PELVIC PAIN

MUSCULOSKELETAL EVALUATION & TREATMENT

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CHRONIC PELVIC PAIN

- Chronic Pelvic Pain (CPP) is a complex syndrome
- Pain located below the umbilicus
- Present 6 months or longer [1]
- Up to 85% of CPP patients have dysfunction in the musculoskeletal system[2]

2

MUSCULOSKELETAL DYSFUNCTION

- Spasms and increased muscle tone
  - Pelvic Floor Muscles: - Levator ani muscles
- Muscle Imbalances
- Myofascial Pain[1]
  - Muscle tenderness to palpation
  - Myfascial Trigger Points (MTrP) are defined as small, palpable, hyperirritable nodules located on taut bands of skeletal muscles in an area of sustained contraction. TrPs may refer pain either locally or to another location in the body along a nerve pathway[3]
  - MTrP are generally believed to occur by muscle overload or overuse[4]
  - Trigger points can be active or latent[3]
  - Possible Muscles of Involvement: vagina, anorectum, low back, back of thighs, abdomen
- Postural Changes [1]
  - Typical Pelvic Pain Posture: Anterior pelvic tilt, increased lumbar lordosis, forward head and increased thoracokyphosis[5]
  - Musculoskeletal changes include[1]
    - Lengthened and weakened abdominal muscles
    - Shortened back extensors and thoracolumbar fascia
    - Shortened Iliopsoas muscles

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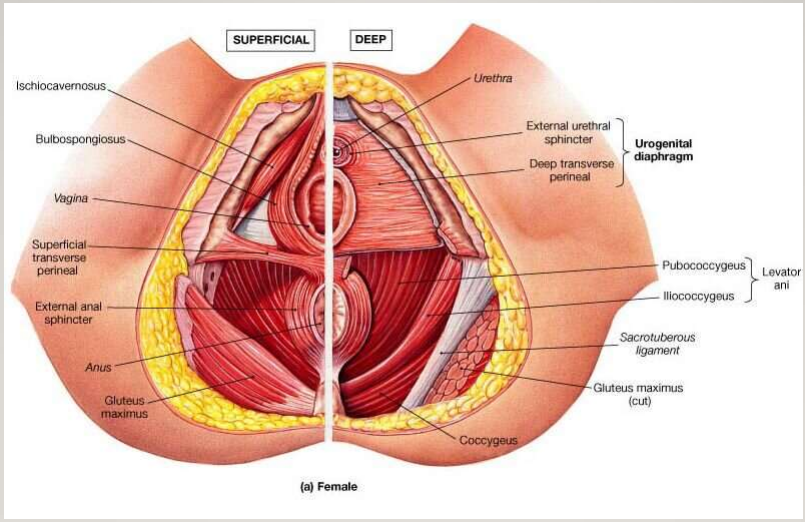

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PELVIC FLOOR MUSCLE DYSFUNCTION

- Can lead to…
  - Anxiety, depression and fatigue[6]
  - Sexual Dysfunction[7]
  - Urinary incontinence
  - Hesitancy to start the urinary flow or straining with urination
  - Urinary urgency or frequency
  - Constipation / Incomplete bowel emptying

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PELVIC FLOOR MUSCLE DYSFUNCTION: SUBJECTIVE

- Onset of Symptoms
- History
  - Sexual trauma or abuse
  - Surgeries
  - OBGYN history
- Sensory symptoms perceived to be coming from the PFM[8]
  - Numbness, tingling, pins, needles, sensitivity, decreased feeling, unusual feeling
  - Pain, tenderness, aching, burning, discomfort
- Motor Symptoms[8]
  - Loose, lax, open, weak, gapping, sagging, bulging, heaviness, full loss of control
  - Difficult to relax, tight, narrow, constricted, tense

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PELVIC FLOOR MUSCLE ASSESSMENT: OBJECTIVE

- Observation
- Palpation External
- Palpation Vaginal

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OBSERVATION

- Posture sitting vs standing
- Perineal body at rest
- Vulvar tissue changes and erythema
- Contraction and relaxation of the PFM
- Perineal movement with sustained rise in IAP
- Perineal movement with rapid rise in IAP (coughing)

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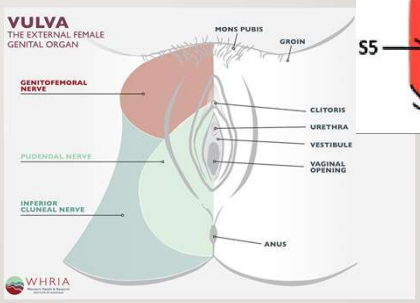
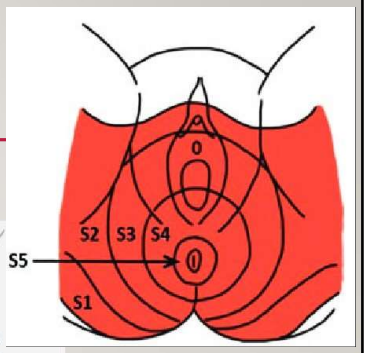
PALPATION EXTERNAL

- Iliacus
- Hip Adductors
- Rectus Abdominus
- Pubic Symphysis
- Scarring
- Perineal Body
- Sensation
  - Sacral Dermatomes S2-5
  - Allodynia, hypo- or hyperalgesia
  - Peripheral nerves
  - Vulvar Vestibule - cotton swab test





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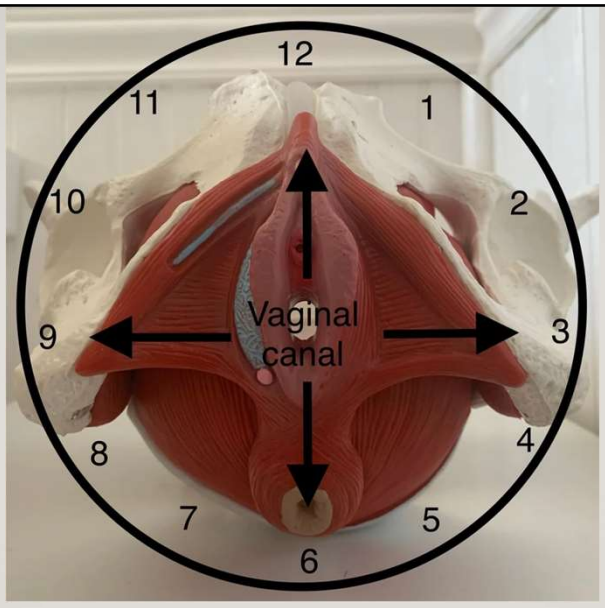
Pelvic Clock



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SUPERFICIAL PALPATION

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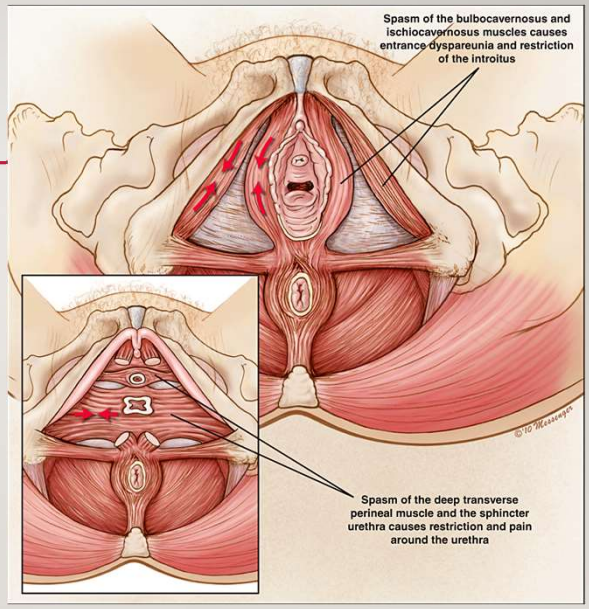
- Bulbocavernosus and Ischiocavernosus
  - 1 & 2 o'clock / 10 & 11 o'clock
- Superficial Transverse Perineal
  - 3 & 9 o'clock
- Can cause…
  - Entrance Dyspareunia[9]
  - Restrictions at the Introitus[9]



Picture credit: Julie Sarton, DPT, WCS

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MID DEPTH INTRAVAGINAL PALPATION

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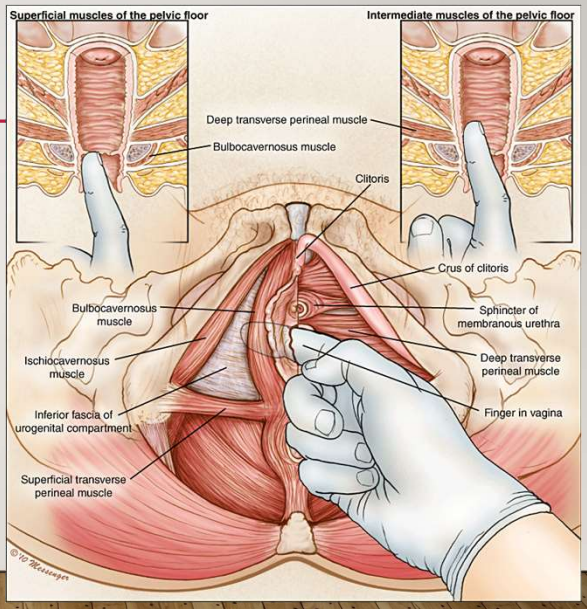
- Strength Testing of the Pelvic Floor Muscles[10,11]
- Deep transverse perineal muscle
  - Can cause restriction and pain around the urethra[9]



Picture credit: Julie Sarton, DPT, WCS

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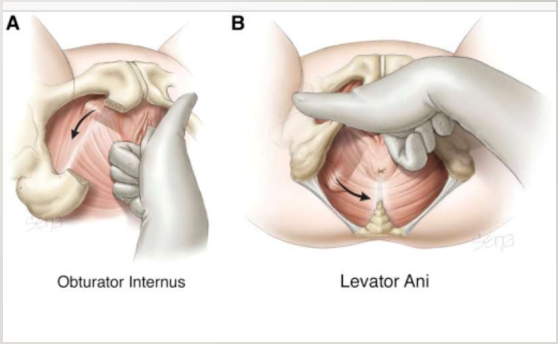
DEEP PALPATION

- Obturator internus
  - 10 & 2 o'clock position
- Levator Ani (puborectalis, pubococcygeus and iliococcygeus)
  - 1 & 11 for anterior portion (closer to midline)
  - 4 & 8 o'clock
- Ischiococcygeus (Coccygeus)
  - 5 & 7 o'clock
- Piriformis
  - Deep to Coccygeus at 5 & 7 o'clock



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Picture Credit: Meister MR, Sutcliffe S, Ghetti C, et al.

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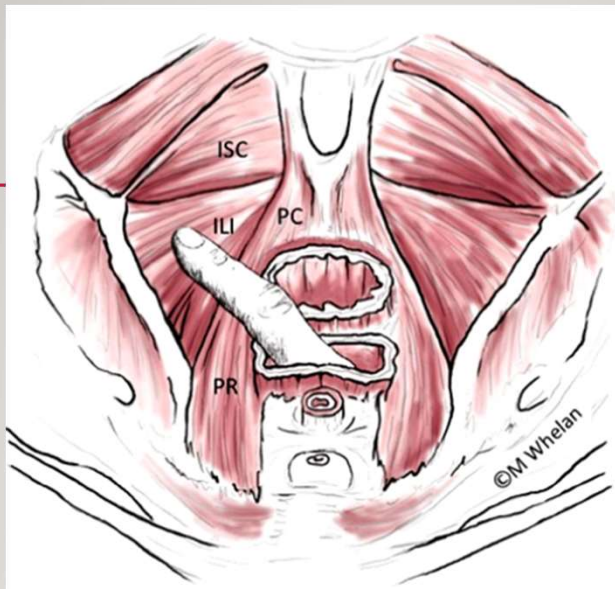

ISC -Ischiococcygeus

LEVATOR ANI:

ILI- Iliococcygeus

PC -Pubococcygeus

PR- Puborectalis

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ASSESSMENT: WHAT IS GOING ON WITH THE PELVIC FLOOR MUSCLES?

- Shortened pelvic floor muscles
- Overactive pelvic floor muscles
- Pelvic floor myalgia
- Trigger points
- True Weakness or Active Insufficiency of the PFM

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PHYSICAL THERAPY TREATMENT FOR PFM DYSFUNCTION

- Education
- Manual therapy
- Biofeedback
- Vaginal Dilators
- Pelvic Wand
- Respiration / Relaxation strategies
- Behavioral Modification

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EDUCATION

- Education of the Pelvic Floor Anatomy and Function
- Pain Education
- Sexual Positioning
- Dietary Education
  - To address bladder pain and constipation
- Postural Education
  - Sitting, standing, sleeping, driving

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MANUAL THERAPY

- Scar Tissue Mobilization
  - Abdomen
  - Perineum
- Joint mobilizations
- Soft Tissue Mobilization and Myofascial Release
  - Deep pressure massage
  - Lengthening / stretching
  - Cross fiber strumming
- Trigger Points Release[3]
  - Contract-Relax strategies
    - C-R strategies are widely used technique to promote muscle elasticity and positively affect skeletal muscle range of motion[13]
  - Ischemic Pressure
  - Dry needling

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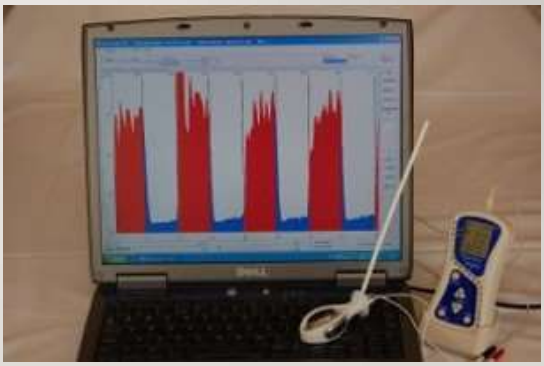
BIOFEEDBACK

- sEMG or Ultrasound imaging
- Offers visual and/or auditory feedback
- sEMG can be administered with peri-anal, vaginal or anal sensors
- Ultrasound is administered transabdominal – less invasive
- Can be used for up- or down- training of the PFM



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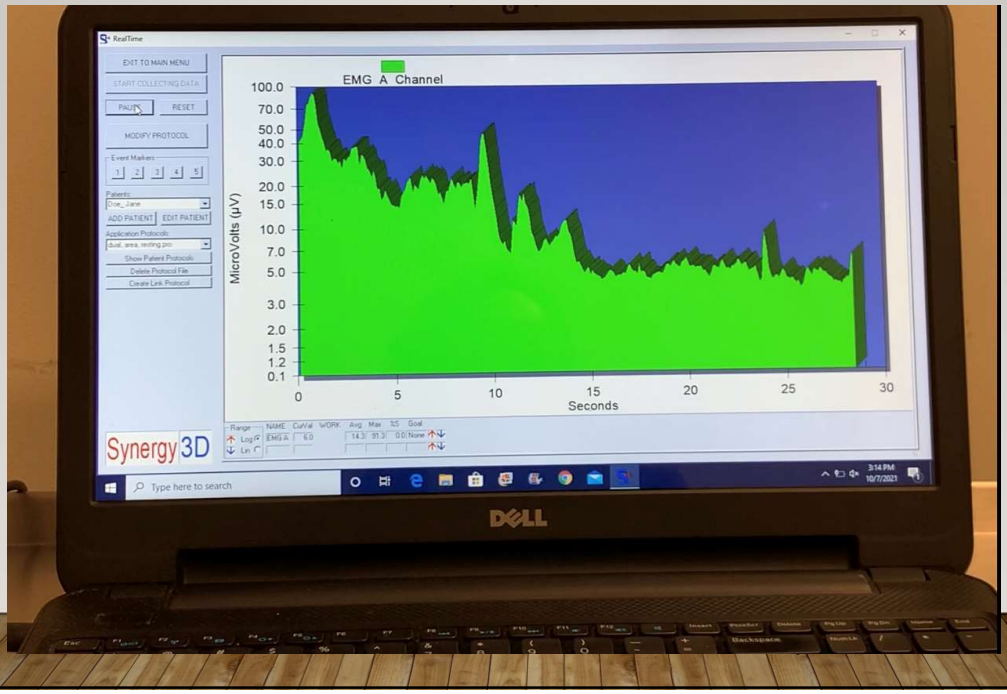

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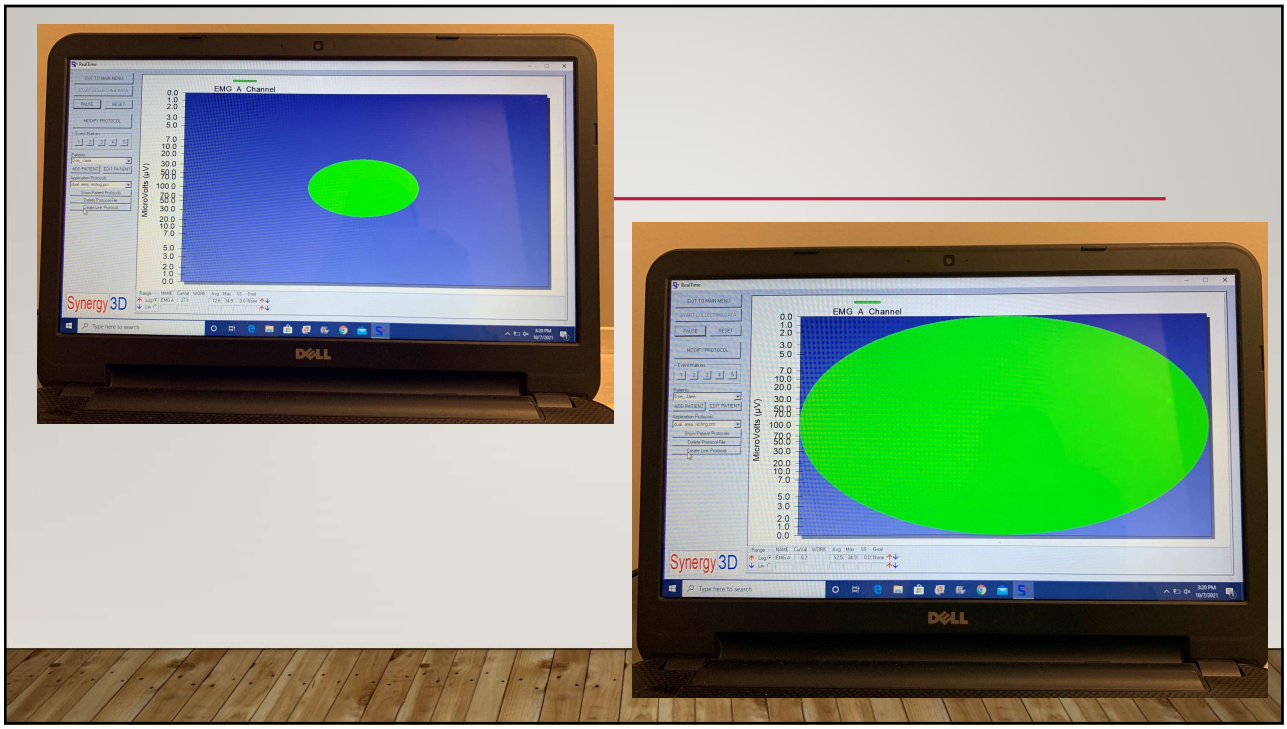
EMG A Channel
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EMG A Channel
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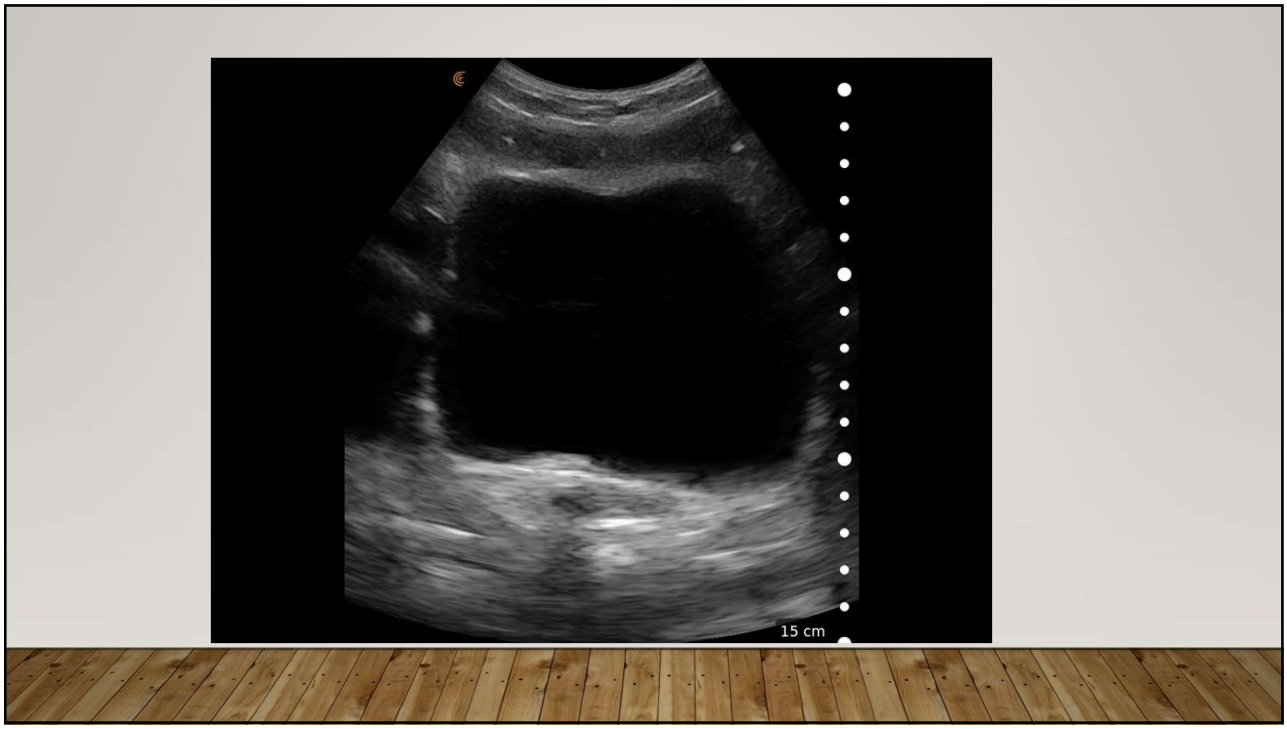
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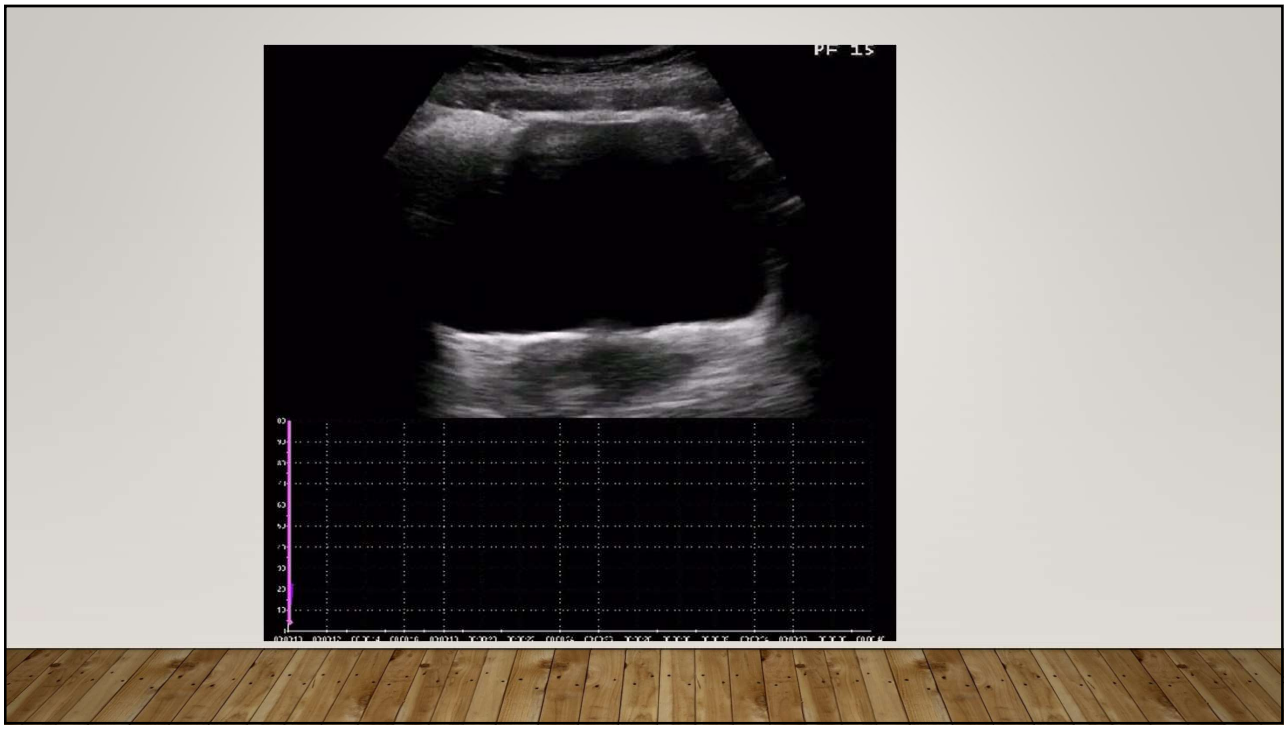

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BKF1

BIOFEEDBACK

- Engler, et al. found that the preferred treatment for chronic anal pain syndromes such as levator ani syndrome and dyssynergic defecation[14]
- Strong evidence for biofeedback as therapy adjuvant to muscle exercises, in patients with anal pain due to an overactive pelvic floor.
- Biofeedback improves the outcome of myofascial therapy. – level 1a evidence

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Slide 24

BKF1 Bargstadt-Wilson, Kari F, 10/2/2021

BIOFEEDBACK: LITERATURE REVIEW [2]

- This systematic review included 37 quantitative studies and found tentative evidence that biofeedback-assisted training interventions can improve the primarily evaluated outcomes of pain, overall symptoms, and quality of life.
- Biofeedback is not used as an intervention on its own but is rather an adjunctive tool to other standard interventions (e.g. pelvic floor exercises, education, lifestyle modification)
- In patients with vulvar vestibulitis syndrome (vulvodynia, dyspareunia), preliminary evidence has suggested that altered muscle abnormalities (as shown by altered EMG activity such as elevated resting activity, reduced muscle contraction strength, muscle instability) are present and EMG biofeedback muscle rehabilitation, therefore, is beneficial

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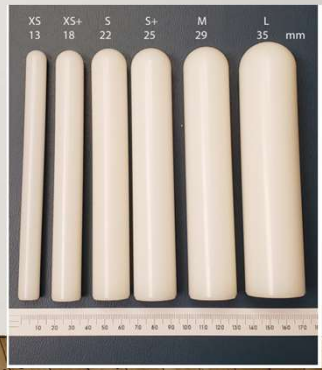
SELF STRETCHING: DILATOR

- Dilator[15]
  - Works well for entrance dyspareunia
  - 26 women using Low-dose, high frequency, movement-based dilator therapy significantly reduced or resolved the experience of pain with penetrative vaginal intercourse with dyspareunia
  - Completed 2-6 physical therapy visits
  - Movement based dilator therapy taught by the physical therapist
    - PFM contraction followed by compressive forces during the relaxation phase
    - 1:2 ratio of contract-relaxation
    - Applied to the PR, PC, IC and OI muscles
    - Proprioceptive Neuromuscular Facilitation (PNF) strategy
    - 2-10 minutes / daily to every other day / painfree after the session
  - Average pain score decreased from 8.3 before treatment to 1.3
  - Complete resolution of dyspareunia reported in 58% of the patients



Picture Credit: Miles K, Miles S

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SELF STRETCHING: PELVIC WAND

- Pelvic Wand: [16]
  - 113 patients completed 6 months of wand use
  - Trained in appropriate pressure and wand use
  - 3-4 sessions per week x 5-10 minutes
  - Self treatment of internal myofascial trigger points in the pelvic floor and it effects at reducing PFM tenderness
  - Baseline PFM sensitivity was 7.5 (10 point scale) reduced to 4 after 6 months
  - 95.5% reported the pelvic wand was very or moderately effective in alleviating pain
  - No serious adverse effects occurred

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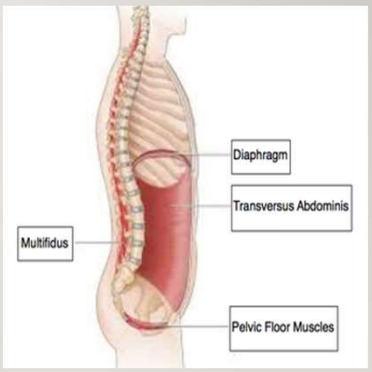
DIAPHRAGM AND THE PELVIC FLOOR

- Inhalation = the diaphragm descends and lengthens the Pelvic Floor Muscles
- Exhalation = the diaphragm returns to it's dome shape and the PFM rise or shorten
- The diaphragm assists to lengthen the pelvic floor muscles and promote relaxation through activation of the ANS - parasympathetic nervous system
- Consider
  - Rib mobility
  - Infrasternal angle
  - Abdominal tone



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BEHAVIORAL MODIFICATIONS[17, 18]

- Self coping skills
- Relaxation strategies
- Education about the condition
- Activity modification
- Graded exposure

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MULTI DISCIPLINARY APPROACH[7, 19]

- Medical Management
- Psychotherapy
  - Find a provider that specializes in sex dysfunction
- Physical Therapy - Women's Health Specialist
  - https://aptaapps.apta.org//APTAPtDirectory/CertifiedSpecialistDirectory.aspx

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THANK YOU!

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