

## Intermediate Pelvic PT Roundtable

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**Course description:** This four hour discussion is intended to provide clinicians with some pelvic PT training an opportunity to discuss current research and complex patient cases. Current research on pelvic floor muscle evaluation and bladder dairy analysis will be reviewed. Discussion about electronic medical records and EMG equipment will follow. The afternoon will conclude with discussion of difficult patient cases. Therapists are encouraged to bring questions and cases.

**Discussion level:** Intermediate

### Course Schedule

12:30 – 1:30 Review of current evidence and best practice for pelvic floor muscle evaluation  
1:30 – 2:00 Electronic medical records  
2:00 – 3:00 Analyses of measured volume bladder dairy – with practice  
3:30 – 4:00 What is important in EMG equipment purchase  
4:00 – 4:30 Complex patient cases

Partial handout

## Pelvic floor muscle examination

### Typical Order of Treatment

- Before initial visit/session
  - Paperwork mailed: patient asked to fill it out prior to initial visit (optional)
  - Patient notified that internal exam is a part of the evaluation; consider a second person
- Initial visit/session: 1 to 1½ hour
  - Medical history
  - Explain bladder diary
  - Internal vaginal exam
  - Start PFM exercises
- Second visit 30 to 45 minutes
  - Review bladder record
  - Initiate bladder training schedule with appropriate patients
  - EMG evaluation and review of PFM HEP
- Third visit 30 to 45 minutes
  - Advance bladder training
  - EMG training
  - Consider functional PFM exercises, abdominal muscle usage
- UI treatment frequency and duration
  - Typically 1 time per week for 4 to 5 weeks
  - Decrease to every other week for a total of 6 to 12 weeks

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## Components

- Intake interview
- Outcome measures
- Objective examination
- Problem list, goals, plan of care

## Outcomes measures

MANY outcomes measures

Typical female PFM dysfunction - PFDI and PFIQ are valid, reliable and responsive. Have been tested in many patient populations and cover most of the typical female PFM dysfunctions seen in the average PT practice. I also add the ICIQ-SF and ask the patient global impression of change question at re-evaluation and discharge.

- ICIQ SF MCID = 2 to 2.5
- Pelvic floor distress inventory (PFDI)
  - CRADI - bowel dysfunction - MCID 11
  - UDI - urinary dysfunction - MCID 11
  - POPDI - POP dysfunction
- Pelvic floor impact questionnaire (PFIQ)
  - UIQ - urinary QOL MCID 16
  - CRAIQ - bowel QOL
  - POPIQ - POP QOL

Male patients

- Leaking - International prostate symptoms score (IPSS)
- Pain - NIH Chronic prostatitis symptom index (NIH CPPS male)

Patients with pelvic pain - I would still encourage use of the PFDI and PFIQ with the addition of

- Documentation of function - Oswestry (MCID 10), Pelvic pain and disability index
- Paindetect - screening for centralized pain
- Sexual function scales as needed - FSFI is most common, VQ can also be used

Minimally clinically significant changes

- Calculation of percent change current value - initial value / initial value x 100
- First level occurs at 50% improvement (I often use as a goal for elderly or complex patients)
- Secondly at 75% improvement (my typical goal for simple UI)

## Prognostic indicators for poor success in PT for female SUI (Hendriks 2010)

- Severe SUI
- POP Q stage greater than 2
- Poor outcome in previous PT (subsequent Norwegian study found this not to be a limitation for success)
- Prolonged second stage labor – longer than 90 minutes
- BMI greater than 30
- High psychological distress
- Poor physical health – by self report

Not associated with poor outcomes

- Age
- Perineal laceration up to grade 3
- Forceps or vacuum delivery

Reliability of testing (Sliker-ten Hove 2009)

Test	Intra - observer	Inter – observer
Deep Palpation	-----	-----
Pain (yes, no)	Substantial	Substantial
Urethral lift (yes, no)		
Levator closure (yes, no)		Moderate
Symmetry Left to Right (yes, no)	Substantial	
MMT (absent, weak, moderate, strong)	Substantial	Substantial
Endurance - # of seconds	Substantial	
Fast twitch - # to max of 15		Moderate
Voluntary relaxation (complete, partly, absent)	Substantial	
Movement of perineum during cough (yes, no)	Substantial	
Relaxation during straining (yes, no, inward)	Moderate	

- Brink scale (Brink 1994, Brink 1989, Hundley 2005)
  - Good tool and used in research, typically by nurses and physicians
  - Testing position: place the middle and index fingers 4-6 cm in vaginal canal  
Oriented both laterally (side to side), palm up during pressure test  
Oriented vertically (index finger on top of middle finger) during displacement test
  - Instructions to patient:
    - With fingers side by side “contract your PFM around my finger and hold as long as you can.”
    - Move fingers vertically and repeat “contract your PFM around my finger and hold as long as you can.”

Score	1	2	3	4
<b>Pressure</b>	No response; no pressure felt on examining finger	Weak squeeze; flicker felt in sporadic places	Moderate squeeze; felt all the way around the finger	Strong squeeze; full circumference of the finger compressed
<b>Displacement of vertical plane</b>	None; no movement up toward the pubic bone	Finger base moves anteriorly (pushed up by muscle bulk)	Whole length of finger moves anteriorly	Whole finger moves anteriorly; is gripped and pulled in
<b>Time</b>	None	Less than 1 second	1 to 2.5 seconds	3 or more seconds

# IUGA and ICS Standardization Document

Haylen BT, et al. An International urogynecological association (IUGA)/ International continence society (ICS) joint report on the terminology for female pelvic floor dysfunction. Int Urogynecol J 2010 21:5-26.

## Types of charts

- Frequency volume chart (FVC) - this records the volumes voided as well as the time of each micturition, day and night, for at least 24 hours
- Bladder diary - this records the times of micturitions, and voided volumes, incontinence episodes, pad usage, and other information such as fluid intake, the degree of urgency, and the degree of incontinence

## Information from frequency volume chart

- *Daytime frequency*- is the number of voids recorded during waking hours and includes the last void before sleep and the first void after waking and rising in the morning.
- *Nocturia* - is the number of voids recorded during a night's sleep: each void is preceded and followed by sleep.
  - Night time frequency is a term used by some to denote all voids from the time to go to bed with the intention of sleeping (not including the last PM void) till getting up out of bed with the intension of rising (not including the first AM void) this would include any voids that occur after retiring but before sleeping and after waking but before rising for the day. (Homma 2008)
- *24-hour frequency* - is the total number of daytime voids and episodes of nocturia during a specified 24-hour period.
- *24-hour production* - is measured by collecting all urine in 24 hours.
- *Maximum voided volume* - highest voided volume recorded
- *Average voided volume* - summation of all volumes voided divided by the number of voids
- *Polyuria* - excessive urine excretion resulting in frequent micturition. It is defined as the measured production of more than 2.8 liters of urine in 24 hours in a women weighing 70 kg (about 155 pounds) = over 40 ml/kl.
- *Nocturnal urine volume*- is defined as the total volume of urine passed between the time the individual goes to bed with the intention of sleeping and the time of waking with the intention of rising. It excludes the last void before going to bed but includes the first void after rising in the morning.
- *Nocturnal polyuria*- is present when an increased proportion of the 24-hour output occurs at night.  $\text{Nocturnal voided volume} / \text{total 24 hr voided volume} \times 100$ . Over 20% young adults, over 33% for those over 65 yo

Please note these definitions are based on patient's compliant and may not represent actual occurrence.

## Voiding symptoms

- *Hesitancy* - is the complaint of a delay in initiating micturition
- *Slow stream*- is the complaint of a urinary stream perceived as slower compared to previous performance ort in comparison to others
- *Intermittency* - is the complaint of urine flow that stops and starts one or more times during voiding
- *Straining to void* - is the need to make an intensive effort to initiate or maintain the urinary stream
- *Spraying (splitting) of urinary stream* - is complaint of the occurrence of a spray or a split stream instead of one discrete stream

- *Feeling of incomplete (bladder) emptying* - is the complaint that the bladder does not feel empty after micturition.
- *Need to immediately re-void* - complaint that further micturition is necessary soon after passing urine
- *Post micturition leaking*- is complaint of UI after completion of micturition
- *Position dependent micturition* - the complaint of the need to assume a certain position to start voiding or improve bladder emptying (such as leaning backward, forward or semi standing)

#### Bladder storage symptoms

- *Increased daytime urinary frequency* - complaint that voiding occurs more during waking hours than deemed normal by the woman. Many professionals have a problem with this definition as the exact frequency seems to be dependent on several factors. In general it is thought to be less than 7 times
- *Nocturia* complaint of interruption of sleep one or more times because of the need to urinate – possibly different from night time frequency
- *Urgency* – complaint of a sudden compelling desire to void which is difficult to differ
- *Overactive Bladder syndrome (OAB)* – urinary urgency , usually accompanied by frequency and nocturia, with or without UI, in the absence of UTI or other pathology

#### Bladder sensory symptoms

- *Normal* - no desire to void is felt when bladder volume is small. As volume increases, the desire to void begins gradually, is felt intermittently and is weak. It is felt continuously when strong at larger volumes. (Homma 2008)
- *Increased bladder sensation* – complaint that desire to void occurs earlier and is more persistent. Differs from urgency in that it is possible to postpone
- *Reduced bladder sensation* – complaint that desire to void occurs later despite awareness of bladder filling. Is bladder filling different from desire to void? (Homma 2008)
- *Absent bladder sensation* – complaint of absence of both filling sensation and desire to void.

#### Urinary Incontinence symptoms

- *Stress urinary Incontinence (SUI)*
- *Urgency urinary Incontinence (UUI)*
- *Mixed urinary Incontinence (MUI)*
- *Nocturnal enuresis* – complaint of UI during sleep
- *Postural urinary Incontinence* – complaint of UI with change of posture. It is unclear whether this is related is SUI or UUI
- *Continuous urinary Incontinence*
- *Insensible urinary Incontinence* – complaint of UI where patient was unaware of how it occurred
- *Coital urinary Incontinence* – complaint of UI during in intercourse, can be further subdivided into UI with penetration or orgasm

#### Urinary Incontinence Conditions (Homma 2008 Int J or Urol 15;35-43)

- *Reflex UI* – urine passage as an autonomous micturition reflex of the sacral micturition center
- *Functional UI* - UI caused by impairments of function
- *Overflow UI* – UI associated with urinary retention

## How to choose Pelvic PT Equipment

How comfortable am I with computers?

- Very comfortable
  - More complex menus
  - High degree of customization
- Moderately comfortable
  - Moderate degree of customization
  - Some pre set protocols
- Not very comfortable
  - Pre set protocols
  - Simple menus
  - May consider only the hand held EMG first

Patient caseload

- Elderly and patient with visual impairments – bold display with audio commands
- Children – games and variety of display
- Patients with pain diagnosis – ability to use external PFM electrodes
- Patient with complex diagnosis – need to interface with electrical stimulation

Therapist

- Need to store data and print out reports
- Ability to modify protocols
- Time available to learn usage of machine
- Need for portability – multiple sites, rooms
- Space available – desk top versus lap top
- Budget – purchase hand held unit initially and upgraded later?

EMG machine specifics

- Band pass – 25 to 500 Hz
- Quality amplification and high common mode rejection ratio 70 to 100dB
- Frequency response / Sampling time - above 1000 Hz
- Low signal to noise ratio – less than 1.0uV
- Types of electrodes it interfaces with – internal vaginal, rectal, external perianal, electrical stimulation
- Home units, rental ability
- Warranty and reliability of equipment
- Technical support available

Other equipment available

- Pressure biofeedback – in clinic, home units
- Electrical stimulation – in clinic, home units
- Educational materials – for patient, for therapist