

Managing Urinary Challenges In Parkinson Disease

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MedStar Health

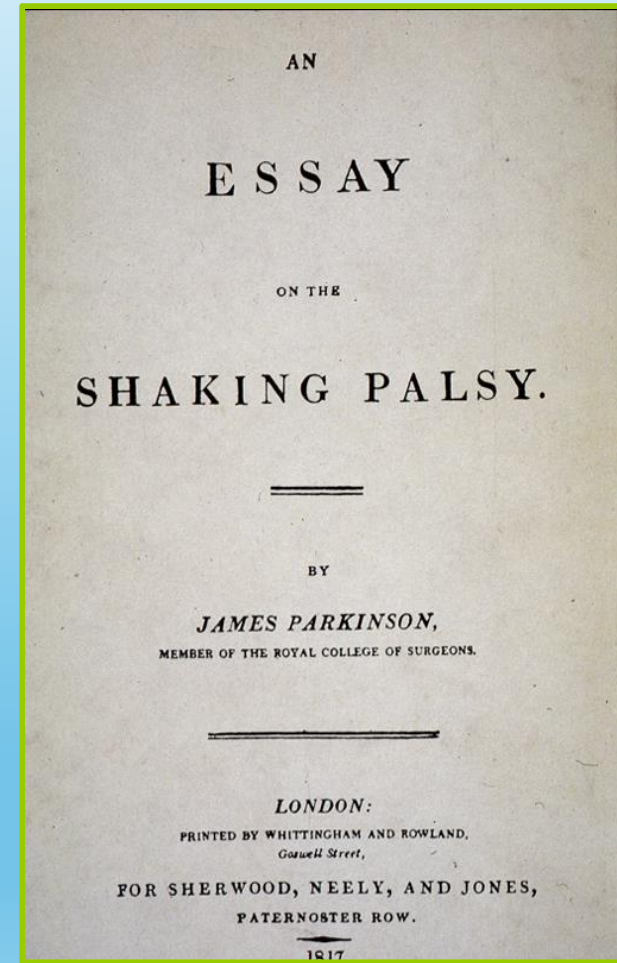
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Objectives

- Understand the pathophysiology of PD
- Motor and non-motor symptoms in PD
- Understand the treatments for the urinary challenges in PD

What is Parkinson's Disease?

- 1817: James Parkinson
 - “An Essay on the Shaking Palsy”
- Diagnosis requires 2 of 3:
 - Bradykinesia; rigidity; tremor (rest)
- Other signs: Masked facies; hypohonia; micrographia; flexed posture; swallowing difficulties; shuffling gait; hesitancy and freezing gait.
- Onset: Insidious, unilateral progressing to bilateral.
- PD most likely multiple disorders



Cardinal Features and Clinical Manifestations: Traditional Definition

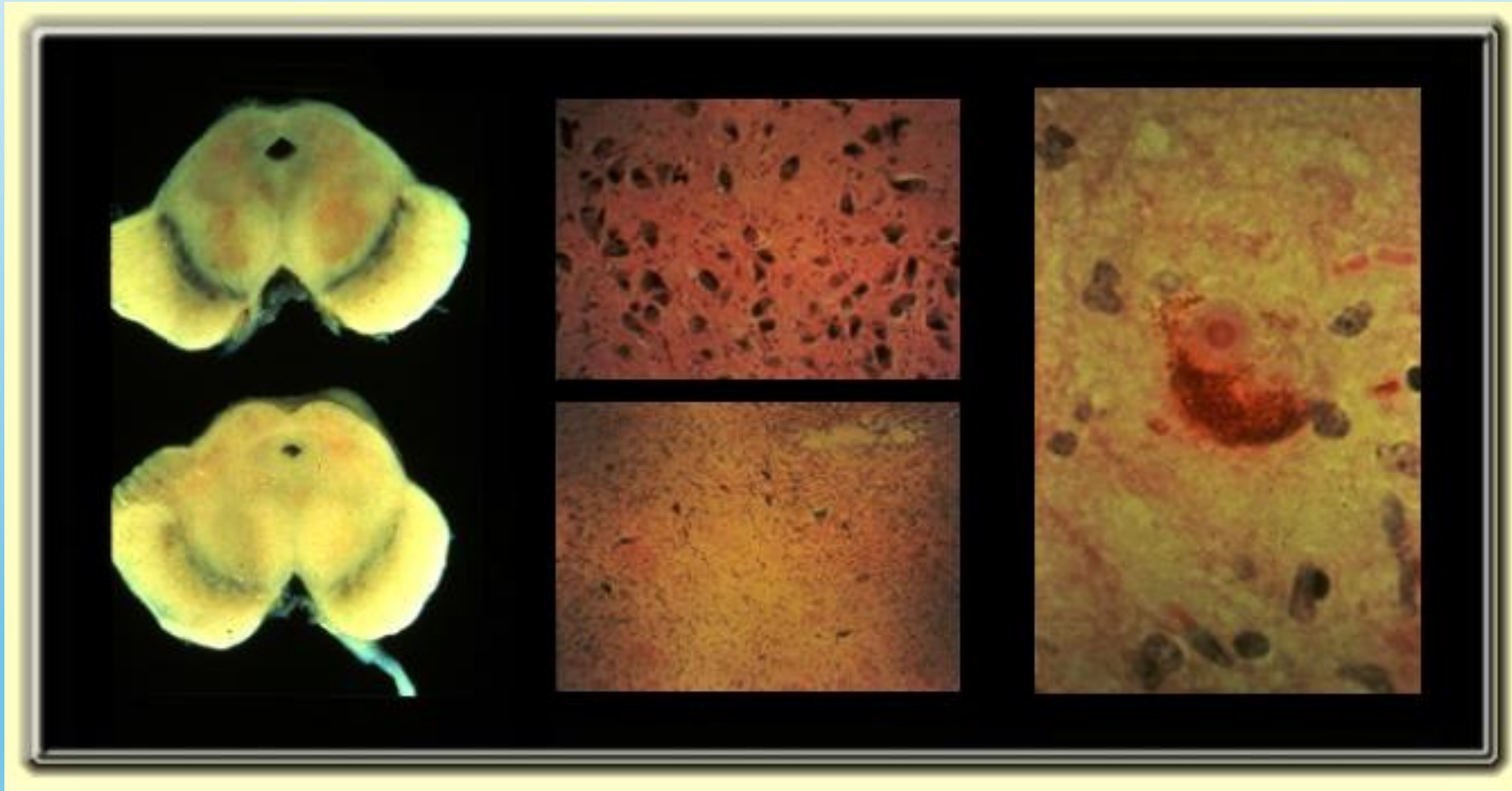
Motor Signs

- Bradykinesia
- Tremor at rest
- Rigidity
- Postural instability

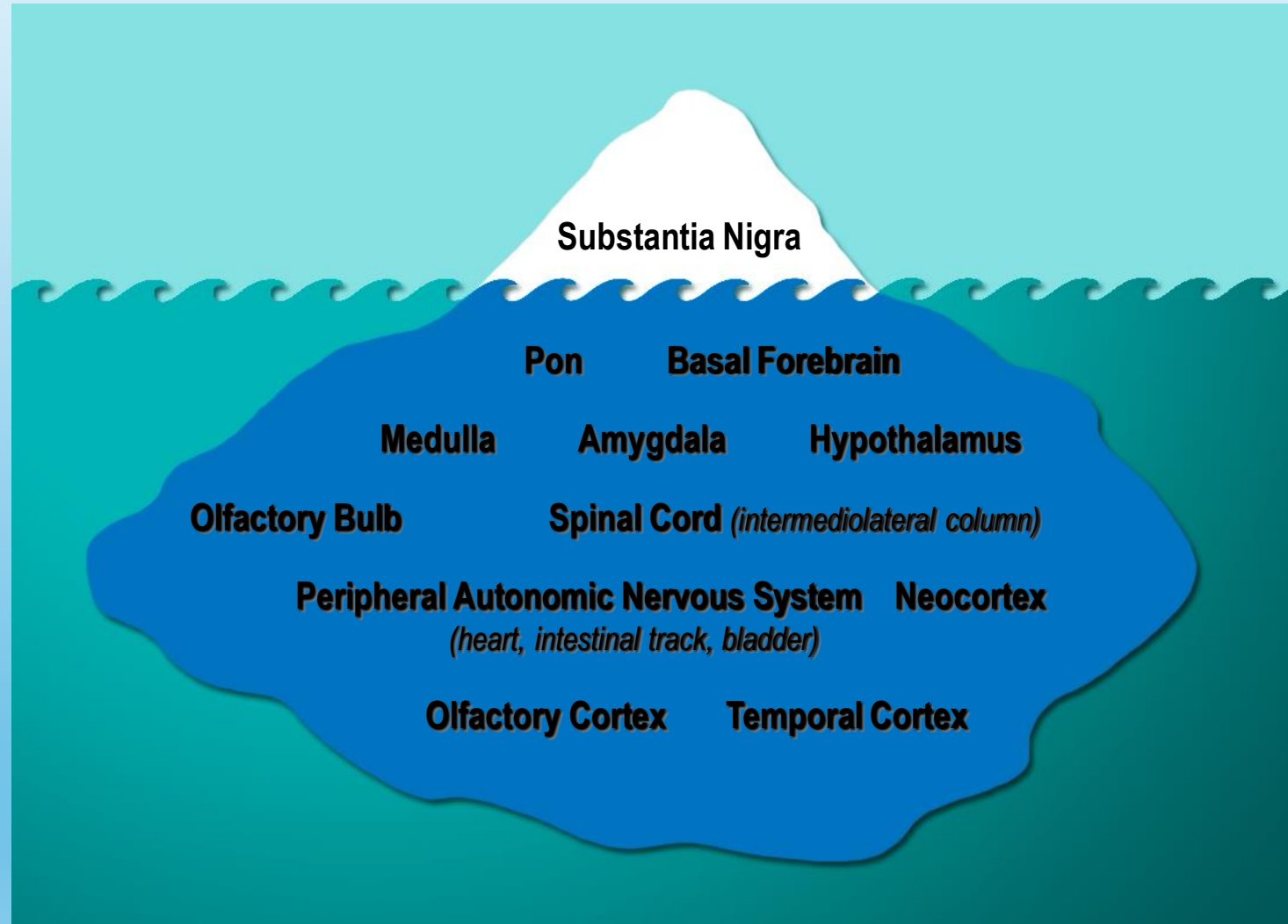
Clinical Manifestations

- Decreased arm swing
- Hypomimia
- Hypophonia
- Micrographia

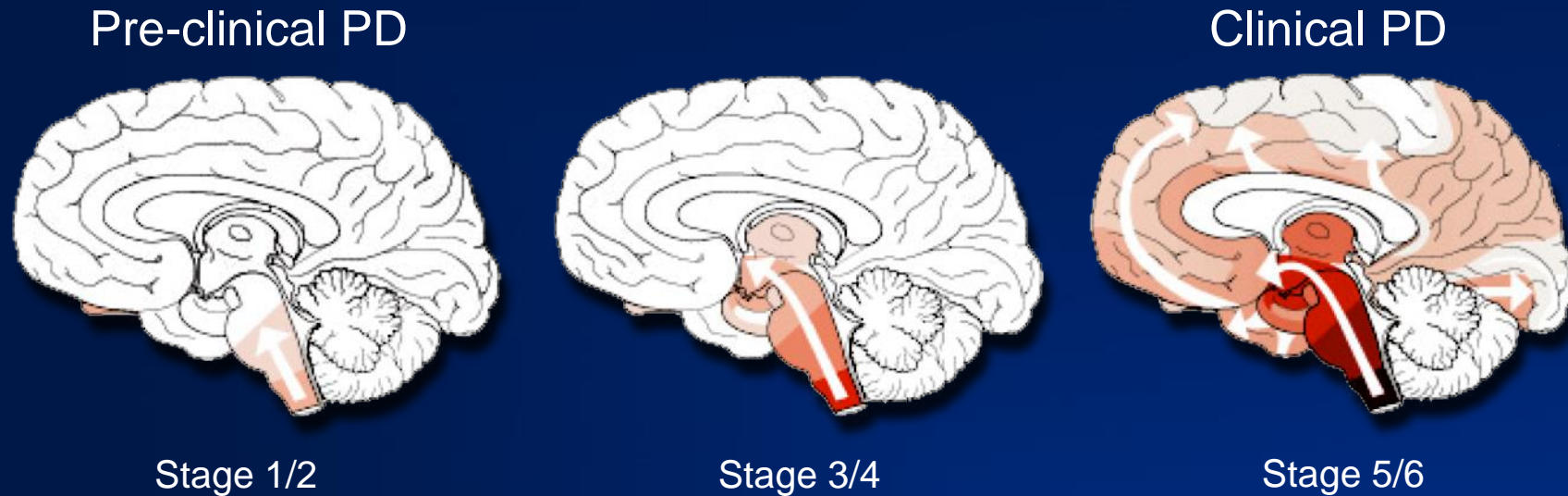
Pathology of Parkinson's Disease



The Parkinson's Complex



Evolution of Lewy Body Pathology



PD-related Lewy body pathology evolves in predictable stages. According to the staging system of Braak, Lewy bodies (LB) first form within in the olfactory bulb and dorsal motor nucleus of the vagal nerve (Stage 1). In Stages 2 and 3, LB pathology expands from these induction sites into additional brain stem nuclei (e.g. locus coeruleus and substantia nigra) and then into the amygdala. In Stages 5 to 6, the pathology extends into the cerebral cortex. Clinical symptoms arise during Stages 4 to 6, when the pathology involves significant regions of the substantia nigra and related brain areas.

Non-motor Features of PD

- **Neuro-psychiatric and cognitive:**

- Depression
- Anxiety
- Psychosis
- Dementia
- Apathy
- Fatigue
- Sleep disturbance

- **Autonomic:**

- Constipation
- Hyperhidrosis
- Urinary dysfunction
Sexual dysfunction
- Sialorrhea
- nOH

- **Sensory**

- Pain
- Smell loss

Common Nonmotor Problems in PD

- Depression
- Cognitive Dysfunction/Dementia
- Drooling
- Sleep Disorders
- Falls/ Balance Problems
- Motor Fluctuations
- Constipation
- Pain
- Orthostatic Hypotension
- Hypophonia
- Urinary Dysfunction

Urinary Dysfunction



- Voiding difficulties in up to 70% of patients
- Common symptoms:
 - Increased frequency of urination
 - frequent urination at night
 - Urge incontinence (or Overflow)
 - Bladder emptying difficulties
 - Painful Urination
- Bladder symptoms correlate with Dopamine Deficiency
- Detrusor muscle overactivity in PD
- Worsening frequency can be a sign of wearing off

URGENCY
NOCTURIA
INCONTINENCE
RETENTION
DYSURIA

Causes of Urinary Issues in Parkinson's Disease

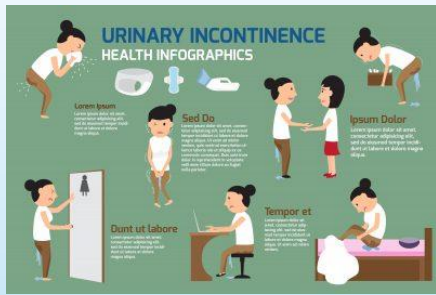
- **Autonomic Dysfunction:**
 - Parkinson's affects the autonomic nervous system, which controls involuntary functions such as bladder function.
- **Motor Symptoms Impacting Bladder Control:**
 - Bradykinesia and rigidity make it difficult to get to the bathroom on time or in a timely manner.
- **Dopamine Deficiency:**
 - Dopamine depletion can affect the brain's ability to coordinate bladder function.
- **Medications:**
 - Certain PD medications (e.g., dopaminergic drugs) can exacerbate urinary problems, causing side effects such as increased urgency or retention.

Impact of Urinary Symptoms on Quality of Life

- **Social and Emotional Impact:**
 - Embarrassment, anxiety, and isolation due to urinary issues.
 - Concerns over incontinence can affect personal relationships and social activities.
- **Sleep Disturbances:**
 - Nocturia contributes to poor sleep quality, increasing fatigue and impacting daily functioning.
- **Mobility and Independence:**
 - Urinary urgency can lead to mobility challenges and fear of accidents.
- **May result in increased caregiver burden**

Diagnosis of Urinary Problems in PD

- **Patient History:**
 - Detailed assessment of urinary symptoms (frequency, urgency, incontinence).
- **Bladder Diaries:**
 - Patients record times, volumes, and frequency of urination.
- **Urodynamic Testing:**
 - Tests to assess bladder function and identify issues like retention, urgency, and incontinence.
- **Exclusion of Other Causes:**
 - Rule out other causes of urinary symptoms such as urinary tract infections (UTIs) or prostate issues.



Urinary Dysfunction Treatments

- Referral to Urologist
- PT: Incontinence Physical Therapy
- Neurogenic Bladder treatments
- Caution with Anti-cholinergics
 - Can cause confusion
 - Delirium
 - Hallucinations
- BTX
- Stimulators now FDA cleared for Neurogenic Bladders

Table 3
Detrusor overactivity treatment recommendations in Parkinson's disease

<u>Therapy</u>	<u>Level of Evidence</u>
Bladder training	1
Anticholinergics	2 ²⁵
Botulinum toxin	2 ²⁶
Surgical intervention	2 ²⁷

Data from Sakakibara R, Panicker J, Finazzi-Agro E, et al. A guideline for the management of bladder dysfunction in Parkinson's disease and other gait disorders. *Neurourol*



Incontinence Physical Therapy

Physical therapists design treatment programs to improve pelvic floor muscle strength and help people gain control over the condition.

Physical therapists are movement experts. They improve quality of life through hands-on care, patient education, and prescribed movement.



Non-Pharmacological Approaches

- **Scheduled Bathroom Visits:**
 - Encouraging regular toilet use to reduce urgency.
- **Pelvic Floor Exercises:**
 - Strengthening the pelvic floor muscles may help with incontinence.
- **Bladder Training:**
 - Gradual retraining of the bladder to increase capacity and control.

Pharmacological Treatments

- **Anticholinergics (e.g., oxybutynin):**
 - Helps reduce bladder urgency and frequency by blocking acetylcholine.
- **Beta-3 Agonists (e.g., mirabegron):**
 - Relax the bladder muscles and increase bladder capacity.
- **Dopamine Agonists:**
 - Modifying PD medications to improve motor and bladder control.
- **Alpha-blockers (e.g., tamsulosin):**
 - Helps relax the muscles of the bladder neck and prostate, improving urine flow.

Advanced Treatment Options

- **Botulinum Toxin (Botox) Injections:**

- Injections into the bladder muscle can help reduce overactive bladder symptoms.

- **Sacral Nerve Stimulation:**

- Electrical stimulation of the nerves controlling bladder function may improve symptoms.

- **Surgical Interventions:**

- In rare cases, surgery such as bladder augmentation may be required if symptoms are severe and unmanageable.

Management of Nocturia and Sleep Disruption

- **Lifestyle Adjustments:**
 - Limiting fluid intake in the evening to reduce the frequency of nighttime urination.
- **Use of Medications:**
 - **Desmopressin:**
 - A hormone that can help reduce nocturnal urination by increasing water retention.
- **Optimizing PD Medications:**
 - Adjusting Parkinson's medications to reduce nighttime symptoms and improve sleep
 - Advanced PD medications can help to minimize wearing off

How can Caregivers and Carepartners help?

- **Education and Support:**

- Caregivers should be educated about urinary symptoms and treatment options.

- **Assisting with Mobility and Bathroom Access:**

- Help patients access the bathroom or use adult incontinence products as necessary.

- **Emotional Support:**

- Provide emotional reassurance and reduce anxiety

SUMMARY

- **Summary of Urinary Challenges in PD:**
 - Urinary symptoms are common in Parkinson's disease and can significantly affect the quality of life.
- **Importance of Early Intervention and Tailored Treatment:**
 - Prompt diagnosis and appropriate treatment options can improve symptoms and enhance patient well-being.
- **Future Directions:**
 - Ongoing research into non-motor symptoms like urinary dysfunction and new therapies for better management.