

The CME program will start on the hour.

Bladder Dysfunction in People with MS

VA



**U.S. Department
of Veterans Affairs**

Veterans Health
Administration

*Multiple Sclerosis
Centers of Excellence*



**National
Multiple Sclerosis
Society**



Bladder Dysfunction in Multiple Sclerosis

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Urologist

Diversity, Equity & Inclusion Statement

The National Multiple Sclerosis Society is a movement by and for all people affected by MS. Our voices and actions reflect diversity, equity and inclusion.

We welcome and value diverse perspectives.

We actively seek out and embrace differences.

We want everyone to feel respected and be empowered to bring their whole selves to ensure we make the best decisions to achieve our mission.

Vision & Mission Statements

Our Vision:

A World Free of MS.

Our Mission:

We will cure MS while empowering people affected by MS to live their best lives.



National
Multiple Sclerosis
Society

Together We Are Stronger.

VA MS Centers of Excellence

Mission

- Improve the quality and consistency of health care services delivered to Veterans with MS across the US.
- Expand care coordination between VA medical facilities through the development of a national network of MS providers within the Veterans Health Administration.

VA



U.S. Department of Veterans Affairs

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Your feedback is important to us!

At the end of the program, please take the survey in the TRAIN or TMS websites. This will give you access to your CME/CE certificate.



Dr. Lavelle grew up in northern Michigan and earned her bachelor's degree from the University of Michigan in Ann Arbor and her medical degree from Michigan State University in East Lansing. Dr. Lavelle then completed an internship in general surgery and a residency in urology at Brigham and Women's Hospital in Boston, followed by a fellowship in female pelvic medicine and reconstructive urology at University of Texas Southwestern Medical Center in Dallas. She currently practices at Blount Memorial hospital in Maryville, TN with a focus on female urology and neurogenic bladder disorders. She has three children with her husband, and they reside on a small farm in Knoxville TN.

Overview

- MS and the Bladder
- Normal bladder function
- Neurogenic Detrusor Overactivity
 - Definition
 - Treatment options
- Detrusor sphincter dyssynergia
 - Definition
 - Treatment options
- Recurrent Urinary Tract Infections
- Conclusions

MS and Bladder symptoms

- 1 out of 10 patients have bladder dysfunction at the diagnosis of MS
- 52-97% of MS patients eventually have bladder symptoms
- 10-40% incidence of incontinence in the general population



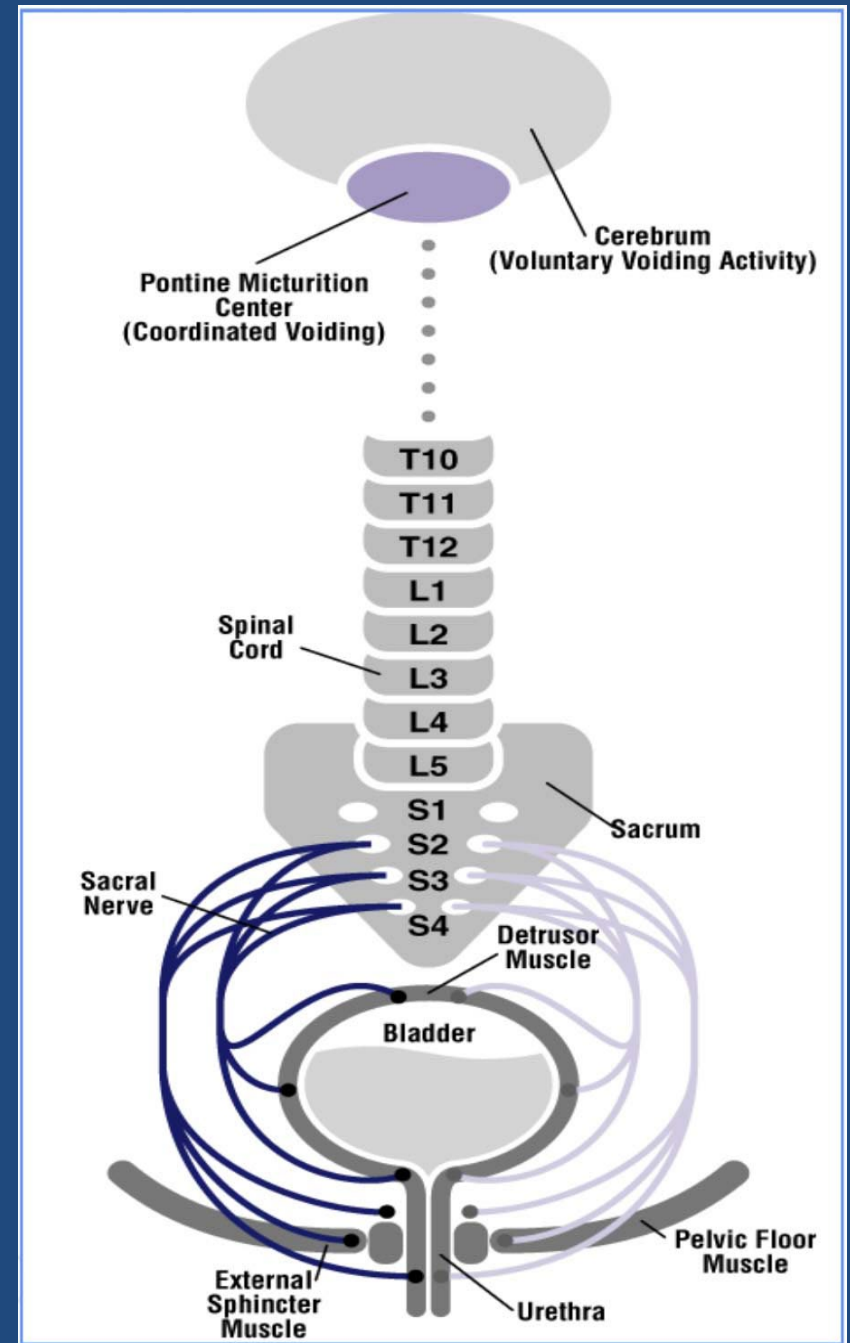
MS and Bladder symptoms

- MS is a heterogeneous disease with lesions in different locations
- Heterogeneous bladder dysfunction
 - Neurogenic Detrusor Overactivity
 - Detrusor sphincter dyssynergia



Normal Bladder Function:

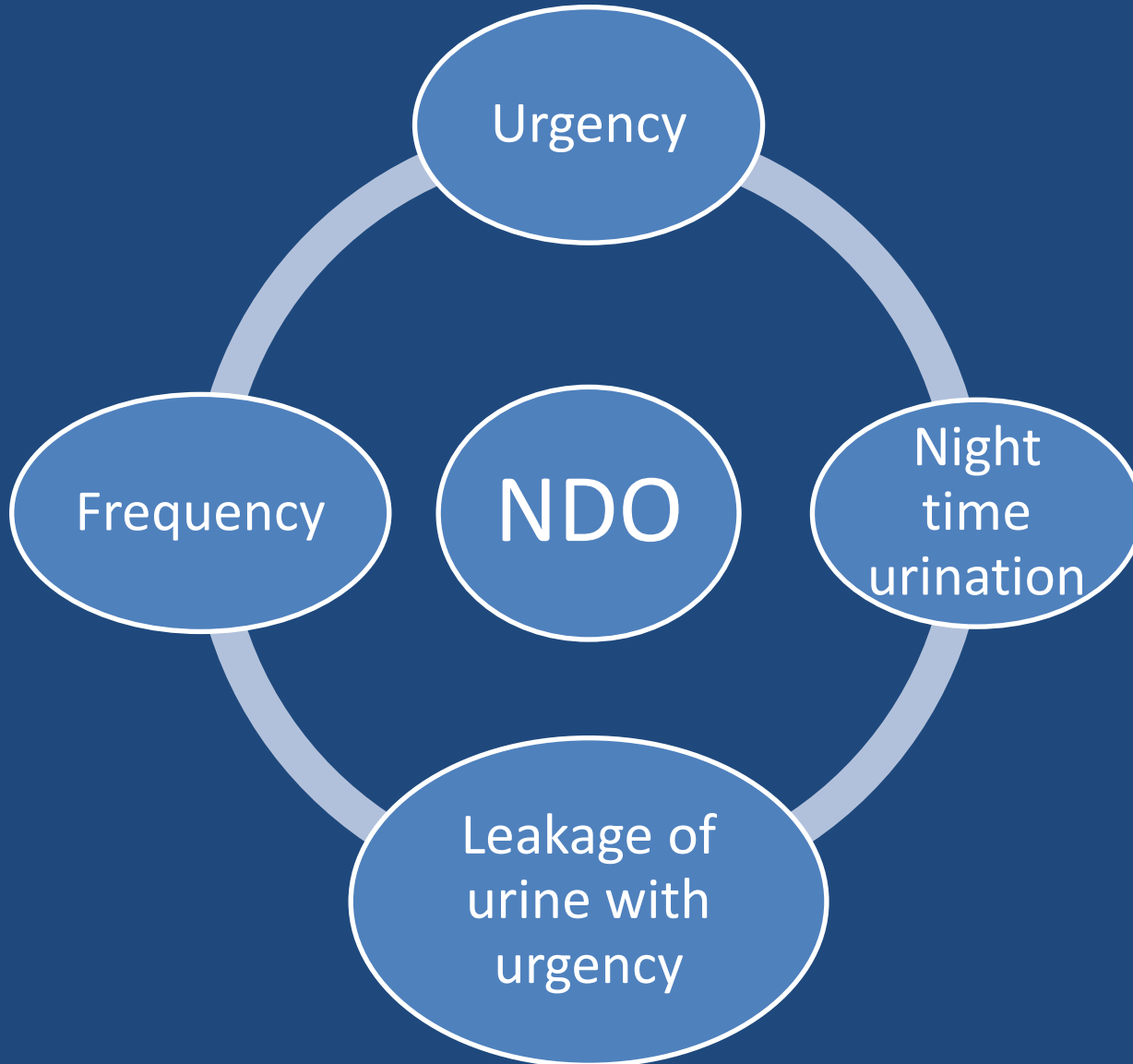
- Bladder: storage & elimination of urine.
- As the bladder fills with urine, the detrusor muscle relaxes and the pelvic floor contracts.



What is Neurogenic Detrusor Overactivity (NDO)?

- Symptom Complex of bothersome urinary symptoms
- Presence of urinary urgency usually accompanied by frequency, with or without urge incontinence in the setting of a neurologic condition (i.e. MS, spina bifida, Parkinson's Disease, Spinal cord injury, Strokes)

What symptoms can NDO cause?



What symptoms can NDO cause?

- Urgency: Sudden compelling desire to pass urine which is difficult to defer
- Frequency: More than 7 voids per waking hours
- Nighttime urination: 1 or more night time void
- Urge Urinary Incontinence: involuntary leakage associated with sudden urge



Evaluation

- History
 - History of pelvic/back surgery
 - +/- Fecal incontinence, recurrent UTI's
- Physical Exam
 - w/Post void residual
- Urine test, possible Urodynamics testing or cystoscopy



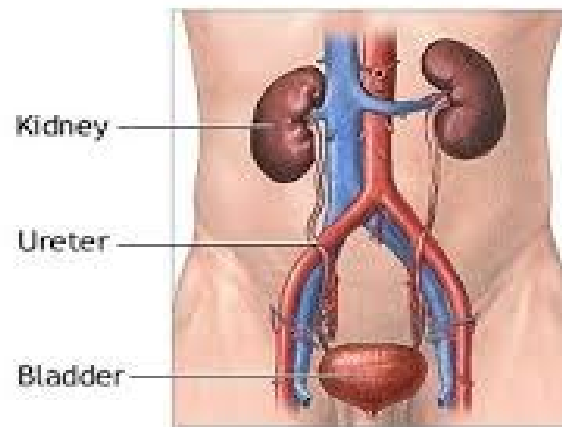
Goals of Treatment

- Maintain kidney health
- Relieve symptoms
- Decrease bother
- Increase quality of life
- Minimize side effects and burden of treatment

First line treatment:

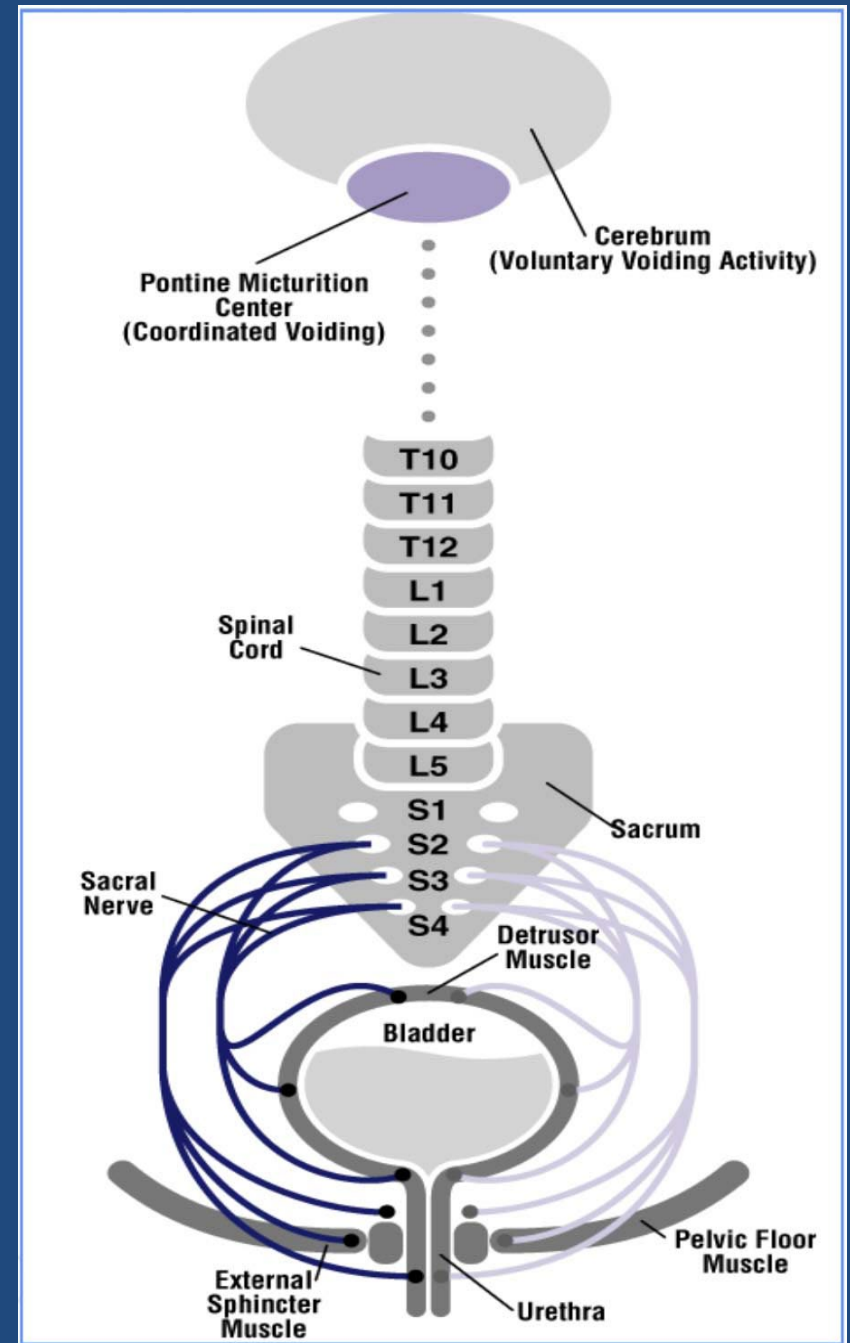
Patient Education:

- Normal urinary tract function
- Benefits/risks of treatment alternatives
- Assess treatment goals



Normal Micturition

- Bladder: storage & elimination of urine.
- As the bladder fills with urine, the detrusor muscle relaxes and the pelvic floor contracts.



1st Line Treatment

- Behavioral treatment (for 8-12 weeks):
 - Fluid management
 - Avoid bladder irritants
 - Bladder training
 - Urge control strategies
 - Pelvic floor muscle training/therapy
 - Weight loss
- Up to 82% reduction in incontinence when closely adhered to
- ***Can be as good or better than drug therapy***

Fluid management

- Limit of 1-2 cups of caffeine/day
 - Increase of caffeine (>2 cups/day) doubles the risk of OAB symptoms
- Max of 6-7 cups of fluids total (preferably water)
 - Decreasing intake by 25% can reduce frequency and urgency by 25-37%
- ***Exception: KIDNEY STONE PATIENTS***

Bladder Irritants

- Smoking
- Caffeine
- Carbonated beverages
- Alcohol
- Constipation



BRISTOL STOOL CHART

TYPE 1



SEPERATE HARD LUMPS, LIKE NUTS
(HARD TO PASS)

TYPE 2



SAUSAGE-SHAPED BUT LUMPY

TYPE 3



LIKE A SAUSAGE BUT WITH
CRACKS ON THE SURFACE

TYPE 4



LIKE A SAUSAGE OR SNAKE,
SMOOTH AND SOFT

TYPE 5



SOFT BLOBS WITH CLEAR-CUT
EDGES

TYPE 6



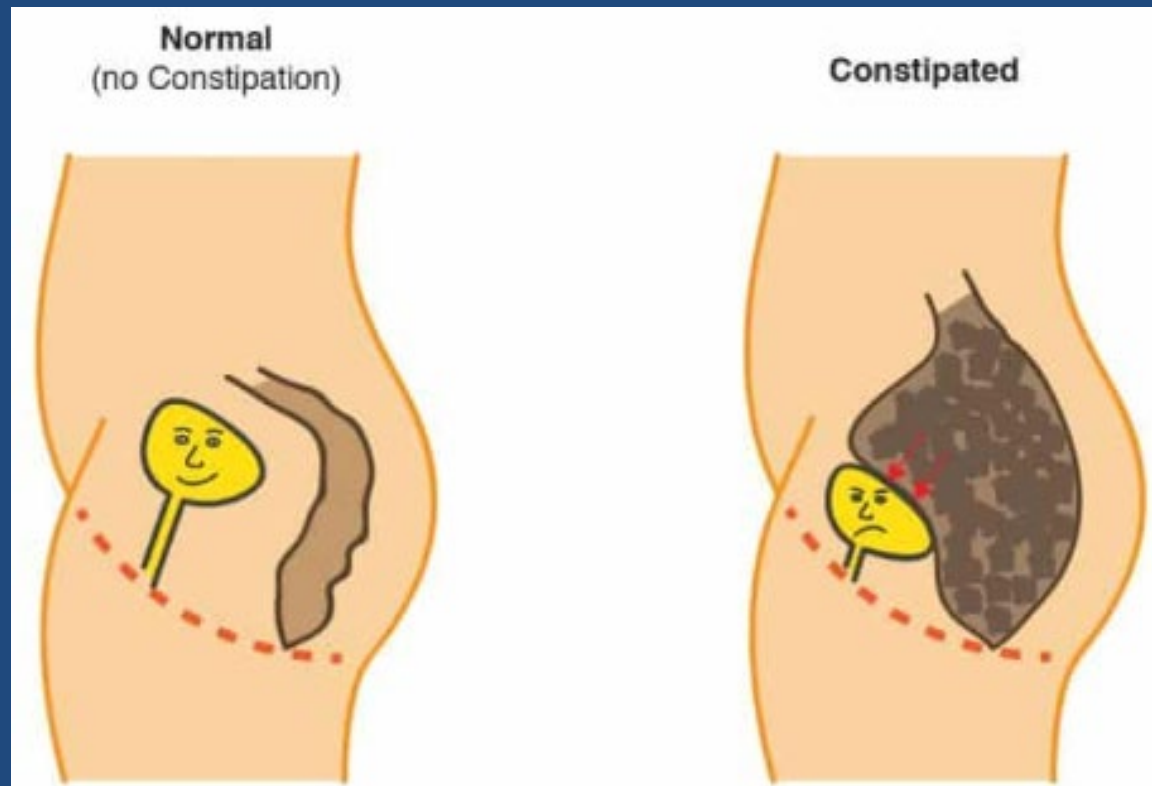
FLUFFY PIECES WITH RAGGED
EDGES, A MUSHY STOOL

TYPE 7



WATERY, NO SOLID PIECES

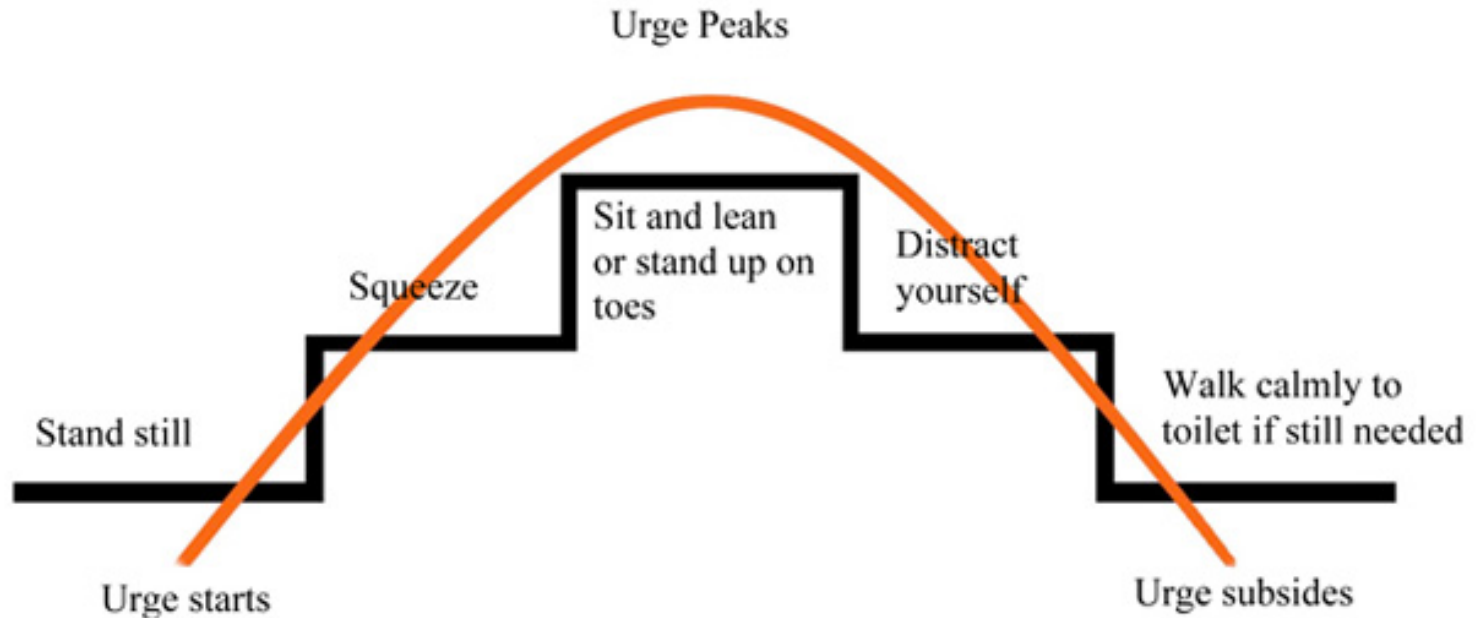
Constipation and Bladder Issues



Bladder training

- 1970's Bladder drill: Inpatient care for 7-10 days to establish normal voiding schedule
- Modern approach:
 - Self distraction techniques
 - Timed voiding with gradual increase in intervals to a goal of 3-4 hours between voids

Urge Suppression

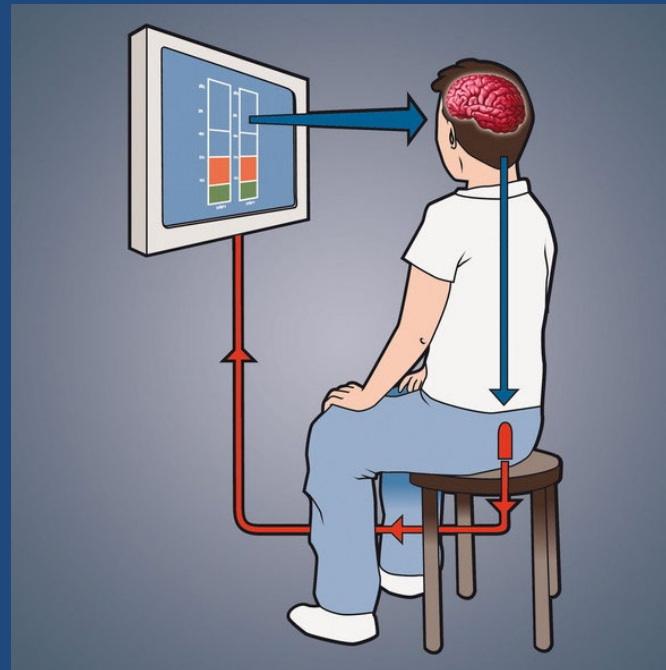


Urge curve ———

Action ———

Pelvic Floor Physical Therapy

- Voluntary contractions of pelvic floor to inhibit bladder contractions
- +/- Biofeedback program



Weight Loss

- Obesity is a risk factor
- 30% reduction in urge incontinence episodes with 8% weight loss



When Behavioral Therapy Fails

- Second Line Therapy:
 - Medications:
 - Antimuscarinic
 - Beta3 agonists



Antimuscarinic Medications

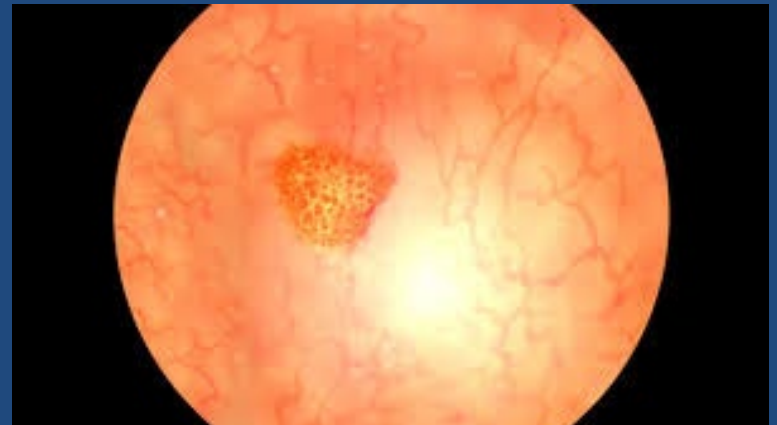
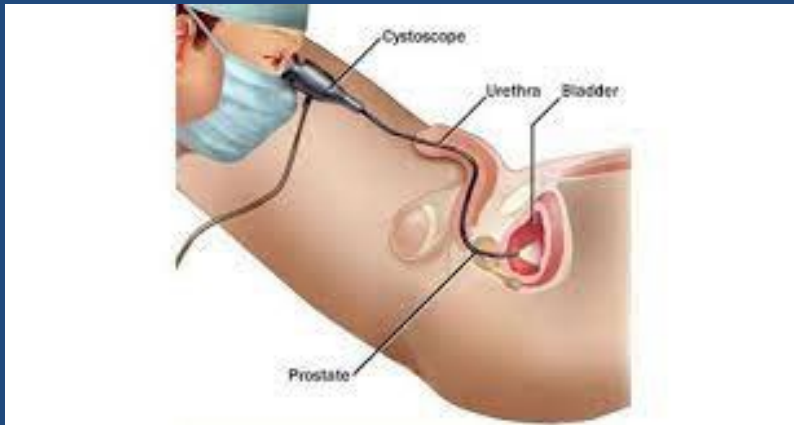
- Oxybutynin
 - Patch available over the counter
- Tolterodine
- Solifenacin
- Darifenacin hydrobromide
- Trospium chloride
- Fesoterodine
- Most common side effects: dry mouth, constipation, blurred vision, long term memory issues

Beta3 Agonists

- Mirabegron
 - Lower incidence of dry mouth, constipation, blurred vision
 - Most common side effects: Headache, nasopharyngitis, and gastrointestinal complaints
 - May increase Blood Pressure
- Vibegron
 - No blood pressure effects

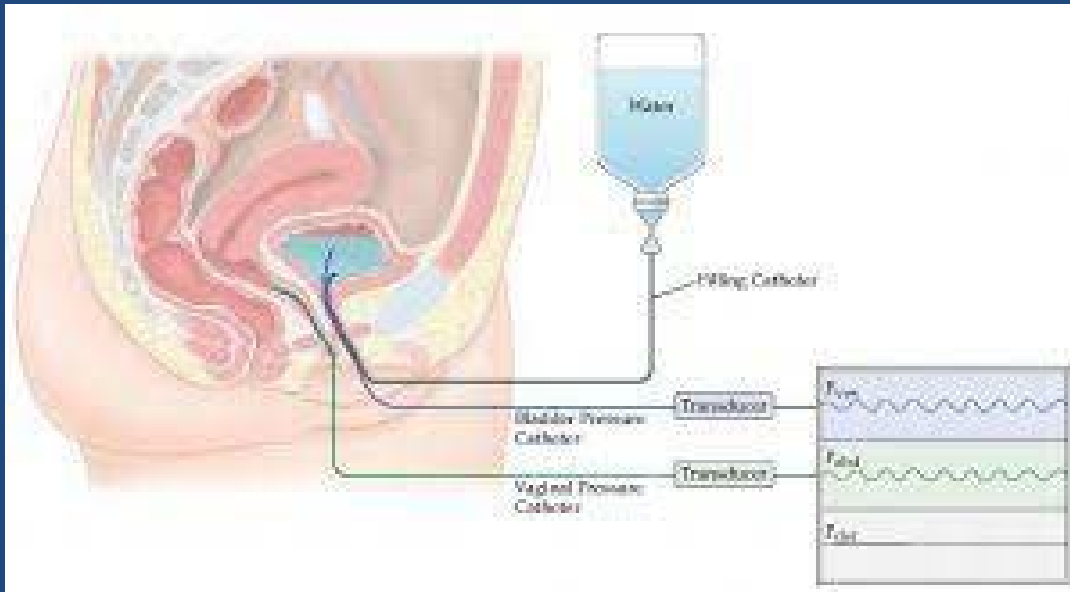
Further Testing

- Cystoscopy



Further Testing

- Urodynamics



Other treatment options

- Intrathecal OnabotulinumtoxinA
- Neuromodulation:
 - Percutaneous tibial nerve stimulation
 - Sacral neuromodulation

Percutaneous Tibial Nerve Stimulation

- Weekly therapy for 12 weeks
- Then maintenance therapy varies (monthly)



Intradetrusor OnabotulinumtoxinA (AKA BOTOX)

- 20% risk of inability to urinate requiring temporary clean intermittent catheterization
- Effects last around 6 months



Sacral Neuromodulation

- Office trial followed by 1 outpatient surgery
- OR
- 2 staged outpatient surgeries
 - Typical battery life= 10-15 years
 - **Recently MRI COMPATIBLE**



Future Directions

- Recent FDA approval for eCoin, implantable tibial nerve stimulation



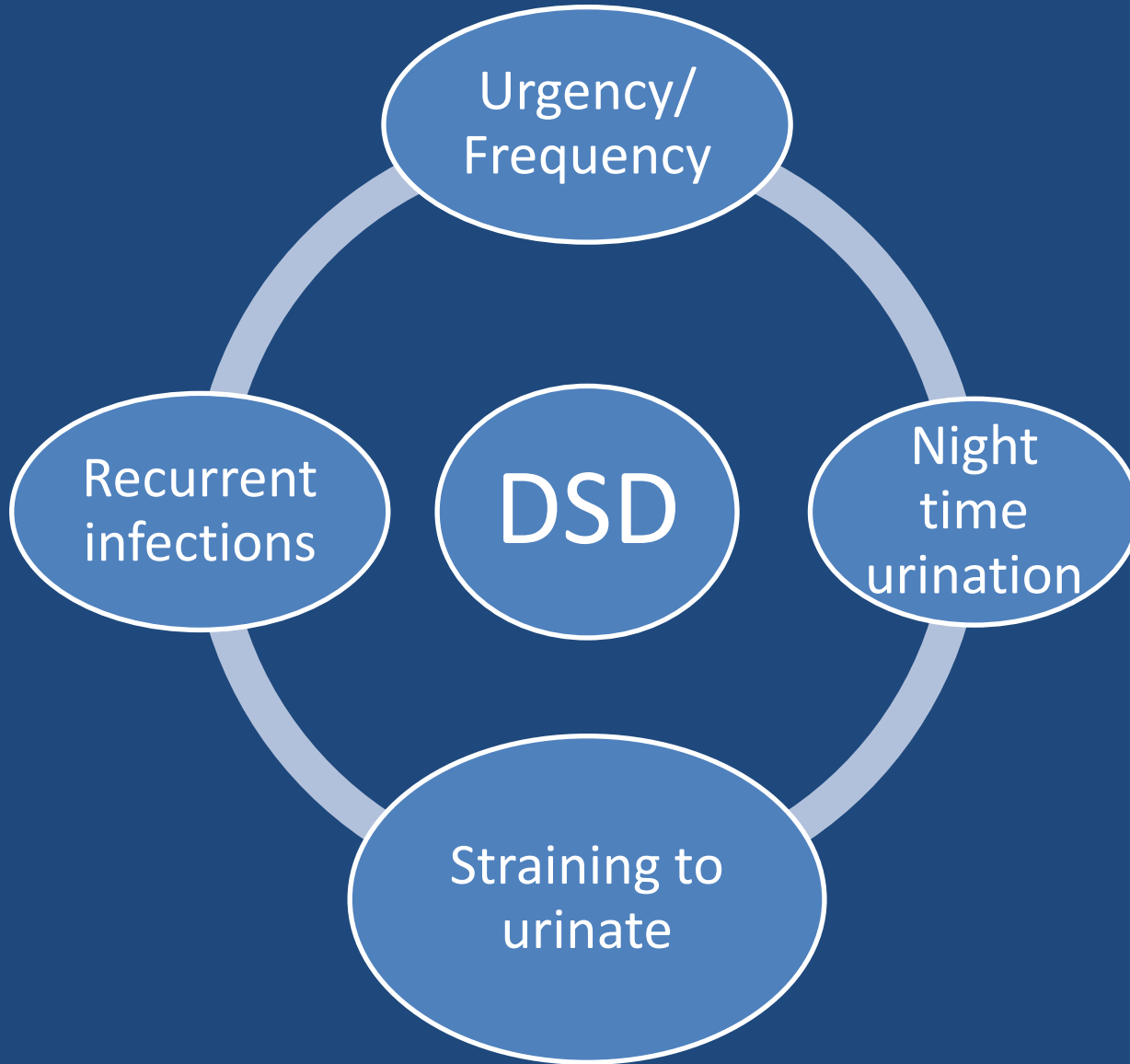
- Future FDA approval for Neuromodulation in neurogenic bladder patients

What is Detrusor Sphincter Dyssynergia?

- Inability to empty your bladder due to neurologic disease
- Diagnosed with Urodynamics
- When bladder tries to empty, sphincter contracts instead of relaxes
- 20-25% of MS patients have DSD

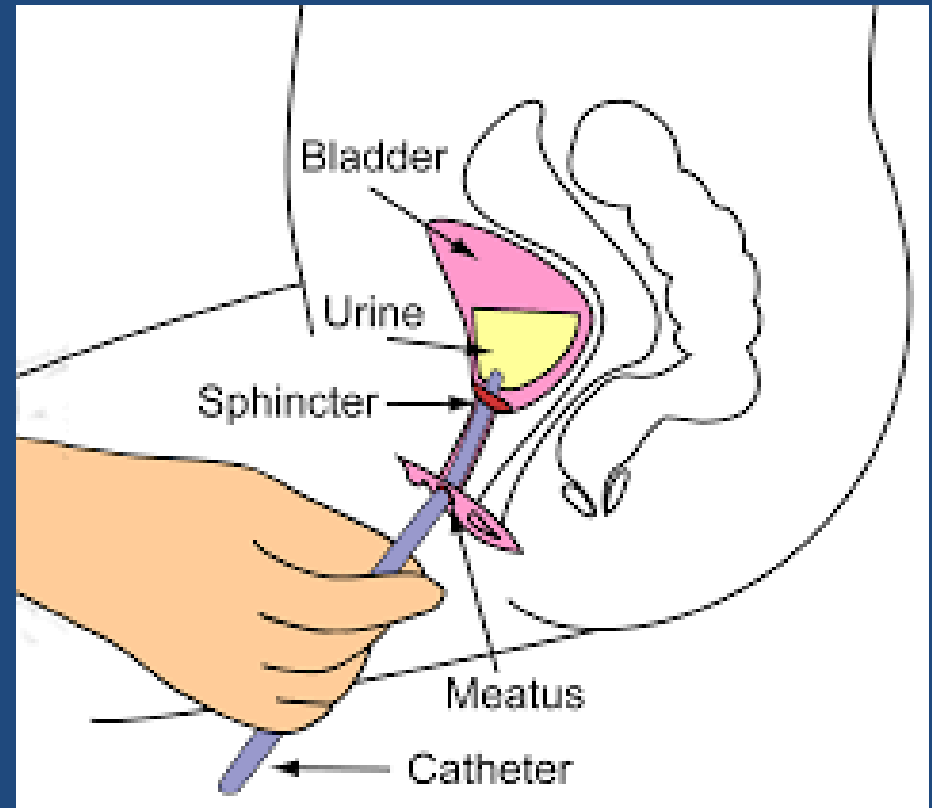


What symptoms can DSD cause?



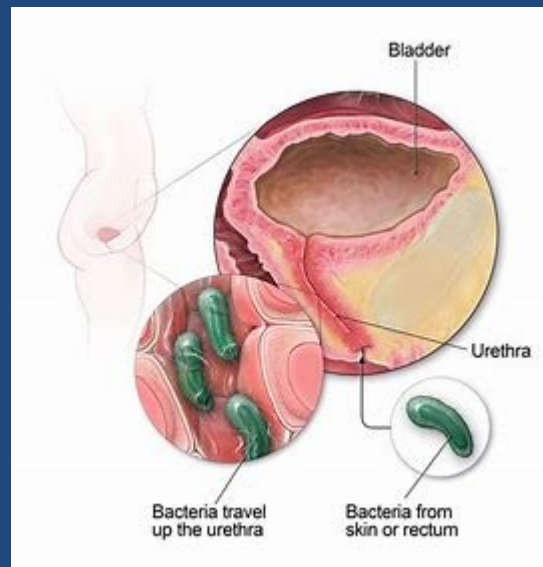
What treatments are there for DSD?

- Medications:
 - Alpha blockers
- Clean intermittent catheterization
- Surgery
 - OnabotulinumtoxinA
 - Urethral stents
 - Sphincterotomy



Urinary Tract Infections

- Most common bacterial infection
- \$3.5 Billion yearly health care costs (2015)
- E.coli is the most common bacteria causing UTI's (bacteria from the bowel flora)



Urinary Tract Infections

- Diagnosis
 - Gold Standard = URINE CULTURE!!!
- Treatment
 - Culture directed antibiotics
- Diseases to rule out:
 - Bladder cancer, stones, bladder pain syndrome

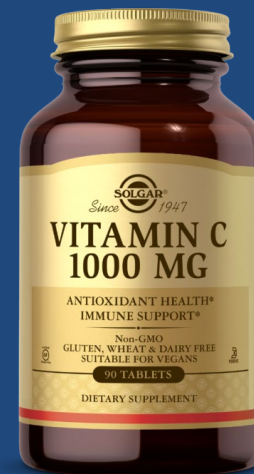


MS & Urinary Tract Infections

- Patients with MS are more likely to have severe infection or hospitalization with UTI
- UTI may increase risk of MS relapse

Urinary Tract Infections

- Prevention:
 - Adequate hydration and regular voiding
 - Effective bladder emptying
 - Bowel regimen
 - Vaginal estrogen replacement (in menopausal patients)
 - Cranberry supplements
 - Vitamin C
 - Probiotics
 - D mannose



Urinary Tract Infections

- More advanced options for prevention:
 - Methenamine
 - Daily antibiotics
 - Vaccine (not available in the US yet...)

Conclusion

- MS can cause a variety of bladder symptoms
- Education and Behavioral Management are first line treatment
- The benefit of medications is increased if behavioral management is also done
- Multiple treatments options are available if first line treatments do not relieve symptoms
- Recurrent Urinary tract infections are common and can exacerbate MS symptoms

Resources

- <https://www.urologyhealth.org/>
- https://nms2cdn.azureedge.net/cmssite/nationalmssociety/media/msnationalfiles/brochures/clinical_bulletin_bladder-dysfunction-in-ms.pdf
- https://nms2cdn.azureedge.net/cmssite/nationalmssociety/media/msnationalfiles/brochures/clinical_bulletin_bowel-management-in-ms.pdf

Survey

Please take the program survey in the TRAIN or TMS websites. This will give you access to your CME/CE certificate.

Non-VA: www.vha.train.org

VA: www.tms.va.gov

What's On Your Mind?

Please type your question into the ? Q&A area in the lower right corner of your screen.



**Thank you and please join us for the
next webinar on November 2, 2022!**

The Role of MRI in MS
Francesca Bagnato, MD, PhD

www.nationalMSSociety.org/currenttopics
www.va.gov/MS/products/CME_CEU_calls