

# Parkinson's and the Urinary Tract:

## How Parkinson's Affects Your Bladder Health

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# Overview

- Definitions
- Common Urinary Issues in Parkinson's
- Other Common Geriatric Urinary Problems
- Evaluation
- Treatment Options

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# Definitions

- PD – Parkinson’s Disease
- Overactive bladder/Neurogenic bladder
  - Syndrome of increased urinary frequency, strong sense of urgency, urinary leakage with strong urge, night-time urination
- Nocturia
  - Waking to urinate more than 1x per night

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## Common Urinary Disorders in PD

- Urinary problems are identified in 35 – 70% of patients
- Most commonly, combination of overactive bladder symptoms – nocturia, frequency, urgency, incontinence w/ urgency
  - Nocturia – 86%
  - Increased frequency of urination – 71%
  - Strong, sometimes irrepressible urge – 68%

## Common Urinary Disorders in PD

- In men, may also have:
  - slow start
  - weak stream
  - incomplete emptying
  - needing to push to empty
- Average time to onset after diagnosis of PD
  - 5 years

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# Common Urinary Disorders in PD

- Why?
- Normally, parts of the brain inhibit early sensation of bladder filling and contraction
- In PD, neurons responsible for this inhibition are lost



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# Common Urinary Disorders in PD

- Why?
- Additionally, cogwheel rigidity may occur in the urinary sphincter = Slow to relax and open

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# Common Urinary Disorders with Aging

- Nocturia
- Enlarged Prostate with Urinary Symptoms
- Urinary Incontinence

# Common Urinary Disorders with Aging

- Nocturia – surprisingly complex
  - Often multifactorial
    - Medications
    - Behavior – Fluids, alcohol
    - Cardiac
    - Kidney disorders
    - Sleep Disorders
    - Sleep Apnea
    - BPH
    - Overactive Bladder, Neurogenic Bladder

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# Overview

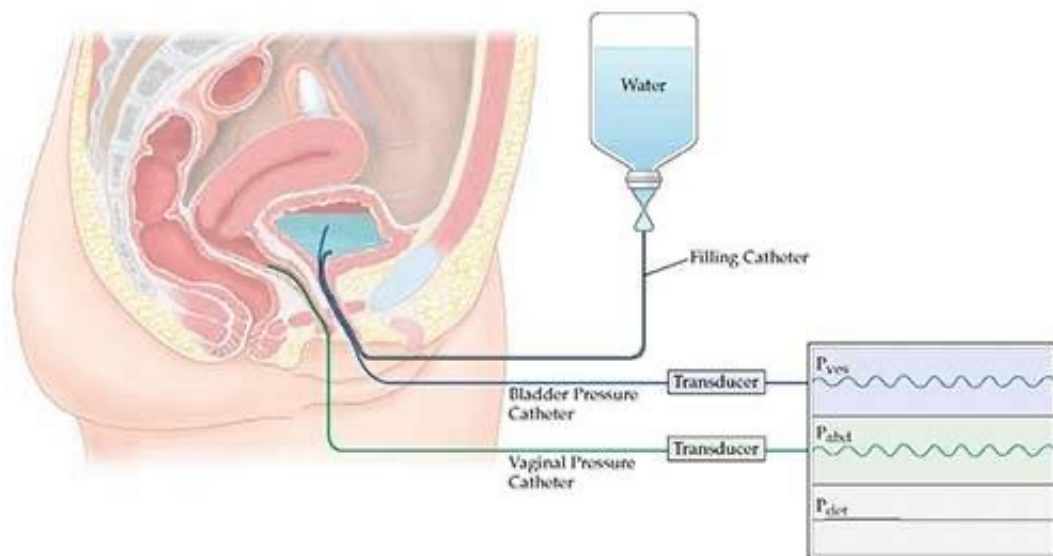
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## Evaluation – What to Expect

- History and Physical Exam
  - Prostate exam in men
- Urinalysis
- Bladder scan – post-void residual
- Possible Voiding Diary
- Possibly Urodynamics

# Evaluation – What to Expect

- Urodynamics



## Evaluation – MSA

- Important to differentiate Multiple Systems Atrophy (MSA) from Parkinson's Disease
- Parkinsonism w/ pronounced urinary symptoms and autonomic dysfunction
- Patient's w/ MSA should not have surgery for an enlarged prostate
  - Will cause significant incontinence



## Evaluation – MSA

- Urinary symptoms early in disease course
  - <2 years MSA vs ~5 years with PD
- Urinary symptoms more severe, harder to treat
- Incontinence more common
  - 73% MSA vs 15% PD
- Early erectile dysfunction in men
- Decreased sweating
- Orthostatic hypotension

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## Treatment Options – Motor-Oriented Treatments

- Unlike motor disorders, urinary symptoms tend not to respond to levodopa
- May actually be exacerbated by bromocriptine
- Conflicting data on whether deep brain stimulation helps with urinary symptoms

# Treatment Options – Medications

- Anticholinergic medications
  - Oxybutynin (Ditropan)
  - Solifenacin (Vesicare)
  - Trospium (Sanctura)
  
- Beta-3 Agonists
  - Mirabegron (Myrbetriq)
  - Vibegron (Gemtesa)

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## Treatment Options – Medications

- Anticholinergic medications
  - Inhibit bladder contractions
  - Promote larger bladder volume, less frequent urination
  - Mainstay of overactive bladder treatment for years

## Treatment Options – Medications

- Anticholinergic medications
  - Side effects:
    - Constipation
    - Dry mouth
    - Dry eyes
    - Confusion, cognitive decline
      - Trospium (Sanctura) may avoid this SE

## Treatment Options – Medications

- Beta-3 Agonists
  - Newer (= more expensive)
  - Also works to improve bladder capacity, decrease frequency of urination
  - Significantly better tolerated than anticholinergics

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## Treatment Options – Medications

- Beta-3 Agonists
  - Can increase blood pressure
    - Usually minimal
    - Do not use if you need 3 or more blood pressure drugs
  - Can be cost prohibitive



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## Treatment Options – If Medications Fail

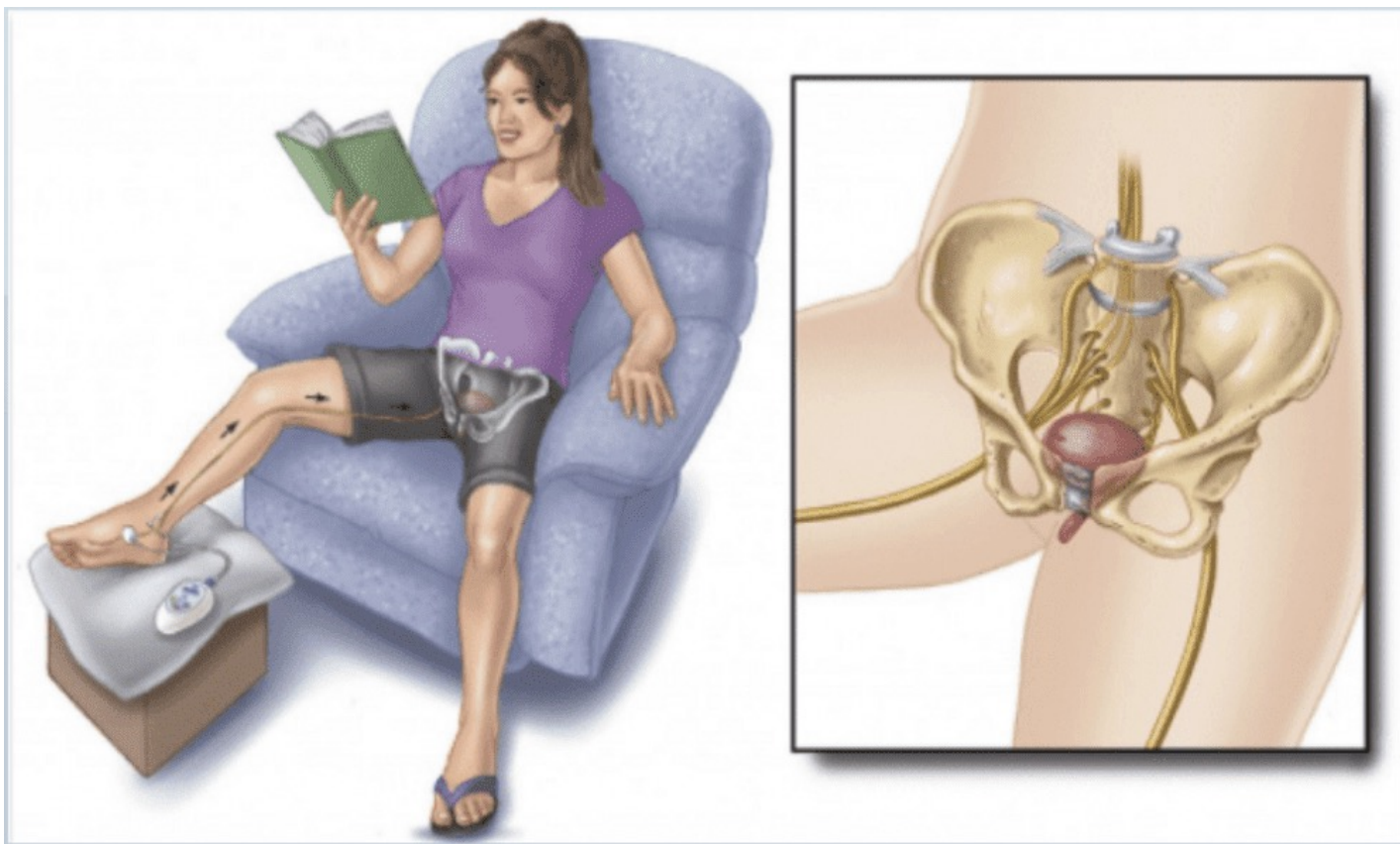
- Bladder Botox
- Posterior Tibial Nerve Stimulation

## Treatment Options – If Medications Fail

- Bladder Botox
  - Procedure (sometimes under local anesthesia in office, sometimes twilight anesthesia in OR)
  - Tend to get 6-9 mo of benefit in PD
    - Repeat procedures
  - Temporary urinary retention 10-15%
    - Must be able to self catheterize

## Treatment Options – If Medications Fail

- Posterior Tibial Nerve Stimulation



## Treatment Options – If Medications Fail

- Posterior Tibial Nerve Stimulation
  - Requires multiple sessions, 30min each
    - 12 weekly sessions initially
    - 1 session per month maintenance

# Thank you for your time

## Resources:

1. Stanford Parkinson's Community Outreach  
- <https://med.stanford.edu/parkinsons/symptoms-PD/incontinence.html>
2. American Parkinson Disease Association
3. Parkinson's Foundation