviating Factors: Rest, relaxation, perineal pressure points, stretching
- Safety- No allergies, no anxieties or depression, no falls
- PT Goals
 Eliminate pelvic pain
 Decrease hamstring tightness
 Improve normal sensation



https://images.squarespace-

cdn.com/content/v1/6355e89c820a1b1d7fd4f5c7/a0a7f352-8f18-493c-9610-8e4e686393fd/shutterstock_1108307861-700x468.jpeg

Case 2: Examination

Objective- internal rectal pelvic floor examination

- Sensation: intact externally, normal anal wink
- Muscle exam Gross pelvic floor contraction 2/5 Endurance 5 seconds with fasciculations noted with sphincteric contraction, discoordination with contraction and relaxation- for relaxation phase he contracts
- Palpationpain with external palpation increased pain to internal palpation
- Lumbar exam- negative hip, lumbar, pelvic girdle testing, gait normal
- Pudendal nerve irritation



https://images.ctfassets.net/btlq0oep24gl/28C42INJhjE8IeGvU49Bt6/e 6d666fdd2003bfb1f0c3ad6f0ef7e23/pelvic-floor-of-human-maleroyalty-free-illustration-1588886579.jpeg

Case 2: PT Treatment 77

Patient was seen for 13 sessions from June 2023-July 2024

1. Treatments included:

Behavioral training of bowel and bladder Internal pelvic floor myofascial trigger point release techniques Therapeutic core strengthening exercises Lower extremity stretching series

Nerve flossing

Positional releases

2. Home program:

Graduated exercise program Pelvic floor exercises

Stress reduction



https://www.pamelamorrisonpt.com/wpcontent/uploads/2015/06/Unknown-300x236.jpeg

Case 2: Outcomes and End Results

- Strength 5/5
- Endurance 10 second holds 10 repetitions
- Palpation: no pain on external or internal pelvic floor
- No pain with pelvic floor contractions
- Sensation/Neuro intact- no pelvic floor or perineal tightness, normal penile sensitivity



https://images.ctfassets.net/222znibi5gto/ppm_wysiwyg_fid11501_asset /bb11024ef0fa852cd56156a639e29b5b/IMG_3596_2.jpg
Referring to Pelvic Physical Therapy

- Referral after formal medical workup to rule out musculoskeletal causes of symptoms
- Prescription/referral for PT
- Patient calls to schedule appointment
- It IS covered by insurance because it is PT!

- To Find A Pelvic Floor Physical Therapist in Your Area:
 - o <u>https://pelvicglobal.com</u>
 - o <u>https://pelvicrehab.com/</u>
 - https://www.adontationehypicpererarkanko@kighd protectererarkanko@kighd protectererarkankoakowkighd protectererarkankoakowkighd protectererarkankoakowkighd protectererarkankoakokowkighd protectererarkankoakowkighd protectererarkankoakoakoakoako





Questions?

THANK YOU

1. Shelly B, Neville CE, Strauhal MJ, Jenkyns PJ. *Pelvic Physical Therapy Level 1 Manual.* 1st ed. Alexandria: The Section on Women's Health of the American Physical Therapy Association; 2010.

2. Markowski Cucchiara M, Siracusa Majzun C, Miacle E, Mize L, et al. *Pelvic Physical Therapy Level 2 Manual.* 3rd ed. Alexandria: The Section on Women's Health of the American Physical Therapy Association; 2012.

3. DeLancey JO. Anatomy and biomechanics of genital prolapse. *Clin Obstet Gynecol*. 1993;36:897-909.

4. Kim-Fine S, Barber MD, Tizzano AP, Walters M. A historical perspective on our understanding of the uterovaginal connective tissue supports. *Female Pelvic Med Reconstr Surg*. 2010;16:147-157.

5. Nee R BD. Management of peripheral neuropathic pain: Integrating neurobiology, neurodynamics, and clinical evidence. *Physical Therapy in Sport*. 2006; 7: 36-49.

6. Meyer R, Raja S, Ringkamp M, Campbell J. Peripheral mechanisms of cutaneous nociception. In: Wall P, Melzack R, eds. *Textbook of Pain.* 4th ed. London: Churchill Livingston; 1999:11.

7. Flor H, Braun C, Elbert T, Birbaumer N. Extensive reorganization of primary somatosensory cortex in chronic back pain patients. *Neurosci Lett*. 1997; 224(1): 5-8.

8. Flor H, Nikolajsen L, Staehelin Jensen T. Phantom limb pain: a case of maladaptive CNS plasticity? *Nat Rev Neurosci*. 2006; 7(11): 873-881. 10.1038/nrn1991.

9. Waddell G. The Back Pain Revolution. Edinburgh: Churchill Livingstone; 2004.

10. Mardon AK, Chalmers KJ, Heathcote LC, Curtis LA, Freedman L, Malani R, Parker R, Neumann PB, Moseley GL, Leake HB. "I wish I knew then what I know now" - pain science education concepts important for female persistent pelvic pain: a reflexive thematic analysis. *Pain.* 2024 Sep 1;165(9):1990-2001. doi: 10.1097/j.pain.000000000003205. Epub 2024 Mar 6. PMID: 38452219.

11. Mardon AK, Leake HB, Szeto K, Moseley GL, Chalmers KJ. Recommendations for patient education in the management of persistent pelvic pain: A systematic review of clinical practice guidelines. *Pain.* 2024 Jun 1;165(6):1207-16.

12. Milspaw A. (2024, July 13). Psychological considersation for vulvodynia. PelviCon Symposium Special Topic Vulvodynia. Virtual Conference Platform. <u>www.pelvicon.com</u>

13. Goldstein, I., et al; 2021. International Society for the Study of Women's Sexual Health (ISSWSH) review of epidemiology and pathophysiology, and a consensus nomenclature and process of care for the management of (PGAD/GPD). *The journal of Sexual Medicine*, *18*(4), pp.665-697.

13. Bo K, Berghmans B, Morkved S, Van Kampen M. *Evidenced Based Physical Therapy for the Pelvic Floor*. Butterworth Heinemann Elsevier. New York. 2007.

15. Melzack R, Coderre TJ, Katz J, Vaccarino AL. Central neuroplasticity and pathological pain. *Ann NY Acad Sci.* 2001; 933: 157-174.

16. National Institutes of Health. National Institutes of Health Website. <u>http://health.nih.gov/category/MensHealth</u>. Accessed January 30, 2013.

17. Prendergast (2024, July 13). Vulvodynia: Differential diagnosis of nerve involvement.. PelviCon Symposium Special Topic Vulvodynia. Virtual Conference Platform. <u>www.pelvicon.com</u>

18. Danby CS, Margesson LJ. Approach to the diagnosis and treatment of vulvar pain. *Dermatol Ther*. 2010; 23:485-504.

19. Andrews JC. Vulvodynia: an evidence-based approach to medical management. JCOM. 2010; 17: 225-238.

20. Granot M, Friedman M, Yarnitsky D, et al. Primary and secondary vulvar vestibulitis syndrome: systemic pain perception and psychophysical characteristics. *Am J Obstet Gynecol*. 2004; 191:138-142.

21. Zolnoun D, Hartmann K, Lamvu G, et al. A conceptual model for the pathophysiology of vulvar vestibulitis syndrome. *Obstet Gynecol Survey*. 2006; 61:395-401.

22. Strauhal MJ, Frahm J, Morrison P, et al. Vulvar Pain: a comprehensive review. *J Womens Health Phys Ther*. 2007; 31: 7-26.

23. Moyal-Barracco M, Lynch PJ. 2003 ISSVD terminology and classification of vulvodynia. J Reprod Med. 2004; 49:772-777.

24. Reed BD, Crawford S, Couper M, et al. Pain at the vulvar vestibule: a Web-based survey. J Lower Genital Tract Disease. 2004; 8:48-57.

25. Danby CS, Margesson LJ. Approach to the diagnosis and treatment of vulvar pain. *Dermatologic Therapy*. 2010; 23:485-504.

26. Bohm-Starke N, Hilliges M, Brodda-Jansen G, et al. Psychophysical evidence of nociceptor sensitization in vulvar vestibulitis syndrome. *Pain.* 2001; 94:177-183.

27. Frank J, Mistretta P, Will J. Diagnosis and treatment of female sexual dysfunction. Am Fam Physician. 2008;77(5):635-642.

28. Basson R, Althof S, Davis S, et. al. Summary of the recommendations on sexual dysfunctions in women. J Sex Med. 2004a;1:24-34.

29. Basson R, Leiblum S, et al. Revised definitions of women's sexual dysfunction. J Sex Med 2004b;1:40-48

30. Binik Y. The DSM Diagnostic Criteria for Vaginismus. <u>Arch Sex Beh</u>. 2010;39(2):278-291.

31. Reissing ED, Binik YM, Khalife S, et. al. Vaginal spasm, pain, and behavior: an empirical investigation of the diagnosis of vaginismus. Arch Sex Behav. 2004;33:5-17.

32. Graziottin A. Female Sexual Dysfunction In Bo K, Berghmans B, Morkved S, Van Kampen M Eds. Evidence-Based Physical Therapy for the Pelvic Floor. Edinburgh: Elsevier; 2007.

33. van derVelde J, Laan E, Everaerd W. Vaginismus, a component of a general defensive reaction. An investigation of pelvic floor muscle activity during exposure to emotion-inducing film excerpts in women with and without vaginismus. *Int Urogynecol J.* 2001;12:328-331.

34. Chiarioni G. Treatment of levator ani syndrome: update and future developments. *Recenti Prog Med*. 2011; 102(5): 196-201.

35. Benson JT, Griffis K. Pudendal neuralgia, a severe pain syndrome. Am J Obstet Gynecol. 2005; 192(5): 1663-1668.

36. Filler AG. Diagnosis and treatment of pudendal nerve entrapment syndrome subtypes: imaging, injections, and minimal access surgery. *Neurosurg Focus*. 2009; 26(2): E9.

37.. Labat JJ, Riant T, Robert R et al. Diagnostic Criteria for Pudendal Neuralgia by Pudendal Nerve Entrapment. *Neurourol Urodyn*. 2008;27 (4):306-10.

38. Foye PM, Buttacci C, Sorenson MK, Loenzo C. Coccyx Pain. . eMedicine Article: <u>http://emedicine.medscape.com/article/309486-differential</u>, updated Feb 2012.

39. Maigne J, Doursounian L, Chatellier G. Causes and mechanisms of common coccydynia: role of body mass index and coccygeal trauma. *Spine* 2000; 25(23):3072-9.

40. Patel R, Appannagari A, Whang PG. Coccydynia. Curr Rev Musculoskelet Med 2008;1(3-4):223-6.

41. Mazza L, Formento E, Fonda G. Anorectal and perineal pain: new pathophysiological hypothesis. *Tech Coloproctol* 2004;8(2):77-83.

42. Foye PM, Kamrava E, Enriquez R. Tailbone Pain Associated with a Keel-Shaped Coccyx: a Case Series. *Phys Med Rehabil* 2009;1(9):S176-S177.

43. Otcenasak MB, baca V, Krofta L, Feyereisel J. Endopelvic fascia in women: shape and relation to parietal pelvic structures. *Obstet Gynecol* 2008;111(3):622-30.

44. Ostergard DR, Bent AE, Cundiff GW, Swift SE. *Ostergard's Urogynecology and Pelvic Floor Dysfunction, 6th edition*. Philadelphia, PA: Lippicott Williams & Wilkins, 2008.

45. Brotto LA, Bitzer J, Laan E, Leiblum S, Luria M. Women's sexual desire and arousal disorders. *J Sex Med.* 2010 Jan;7:586-614.

46. Enck P, Van Der Voort IR, Klosterhalfen S. Biofeedback therapy in fecal incontinence and constipation. *Neurogastroenterol Motil*. 2009;21:1133-1141.

47. Rao S.S.C., Benninga M.A., Bharucha A.E., et. al.: ANMS-ESNM position paper and consensus guidelines on biofeedback therapy for anorectal disorders. *Neurogastroenterol Motil.* 2015; 27: pp. 594-609.

48. Mahoro G, Jarava D, Desai N, Corning D, et al. Golden-Finger: Digital rectal exam predicts dyssynergic defecation but not type of dyssynergy pattern on ARM. *J Am Col Gastroenterol*. 2019; 114: S294. doi:10.14309/01.ajg.0000591548.13628.98

49. Rao SS, Go JT. Treating pelvic floor disorders of defecation: management or cure? *Curr Gastro Rep*. 2009;11:278-287.

50. Shah ED, Pelletier EA, Greeley C, et al,. Utility of Anorectal Testing to Predict Outcomes With Pelvic Floor Physical Therapy in Chronic Constipation: Pragmatic Trial. *Clin Gastroenterol Hepatol*. 2022 May 29:S1542-3565(22)00524-9

51. Shah ED et al. Empiric pelvic rehabilitation delivered by pelvic floor physical therapists as an up-from treatment for chronic constipation. *Clin Gastroenterol Hepatol* 2022; <u>https://doi.org/10.1016/j.cgh.2022.07.023/</u>

52. Te Brummelstroete GH, Loohuis AM, Wessels NJ, Westers HC, van Summeren JJGT, Blanker MH. Scientific evidence for pelvic floor devices presented at conferences: An overview. *Neurourol Urodyn. 2*019 Sep;38(7):1958-1965. doi: 10.1002/nau.24099. Epub 2019 Jul 8. PMID: 31286567; PMCID: PMC6852158

53. Kegel A. The non-surgical treatment of genital relaxation. Ann West Med Surg. 1948;2:213-216.

54. Pannu HK, Kaufman HS, Cundiff GW, Genadry R, Bluemke DA, Fishman EK. Dynamic MR imaging of pelvic organ prolapse: Spectrum of abnormalities. *Radiographics* [online].2000;20 (6):1567-1582. Available at: <u>http://radiographics.rsna.org/content/20/6/1567.full.pdf+html</u>.

55. Wald A., Bharucha A.E., Limketkai B., et. al.: ACG clinical guidelines: management of benign anorectal disorders. *Am J Gastroenterol 2021*; 116: pp. 1987-2008.

56. van Reijn-Baggen, D. A., Han-Geurts, I. J., Voorham-van der Zalm, P. J., et al. Pelvic floor physical therapy for pelvic floor hypertonicity: a systematic review of treatment efficacy. *Sex Med Rev*, 2022; *10*(2), 209-230.

57. Parker, C.H., Henry, S. and Liu, L.W., Efficacy of biofeedback therapy in clinical practice for the management of chronic constipation and fecal incontinence. *J Can Assoc of Gastroenterol*, 2019. 2(3), pp.126-131

58. Camilleri, M. and Bharucha, A.E., 2010. Behavioural and new pharmacological treatments for constipation: getting the balance right. *Gut*, 2010; *59*(9), pp.1288-1296.

59. van Reijn-Baggen, D. A., Elzevier, H. W., Putter, H., Pelger, R. C., & Han-Geurts, I. J. Pelvic floor physical therapy in patients with chronic anal fissure: long-term follow-up of a randomized controlled trial. *Int J Colorectal Dis*, 2023; *38*(1), 3

60. Bachmann GA, Rosen R, Pinn VW, et al. Vulvodynia: a state-of-the art consensus on definitions, diagnosis and management. *J Reprod Med.* 2006; 51:447–456.

61. Haefner HK, et al. The vulvodynia guideline. *J Low Genit Tract Dis*. 2005; 9:40-51.

62. Masheb RM, Kems RD, Lozano C, et al. A randomized clinical trial for women with vulvodynia: cognitive-behavioral therapy vs. supportive psychotherapy. *Pain*. 2009; 141: 31-40.

63. Goetsch M. Surgery combined with muscle therapy for dyspareunia from vulvar vestibulitis: an observational study. *J Reprod Med*. 2007; 52: 597-603.

64. Zolnoun DA, Hartmann KE, Steege JF. Overnight 5% lidocaine ointment for treatment of vulvar vestibulitis. *Obstet Gynecol.* 2003; 102:84-87

65. Goldfinger C, Pukall CF, Gentilcore-Saulnier E, et al. A prospective study of pelvic floor physical therapy: pain and psychosexual outcomes in provoked vestibulodynia. *J Sex Med.* 2009; 6: 1955-1968.

66. Abraham K, Shuffle L. *Chronic Pelvic Pain: An independent study course for individual continuing education.* Section on Women's Health, APTA. Alexandria, VA. 2008 (1-100).

67. Goldstein AT, Marinoff SC, Haefner HK. Vulvodynia: strategies for treatment. *Clin Obstet Gynecol*. 2005;48:769-785.

68. Crowley T, Richardson D, Goldmeier D. Recommendations of the management of vaginismus: BASHH Special Interest Group for Sexual Dysfunction. *Intl J STD & AIDS.* 2006;17:14-18.

69. Figuers, C. Physical Therapy Management of Pelvic Pain. In: Irion J, Irion G eds. *Women's Health in Physical Therapy*. Baltimore: Lippincott Williams & Wilkins; 2010.

70. Frawley H, Bower W. Pelvic Pain. In: Bo K, Berghmans B, Morkved S, Van Kampen M Eds. *Evidence-Based Physical Therapy for the Pelvic Floor.* Edinburgh: Elsevier; 2007.

71. Graziottin A. Female Sexual Dysfunction In Bo K, Berghmans B, Morkved S, Van Kampen M Eds. *Evidence-Based Physical Therapy for the Pelvic Floor.* Edinburgh: Elsevier; 2007.

72. Murina F, Bernorio R, Palmiotto R. The use of Amielle Vaginal Trainers as Adjuvant in the Treatment of Vestibulodynia: An Observational Multicentric Study. *Medscape J Med 2008;10(1):23.* Published online Jan 30 2008.

73. Van Alstyne LS, Harrington KL, Haskvitz EM. Physical therapist management of chronic prostatitis/chronic pelvic pain syndrome. *Phys Ther.* 2010:90(12):1795-1806.

74. Clemens, J. Q., Nadler, R. B., Schaeffer, A. J., Belani, J., Albaugh, J., & Bushman, W. (2000). Biofeedback, pelvic floor reeducation, and bladder training for male chronic pelvic pain syndrome. *Urology*, *56*(6), 951-955.

75. Cornel, E. B., van Haarst, E. P., Schaarsberg, R. W., & Geels, J. (2005). The effect of biofeedback physical therapy in men with chronic pelvic pain syndrome type III. *European urology*,47(5), 607-611.

76. Louw A, Hilton S, Vandyken C. Why Pelvic Pain Hurts: Neuroscience Education for Patients with Pelvic Pain. 2015. ISBN 10: <u>0985718684</u> / ISBN 13: <u>9780985718688</u>; Published by Orthopedic Physical Therapy Products

77. Hamed SA, Zoheiry IM, Waked NM, Saad El-Din Mahmoud L. Effect of Neurodynamics Nerve Flossing on Femoral Neuropathy in Haemophilic Patients: A randomized controlled study. J Musculoskelet Neuronal Interact. 2021 Sep 1;21(3):379-386. PMID: 34465677; PMCID: PMC8426650.

78. G.Tharani, Jibi Paul, Jagatheesan Alagesan, Harikrishnan. N. (2023). Exploring the Effectiveness of Peroneal Nerve Flossing in Alleviating Diabetic Peripheral Neuropathy Symptoms. *Journal for ReAttach Therapy and Developmental Diversities*, 6(10s), 550–558. Retrieved from http://jrtdd.com/index.php/journal/article/view/1157