

The Importance of a Healthy Pelvic Floor Musculature

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Today's Objectives

- To understand the functions of the pelvic floor muscle (pfm).
- To understand the role of pelvic floor physiotherapy in the treatment of bladder and bowel dysfunction in the MS patient.



Functions of the Pelvic Floor Musculature

- Sphincteric
- Supportive
- Sexual
- Respiration
- Postural/Core Stabilization



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PFM in Continent vs SUI Women

- Compared pfm function in 30 continent women vs 59 women with SUI.
- Ages 21-44 and all parous.

Quebec, Canada 2004

Journal of Neurourology & Urodynamics



PFM in Continent vs SUI Women--cont.

Results:

Continent women had a higher passive force as well as higher absolute endurance when compared to pfm of incontinent women. PFM function is impaired in incontinent women.

Maximal strength was not significantly different between the two groups.

Quebec, Canada 2004



PFM & Bowel Dysfunction

Decreased PFM strength:

- Flatual incontinence
- Fecal incontinence

Poor Relaxation of PFM:

- Chronic constipation
- Incomplete bowel emptying



Functions of the Pelvic Floor Musculature

- Sphincteric
- **Supportive**
- Sexual
- Posture
- Respiration



Pelvic Organ Prolapse

- Cystocele
- Urethrocele
- Urethrocystocele
- Uterine Prolapse
- Rectocele
- Enterocele
- Rectal Prolapse



Pelvic Organ Prolapse (POP)

- 40% of the general female population aged 45-85 years has significant pelvic organ prolapse. The presence of POP is related to poor pelvic floor coordination, which is likely to be causative.
- Netherlands, 2004
Journal of Neurourology & Urodynamics



The Boat Analogy

A boat is tied up at a dock, supported in the water by ropes. There is no tension on the ropes unless the water level drops.

Boat = Pelvic organ

Ropes = Endopelvic Fascia (connective tissue)

Water = Pelvic Floor Muscle

If the PFM is weak, decrease support to pelvic organ and therefore tension on endopelvic fascia (CT).

Eventually fascia/ropes stretch or break and pelvic organ descent occurs (POP).



Functions of the Pelvic Floor Musculature

- Sphincteric
- Supportive
- **Sexual**
- Respiration
- Postural Support/Core Stabilization



Pelvic Pain/Sexual Dysfunction

For a muscle to be healthy and function effectively, the ability to properly relax is equally important to the ability to properly contract.

Hypertonicity in muscles can lead to myofascial pain syndromes.



Pelvic Pain/Sexual Dysfunction

- **Vaginal Pain:** Vulvodynia, Clitoridynia, Vulvar Vestibulitis, Vulvovaginitis, Vaginismus
- **Bladder Pain:** Urethral Syndrome, Interstitial Cystitis
- **Rectal Pain:** Levator Ani Syndrome, Anismus, Proctalgia Fugax



Functions of the Pelvic Floor Musculature

- Sphincteric
- Supportive
- Sexual
- **Respiration**
- **Postural Support/Core Stabilization**

Standard orthopedic physiotherapy



IPPC—Incontinence & Pelvic Pain Clinic

- **Bladder dysfunction** (e.g. incontinence, urgency, frequency, etc.)
- **Bowel dysfunction** (e.g. incontinence, levator ani spasm, chronic constipation, IBS, incomplete emptying, etc.)
- **Pelvic organ prolapse** (e.g. cystocele, rectocele, uterine prolapse, etc.)
- **Pelvic pain/Sexual dysfunction** (e.g. VVS, vulvodynia, interstitial cystitis, rectal pain, coccyx pain, etc.)



PFM Physio Goals for the MS Patient

Recommendations for MS patients according to
Incontinence Volume 2 Management edition 2005 by Paul
Abrams et al

Bladder: “Management needs to focus on symptomatic relief and should be as conservative as possible.”

Bowel: “A regular bowel programme should be implemented to prevent constipation, rectal overdistension and faecal incontinence.”



Physiotherapy Treatment

- Education
- Medical history/surgical history/obstetrical & gynecologic history/bladder & colorectal history, etc.
- Bladder Diary
- Diet & Lifestyle Alterations



Diet & Lifestyle Alterations

- caffeine



Diet & Lifestyle Alterations

- caffeine
- smoking
- alcohol
- Aspartame/artificial sweeteners (diabetics)
- Carbonation
- Acidic fruits & juices
- Spicy foods
- Red dye - wieners and sausages (children)
- H₂O Intake: concentrated urine



Pelvic Floor Physiotherapy (continued)

- Voiding & Defecating Toileting Postures



Pelvic Floor Physiotherapy (continued)

- Bladder Retraining/Behavioral Techniques
- Urge Delay/Relaxation Techniques



Pelvic Floor Physiotherapy (continued)

- Acupuncture (for pain & urgency symptoms)
- Manual Therapy:
 - Myofascial trigger point release therapy
 - Scar tissue/adhesion release techniques
 - Pubovesicular ligament DTF/urethral restrictions
 - Visceral massage (constipation)
- Pelvic Floor Muscle (PFM) relaxation techniques (incomplete bladder/bowel emptying)
- Proper PFM Strengthening Exercises combined with:
 - Computerized EMG biofeedback
 - Neuro-muscular electrical stimulation



Computerized EMG Biofeedback

- Teaches proper muscle contraction
- Visual feedback
- Improves awareness



Neuromuscular Stimulation (NMES)

- Electrical Stimulation
- Produces muscle contraction by activating nerve and muscle
- Increases effectiveness of voluntary contraction
- Helps locate muscle and facilitate correct contraction
- Combined approach of NMES and PFM exercise is best



Randomized Pilot Study: Ireland 2006

- Bladder dysfunction affects up to 90% of the MS population.
- Looked at the effects of PFM training and advice, EMG biofeedback and NMES on bladder function in MS patients.

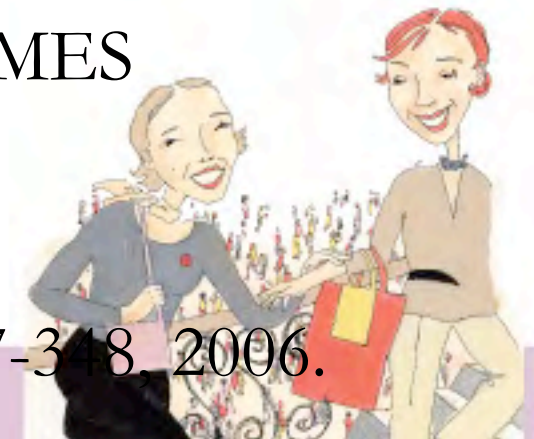
Group 1 = PFM training/advice

Group 2 = PFM training/advice + EMG

Group 3 = PFM training/advice + EMG + NMES

McClurg et al (2006)

Neurourology & Urodynamics Volume 25:337-348, 2006.



Randomized Pilot Study: Ireland 2006

Results: At week 9 of treatment, Group 3 demonstrated superior benefit as measured by the number of leaks and pad test than Groups 1 & 2.

Conclusion: Results suggest that these treatments, used in combination, may reduce urinary symptoms in MS.

Further research is needed.



Physiotherapy Treatment-continued

- Proper Pelvic Floor Strengthening Exercises
- Pelvic Floor Muscle Relaxation Techniques



Who should do pfm exercises?

- Appropriate for **everyone--no negative side effects!**
- **No contra-indications** to pfm exercises.
- Increase circulation, increase fight against UTI.
- Anyone wanting to prevent or correct loss of bladder & bowel control, POP and those wanting to improve sexual sensation and appreciation, improve respiration & postural/CORE support and stabilization.
- Exercise **does not limit future treatment options** and can augment pharmaceutical and surgical options.
- Encourages patients to become active in their treatment plan; mental and physical gain.



“...if motivated, most people treated with behavioral techniques show improvement from complete dryness to decreased episodes of incontinence.”

Agency for Health Care Policy & Research, US
Department of Health and Human Services

