

Diagnosis and Initial Steps in the Management of PD

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How to Diagnose Parkinson's Disease?



- **History and Clinical Examination**
- Imaging
- Labwork?

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History Clues

- ❖ Progressive slowness of motion observed by family or members
 - Clumsiness
 - Small handwriting
 - Shuffling gait
- ❖ Asymmetric shaking of any limb at rest
- ❖ No medications that block dopamine
- ❖ **No Red Flags**



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Red Flags

- ❖ Rapid progression
 - Use of wheelchair or significant gait assistance in less than 5 years.
 - Significant dysphagia in less than 5 years
 - Early falls (<3 years) – More than once a year
- ❖ Severe autonomic failure
 - Urinary incontinence
 - Orthostatic Hypotension



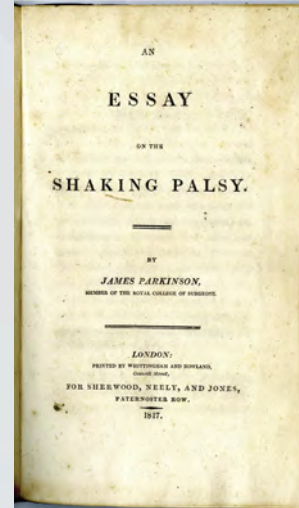
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Clinical Examination

➤ Bradykinesia – Slowness of motion

Plus at least 1 of these:

- Resting Tremor
- Gait problems
- Muscle rigidity (“cogwheeling”)



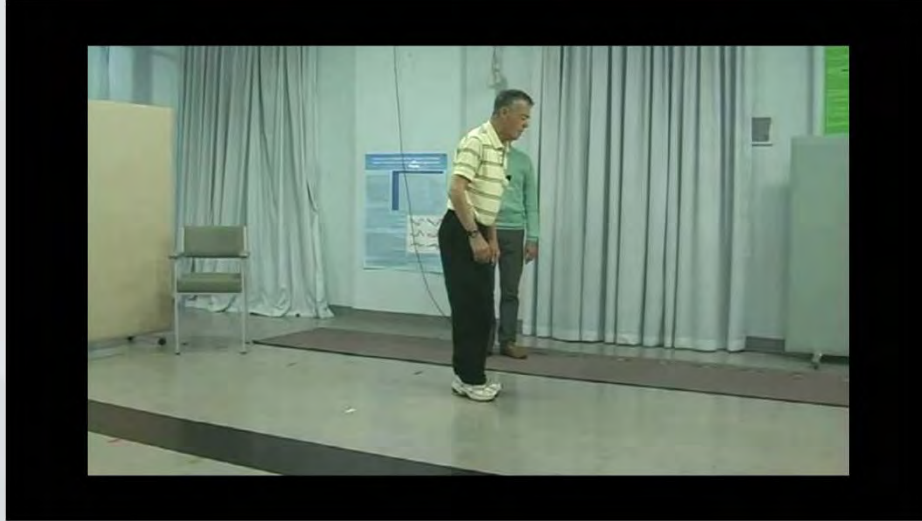
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Resting Tremor



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Gait Problems and Bradykinesia



Iansek R, Danoudis M. Freezing of Gait in Parkinson's Disease: Its Pathophysiology and Pragmatic Approaches to Management. *Mov Disord Clin Pract.* 2017 May-Jun; 4(3): 290-297.

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Non-motor Symptoms

- ❖ Loss of sense of smell (anosmia)
- ❖ Difficulty Sleeping
 - REM Sleep Behavior Disorder
- ❖ Mood problems:
 - Depression
 - Anxiety
 - Apathy



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REVIEW


CME

MDS Clinical Diagnostic Criteria for Parkinson's Disease

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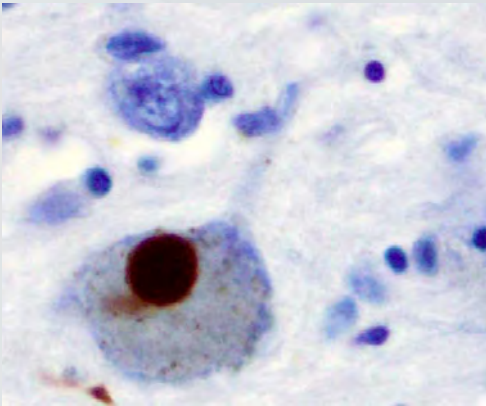


Pathology

Parkinson's Disease is considered a "synucleinopathy"

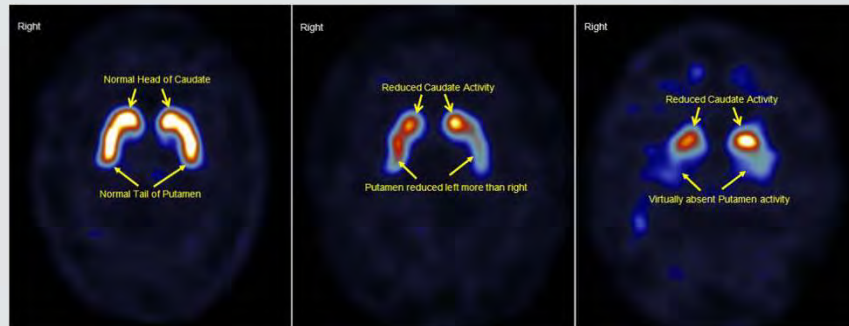
The **gold standard of diagnosis** is the finding of alpha-synuclein protein aggregation in nerve cells (Lewy Bodies) in specific parts of the brain.

There are other synucleinopathies



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Imaging – DAT Scan



DaT SCANS WILL ONLY BE HELPFUL TO DEFINE PRIMARY FROM SECONDARY PARKINSONISMS

THE CLINICAL CORRELATION HERE IS **MORE IMPORTANT**

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Labwork?

There is no specific lab test that will 100% confirm or rule out Parkinson's Disease

What about...

- Skin Biopsy?
- CSF Seed Amplification Assay (SAA)?

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Labwork?

Both Skin Biopsy and CSF SAA will only determine if there is alpha-synuclein accumulation.

It does not determine disease state, disease progression, or probability of having the disease.

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Initial Management

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Checking labs...



- TSH
 - Hypothyroidism may contribute to slowness, fatigue, cognitive impairment
- Vitamins:
 - B1
 - B6
 - B12
 - D

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Imaging



If there is a concern for an atypical finding:

Brain MRI with and without Contrast

- Tumors
- Strokes
- Inflammatory lesions

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Medications

Levodopa – Converts to dopamine in the brain

Formulations:

- Carbidopa/levodopa
 - Sinemet 25/100
 - Sinemet CR 25/100 or 50/200
 - Parcopa 25/100
 - Rytary (different concentrations)



A clear and unequivocal strong response to levodopa will help with diagnosis **BUT** it does not absolutely rule out other causes

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How to start levodopa - example

Start Sinemet 25/100 –

- 1 tablet three times a day for a week then;
- 1.5 tablets three times a day for a week then;
- 2 tablets three times a day.

Make sure to take it at around the same time every day (so for instance 8am, noon and 4pm or 8am, 2pm and 8pm)

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Other initial medications to try



❖ Dopamine agonists:

- Pramipexole
- Ropinirole
- Rotigotine



❖ Monoamino-oxidase B inhibitors:

- Rasagiline (1mg daily)
- Selegiline (5mg twice a day)

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