

Start	End	Topic	Speakers
07:30	07:45	Bowel and Bladder Issues in the Neurologic Client	Lori Mize
07:45	08:00	Common Pelvic Floor Physiotherapy Treatments in Neurologic Client	Lori Mize
08:00	08:15	Multidisciplinary Clinics and the role of the pelvic floor Physiotherapist	Carina Siracusa
08:15	08:30	Case Studies	Carina Siracusa

Speaker Powerpoint Slides

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Aims of Workshop

Patients with neurologic issues whether acquired or congenital can experience a variety of bowel and bladder issues. Many of these can be improved with pelvic floor physiotherapy. Often bladder issues are the biggest predictor of quality of life for patients with neurologic issues. This workshop will explore the different types of bladder issues experienced by patients with acquired issues such as Multiple Sclerosis, CVA, and Parkinson's Disease as well as congenital issues such as cerebral palsy and childhood CVA. It will explore many of the common pelvic floor physiotherapy treatments such as exercise, manual therapy, biofeedback, and modalities and how they can be applied to patients with neurologic issues. It will also explore the role

Learning Objectives

- 1.) Participants will be able to identify physiotherapy treatments that can be used with the neurologic population.
- 2.) Participants will be able to explain the common bladder and bowel issues experienced by the patient with acquired or congenital neurologic issue.
- 3.) Participants will be able to describe the role of the pelvic floor physiotherapist on the multidisciplinary neurologic team.

Learning Outcomes

After the course the student will be able to identify and explain the most effective pelvic floor physiotherapy treatment methods for neurogenic bladder and accompanying bowel disorders.

Target Audience

Urologists, Physiotherapists, Nurse Practitioners

Advanced/Basic

Advanced

Suggested Reading

- 1.) Impact of a Pelvic Floor Training Program Among Women with Multiple Sclerosis: A Controlled Clinical Trial.
Ferreira AP, Pegorare AB, Salgado PR, Casafus FS, Christofoletti G.
Am J Phys Med Rehabil. 2016 Jan;95(1):1-8.
- 2.) The effect of pelvic floor muscle training alone or in combination with electrostimulation in the treatment of sexual dysfunction in women with multiple sclerosis.
Lúcio AC, D'Ancona CA, Lopes MH, Perissinotto MC, Damasceno BP.
Mult Scler. 2014 Nov;20(13):1761-8.
- 3.) Pelvic floor muscle training for urinary incontinence in female stroke patients: a randomized, controlled and blinded trial.
Shin DC, Shin SH, Lee MM, Lee KJ, Song CH.
- 4.) Biofeedback in rehabilitation.
Giggins OM, Persson UM, Caulfield B.
J Neuroeng Rehabil. 2013 Jun 18;10:60
Clin Rehabil. 2016 Mar;30(3):259-67.
- 5.) Pelvic floor muscle training in spinal cord injury and its impact on neurogenic detrusor over-activity and incontinence.
Vásquez N, Knight SL, Susser J, Gall A, Ellaway PH, Craggs MD.

Other Supporting Documents, Teaching Tools, Patient Education etc

- Standard Bladder Diary
- Standard Bowel Diary

Lori Mize, PT, DPT, WCS, physiotherapist from the United States will be starting off the presentation by enumerating the bowel and bladder issues that often plague the neurologic client. This will include but not be limited to overactive bladder, urgency frequency syndrome, and neurogenic bladder. Evaluation techniques will be discussed in this section and participants will be given several tools to be able to evaluate the bladder and bowel function in this population. Specifically, the physiotherapy evaluation of these clients will be explained in detail, highlighting the differences in evaluating a neurologic bladder issue as opposed to a more orthopaedic pelvic floor issue. Finally, Lori will be discussing the more common physiotherapy treatment techniques that are used in this patient population. These will include biofeedback, electrical stimulation, and therapeutic exercises. Recent research on these treatment techniques will be highlighted. Participants will go away with a basic treatment outline for patients that are coming to see a physiotherapist for a neurologic bladder issue.

Carina Siracusa, PT, DPT, WCS a pelvic floor physiotherapist from the United States will continue to the presentation by examining the role of a pelvic floor physiotherapist in a multidisciplinary neurologic clinic. Specific diagnoses will be examined including multiple sclerosis, cerebrovascular accidents and spinal cord injuries will be discussed and where along the treatment pathway that physiotherapy should or could be consulted. Several different evaluation and treatment strategies will be presented for each of the multidisciplinary clinics and diagnoses. Current research as to the effectiveness of physiotherapy for neurologic diagnoses will also be discussed. Finally, several case studies will be presented of outcomes related to physiotherapy performed for patients with MS and CVAs.

Pelvic Floor Physiotherapy for the Patient with Neurologic Dysfunction

Carina Siracusa, PT, DPT, WCS
Lori Mize, PT, DPT, WCS

Disclosures

Affiliations to disclose¹:

Carina Siracusa- Section on Women's Health APTA
Lori Mize- Section on Women's Health, APTA

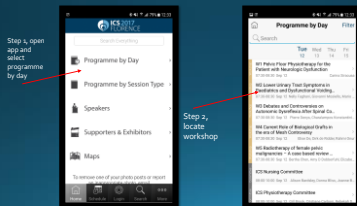
¹ All financial relationships for the past year that you may have with any business, organization with respect to the subjects mentioned during your presentation.

Funding for speaker to attend:

- Self-funded
- Institution (non-industry) funded
- Sponsored by:

• **NEW FOR 2017**

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Step 1, open app and select programme by day

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Step 3, scroll to find evaluation button

Step 4, complete survey

- A shortened version of the handout has been provided on entrance to the hall
- A full handout for all workshops is available via the ICS website.
- Please silence all mobile phones
- Please refrain from taking video and pictures of the speakers and their slides. PDF versions of the slides (where approved) will be made available after the meeting via the ICS website.

Introduction

Neuro-Rehabilitation

- Patients who are seen in a neurological rehabilitation clinic have a variety of needs
- Patients are being treated by a variety of specialists, both therapy and physicians
- Often bowel and bladder concerns are low on the priority list

Typical Diagnoses

- Cerebrovascular Accident (CVA)
- Spinal Cord Injury (SCI)
- Amyotrophic Lateral Sclerosis (ALS)
- Parkinson's Disease
- Multiple Sclerosis (MS)
- Concussion

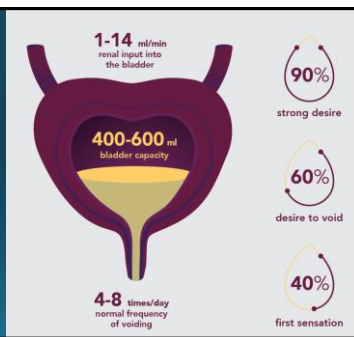


Neuro-anatomy

Micturition

- | | |
|---|--|
| <ul style="list-style-type: none"> • Normal Micturition • Intact neural control • Adequate detrusor function • Absence of obstruction • Pelvic floor muscle relaxation with voiding | <ul style="list-style-type: none"> • Micturition Dysfunction • Non relaxing pelvic floor muscles • Poor or absent detrusor contraction • Mechanical obstruction |
|---|--|

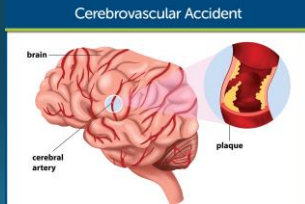
Normal Values



Bladder Issues in the Patient with Neurologic Dysfunction

Bladder Complications in CVA

- Disruption of the neuromicturition pathways
- Stroke related movement, cognitive, & language deficits with normal bladder function
- Concurrent neuropathy or medication use
- Neurogenic detrusor overactivity (NDO) is common
- Urinary retention is commonly reported early post CVA



This illustration shows the head and neck in profile, with the brain and its extensive network of blood vessels (arteries and veins) highlighted in red and yellow.

- Between 40-60% of patients with CVA experience incontinence (Thomas 2015)
- Very few healthcare practitioners screen for post CVA incontinence

Bladder Complications in Multiple Sclerosis

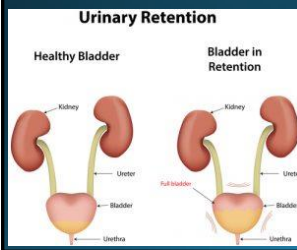
- Neurogenic Detrusor Overactivity (NDO)
- Detrusor Sphincter Dyssynergia (DSD)
- Weakness of PFM contraction
- Spasticity of the PFM
- More likely to report bother from overactive bladder (OAB) conditions



Bladder Complications in Multiple Sclerosis

- Most prevalent type of urinary incontinence in patients with MS is urgency-frequency syndrome
- People with MS wait an average of 6.5 years before reporting bladder symptoms (Aharony 2017)
- OAB is associated with depression and low self esteem as well as reduced quality of life & is common in this population (Lucio 2016)

Pelvic Floor Muscle Training for the Patient with MS



- Disadvantages
 - Increase in voiding disorders if over trained
 - Decreased overall PFM relaxation
 - Can result in hesitancy, intermittence of stream, and high post void residuals

Bladder Complications in SCI

- Bladder function will depend upon the level of injury
- Bladder function is largely influenced by the S2-4 sacral nerve roots, so an injury above this level will produce bladder dysfunction
- Incomplete vs complete SCI may affect the recovery of bladder function



Spinal Cord Injury



- Early in rehabilitation, patients will catheterize every 4 hours
- As sensation is gained, bladder schedule may change
- Bladder function worsens as patients age
- Medications generally utilized
 - Anticholinergics
 - Botox

General Physiotherapy Interventions

“Five Questions” Screening Tool

- 1.) Do you ever leak urine or feces?
- 2.) When you get the urge to urinate or defecate, can you delay it? If so, for how long?
- 3.) When you do sit down to go to the bathroom, do you have trouble initiating urination or defecation?
- 4.) Do you feel like you fully empty your bladder and bowels?
- 5.) Do you have pain associated with urination or defecation?

“Five Questions” Screening Tool

- Answering “yes” to any of those questions should trigger a referral to a pelvic floor physiotherapist
- Even if the issue pre-dated the neurologic insult, patients would benefit from referral to physical therapy



Physiotherapy Evaluation



- Behavioral assessment
- Bladder diary
- Neuro exam
 - Anal wink
 - Bulbocavernosus reflex
 - Knee and ankle reflex
- May or may not perform PFM exam

Intervention for Neurogenic LUT Dysfunction

- Interventions are generally chosen based on whether there is a failure to store or failure to empty
- Goals
 - Keep bladder pressure low to avoid reflux and upper urinary tract damage
 - Avoid elevated post residual



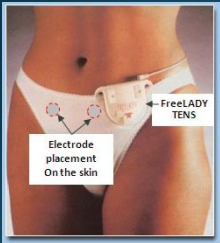
Intervention for Neurogenic LUT Dysfunction

- Therapies to facilitate urine storage related to the sphincters
 - Electrical stimulation and biofeedback
 - PFMT without biofeedback
 - Vaginal, perineal, urethral occlusive or supportive devices
 - Collagen injections
 - Surgeries



Evidence for Physiotherapy Intervention

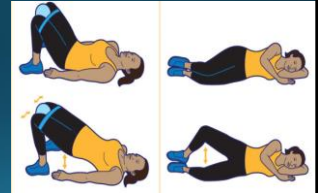
Evidence for CVA (Guo 2014)



- TENS combined with traditional PFMT
- Both groups had improvements in incontinence
- Suprapubic TENS plus exercise had the greatest impact on incontinence

Evidence (Shin 2016)

- General rehab training vs 50 minutes of PFMT
- Increased overall pelvic floor muscle strength in experimental group
- Overall LUT symptoms decreased in patients that completed PFMT



Evidence in MS



- Lucio et al found that PFMT improved QoL in women who had MS
- Khan et al performed a RCT and found patients had increased activity levels after PFMT
- Vahtera et al showed significant improvements in urinary urgency, frequency and incontinence

Evidence

- Patients with relapsing remitting MS who were treated with Tysabri experience significant improvement in incontinence related QoL measures
- Treatment effect remains over time
- Uncertain about the mechanism of incontinence improvement

MULTIPLE SCLEROSIS FACT #7

BLADDER & BOWEL PROBLEMS:
 Long bathroom lines are our enemy. We can't hold it and will give you a reason to mop the floor if you don't let us cut in line. We can go from the extreme of not being able to go, to "I gotta go NOW!" One positive in it all, if you ever need to know where the nearest bathroom is... just ask. We know the fastest escape route to every bathroom on the planet.

POSITIVE LIVING PositiveLivingWithMS.com

Evidence (Lucio 2016)



- Experimental group received 48 sessions at 2 times per week with exercise and estim, control group received home instruction
- Both groups improved
- Individualized treatment with estim had better results on incontinence and quality of life

Evidence (Lucio 2016)

- RCT
- Group 1 had PFMT using EMG and sham NMES, group 2 had EMG and intravaginal NMES
- Both groups improved
- PFMT and intravaginal NMES had the largest improvement

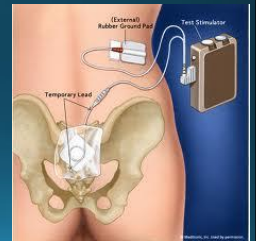


Evidence in Spinal Cord Injury

- Case control design in 2015
- 2 patients with ASIA C and D injuries were given 6 week program of PFMT
- One patient improved the ability to increase detrusor pressure and had improved continence
- Second patient had a small reduction in over activity but no change in continence

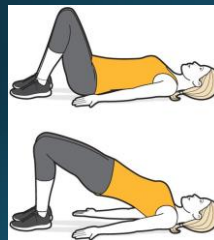
Sacral Modulation in SCI

- Incomplete SCI
- Sacral neuromodulation completed
- 14 patients had an improvement in continence and detrusor over activity
- More patients had an improvement in quality of life studies



Specific PT Interventions

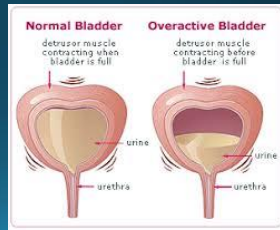
Pelvic Physiotherapy Intervention in CVA



- Timed voiding
- Core strengthening exercises
- Proper assistive devices
- Kegel exercises

Pelvic Physiotherapy Intervention Intervention in MS

- Suprapubic vibration
- Neuromodulation
- Behavioral techniques
- Fluid/fiber management
- PFM exercise



Pelvic Physiotherapy Intervention in SCI

- Evaluate level of spinal cord injury
- Evaluate sensation of bladder function
- Helpful to have urodynamic testing
- Evaluate catheterization schedule
- Bladder diaries
- Biofeedback to help with PFM proprioception
- Don't forget about sexual functioning

Case Studies

Case #1

CW

Patient Case

- Patient was being seen by neuro physical therapist for improvement of mobility and strength in lower extremities
- After two sessions patient started reporting "strange symptoms to her therapist"

Pelvic Floor Evaluation

- Diagnosis: Persistent Arousal Syndrome
- PT eval
 - External pelvic floor
 - Superficial pelvic floor weakness
 - Decreased sensation at S3-4 dermatomes
 - No superficial evidence of prolapse

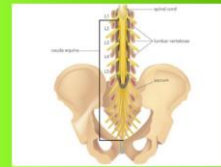


Case #2

CR

Cauda Equina Syndrome

The Cauda Equina



Initial Concerns

- Bowel and bladder issues were interfering with neuro physical therapy
- Bowel and bladder were some of the first signs of initial nerve compression injury
- Patient was already on a bowel and bladder program when presenting to pelvic floor physical therapy

Current Bowel and Bladder Program

- Bladder
 - Medication
 - Restriction of fluids
 - Occasional catheterization
- Bowel
 - Metamucil

Initial Consultation

- Due to limited number of visits for PT and extensive neurologic therapy needs, pelvic floor PT would be operating on a consultation basis only
- Initial consultation was made with interview only



Consultation

- Bowel habits
 - Patient spending long periods of time on the toilet
 - Also causing urinary incontinence
- Fiber management
 - Less than 10 grams of fiber per day were being consumed
- Pelvic floor relaxation
 - External palpation to confirm relaxation

Collaboration

- Patient resistant to change, especially with fiber management
- With encouragement patient did begin to change bathroom habits



MW Case #3

Problem

- Patient had been diagnosed with MS 10 years prior
- Had a recent onset of urgency frequency syndrome
- Reporting some mixed urinary incontinence
- No issues with constipation
- No fecal incontinence

Evaluation

- Bladder diary revealed that patient was drinking less than 10 oz of water per day
- Patient was frequently "just in case voiding"
- No spasticity noted in pelvic floor muscles
- 3/5 contraction of the pelvic floor muscles, less than 3 seconds of endurance

PT Intervention

BLADDER CONTROL DIARY											
Patient Name: _____ Date: _____											
Time	Fluid Intake	Urgency	Frequency	Incontinence	Voiding	Leakage	Stress	Control	Notes		

- Counseling on increasing fluid intake
- Decreased "just in case" voiding
- Increased pelvic floor muscle exercises

Outcomes

- 2 visits
- Reduced number of visits to bathroom down to 7-8 x per day
- Normal night time voiding
- No incontinent episodes in 2 weeks



Questions?

