Welcome to “ASK THE EXPERT”

Please mute your audio and enter your name and title in the chat.

This webinar will be recorded.

Join us for the "Ask the Dementia Expert" educational Lunch and Learn series. This webinar is intended for Aging Services professionals, caregivers of persons living with ADRD, and anyone with an interest in matters concerning older adults. The series will engage a dementia expert on topics related to cognitive health, dementia care, caregiving, local services and support.

Sponsored by: Johns Hopkins Geriatric Workforce Enhancement Program (JHGWEP) and MAC INC. Living Well Center of Excellence (LWCE)

April 2025
“Understanding Parkinson Disease”

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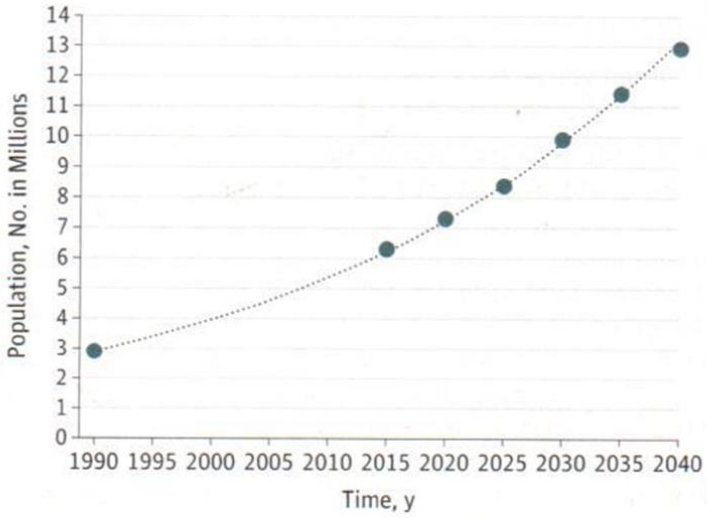
adjunct Associate Professor of Neurology
Johns Hopkins

no conflicts of interest to report

What is Parkinson disease?

Why be familiar with Parkinson disease?

Figure. Estimated and Projected Number of Individuals With Parkinson Disease, 1990-2040



Sources: Global Burden of Disease Study (1990 and 2015) and projections based on published[2] and public[3] sources.

- A very common disorder
- A complex but very treatable disorder

How is Parkinson disease diagnosed ?

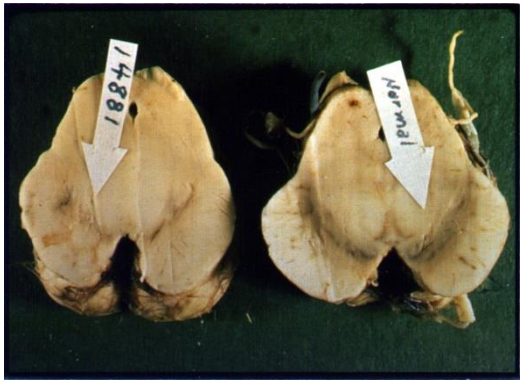
How do we diagnose Parkinson disease?

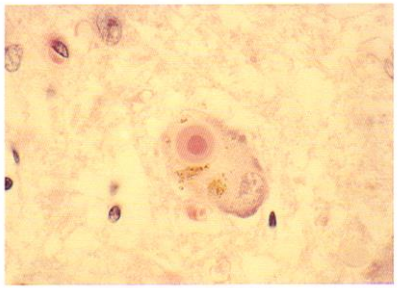
Clinical diagnosis:

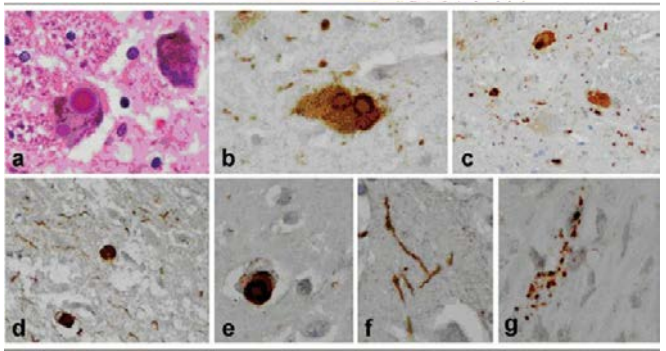
Based on abnormalities found on neurologic examination:

"movement disorder"

Pathologic diagnosis:







What are the abnormalities in movement on neurologic examination that suggest Parkinson disease ?

Persons who shake like this can be diagnosed by the doorman at the Ritz

www.alamy.com - A0G0C9

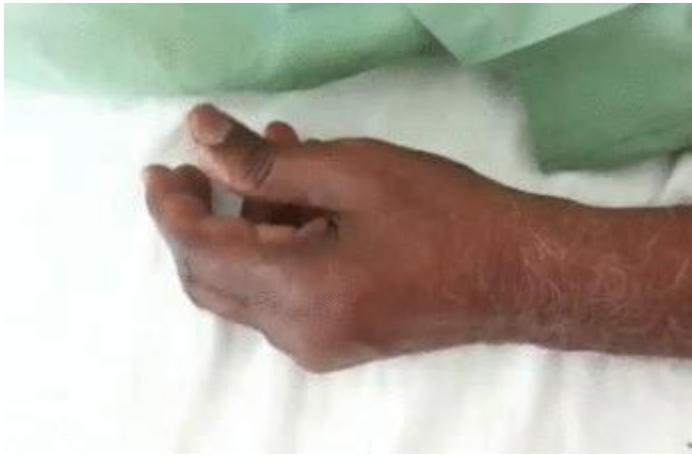
However

in most cases of PD tremor is rather subtle or very intermittent …

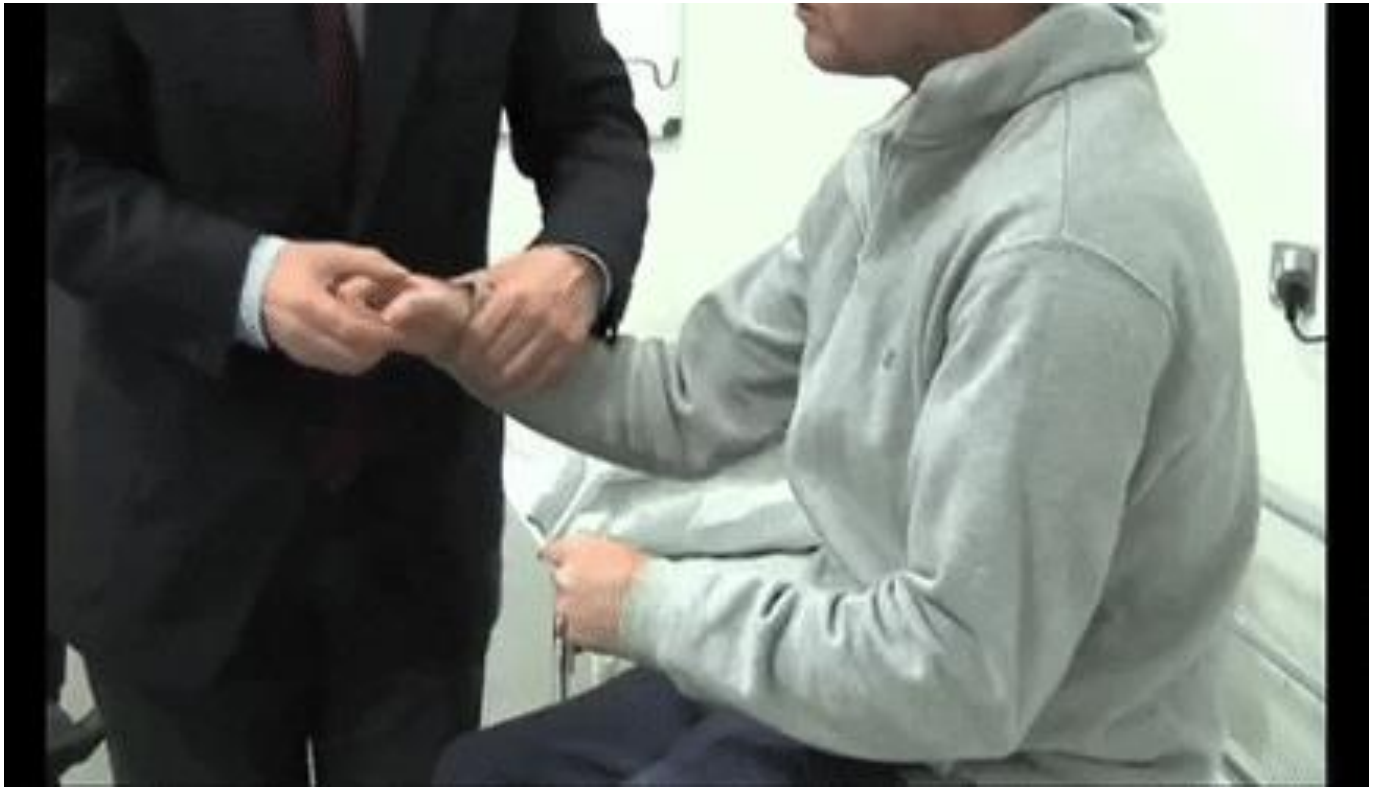
20% of PD patients have no tremor at all !

Parkinson disease “rest tremor”:

often unilateral, often intermittent, affecting hand, foot, or both



Increased muscle tone in PD ("cogwheel rigidity")

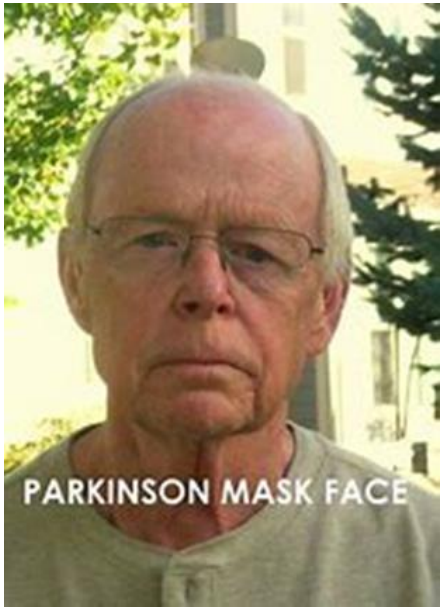


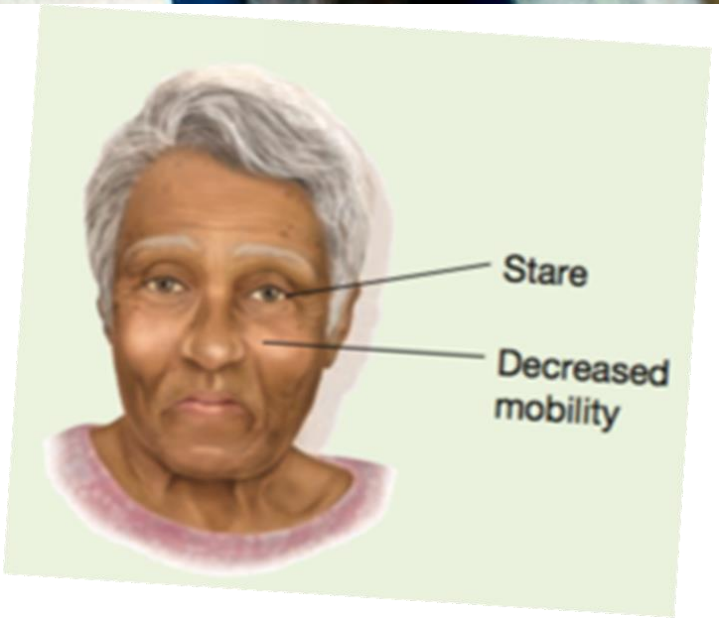
Slowed movement in PD: (bradykinesia)

What is meant by a “masked face” in Parkinson disease ?

Hint: it has nothing to do with covid-19

“hypomimia” – “masked facial expression”





Parkinsonian gait:

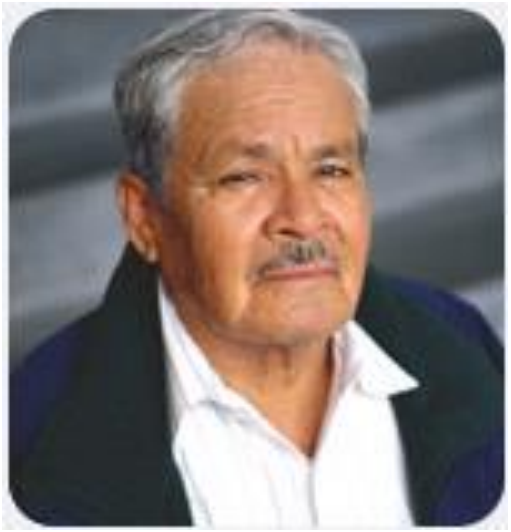
- **Difficulty arising**
- **Arises slowly**
- **Short steps**
- **Narrow base**
- **Decreased arm swing** (often unilateral)
- **“shuffling”**
- **Multistep turning**
- **Stooped posture**

We have all heard the old saying

“if you’ve seen one, you’ve seen them all”

However, if you’ve seen <u>one</u>

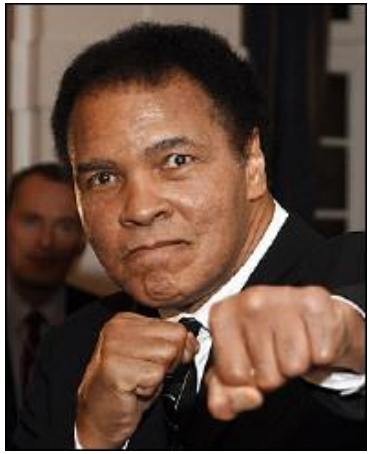
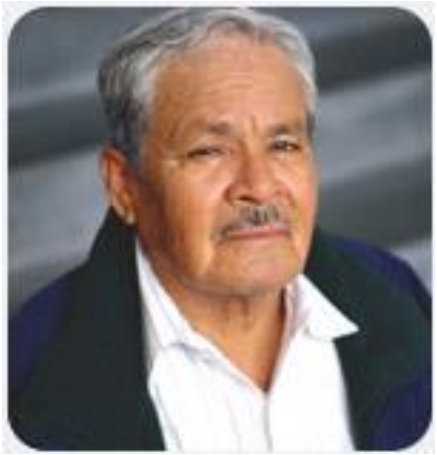
person with Parkinson disease …

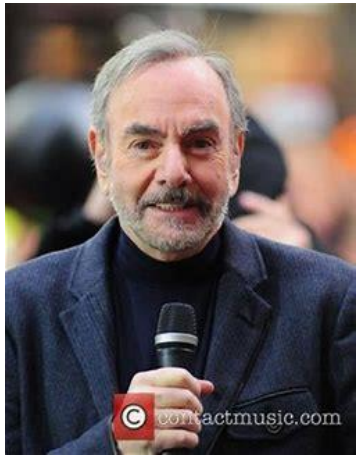


you've seen **one** person with Parkinson disease !

PD symptoms and problems vary widely,

and no two patients are exactly alike.

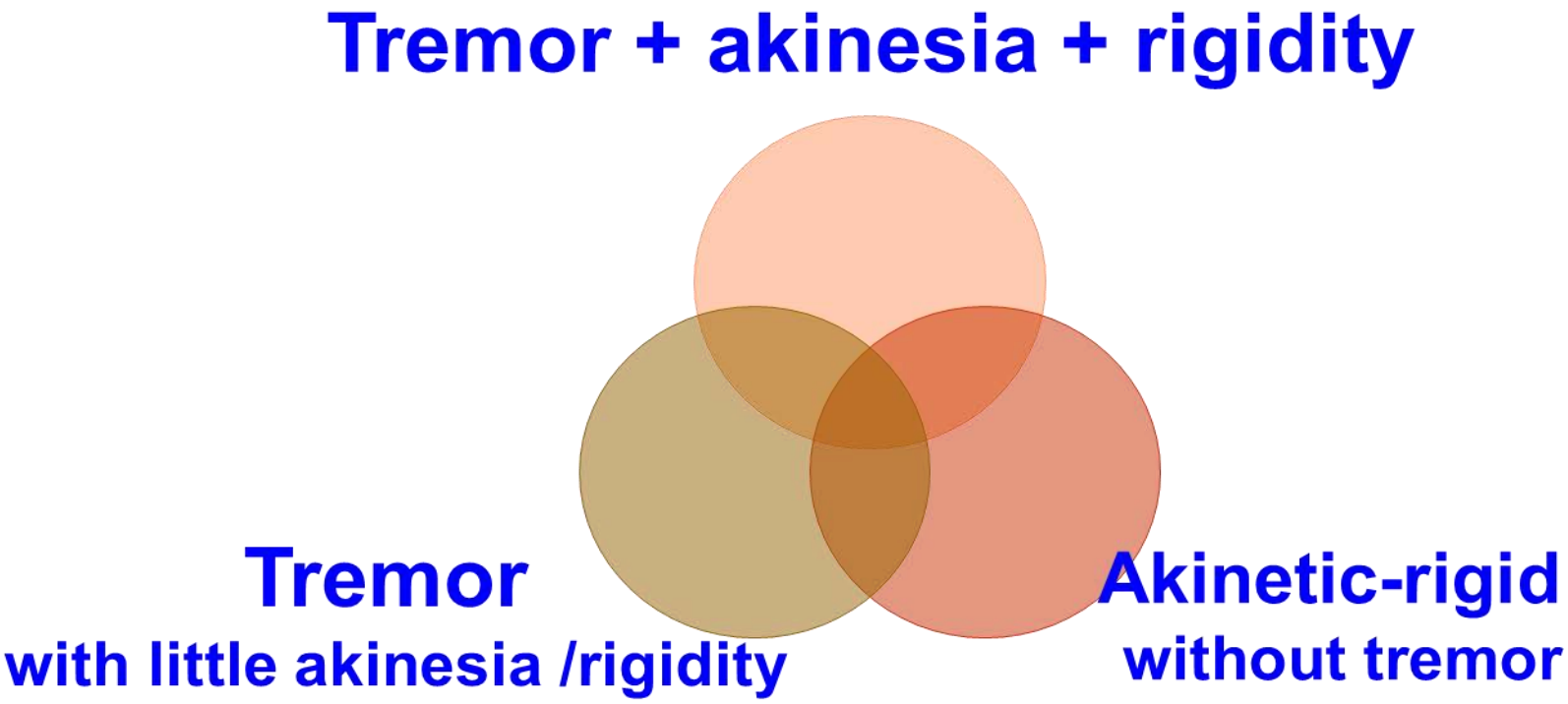






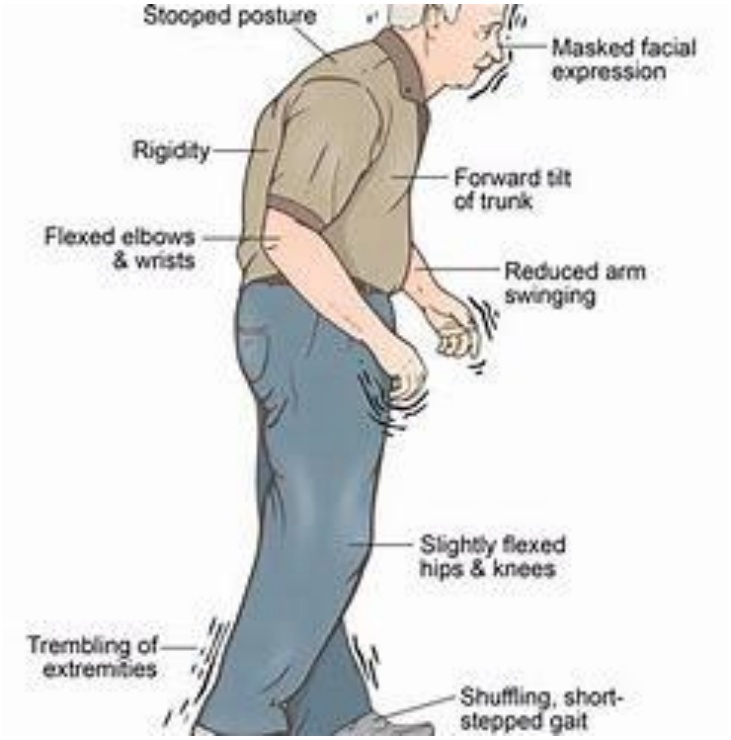


The motor symptoms of Parkinson disease are quite variable !

Clinical motor subtypes:



Does everyone who has some of these "parkinsonian" signs definitely have Parkinson disease ?



NO !

There are other disorders with signs and symptoms that can potentially mimic Parkinson disease.

What treatment is recommended for every person with Parkinson disease?

EXERCISE !

- **Long term outcomes are better in persons with PD who exercise on a regular basis.**
- **Positive benefits for mobility, dexterity, and balance**
- **Improved socialization and mental health**

Seminars Neurology 2021; 41: 189-205

many excellent activities are offered by the

Maryland Association for Parkinson Support

marylandparkinsonsupport.org

and the

Parkinson Foundation of the National Capital Area

parkinsonfoundation.org

MARYLAND ASSOCIATION FOR PARKINSON SUPPORT, INC.

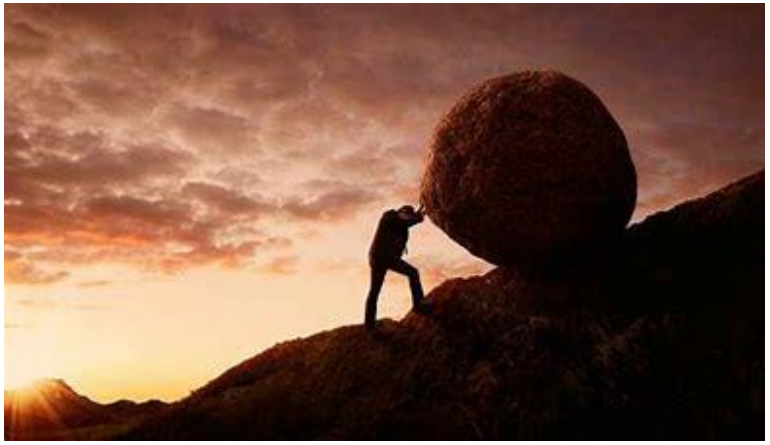
Find your way with us

PARKINSON FOUNDATION OF THE NATIONAL CAPITAL AREA

WALK OFF PARKINSON'S

Exercise programs must be tailored to the person's ability and continued to obtain benefit in PD.

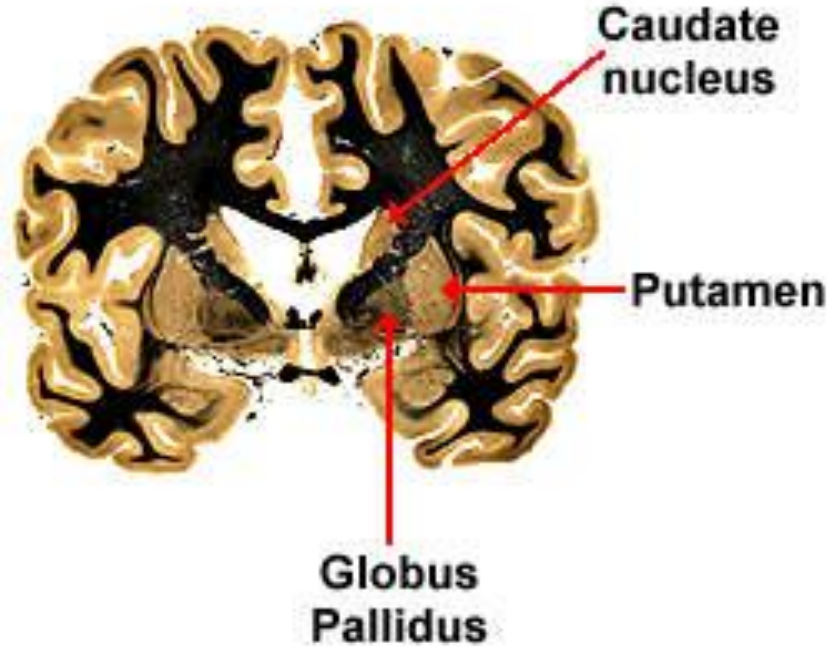
Effort isn't always rewarded…



but lack of effort is never rewarded.

What is the best medication for treating the motor symptoms of Parkinson disease?

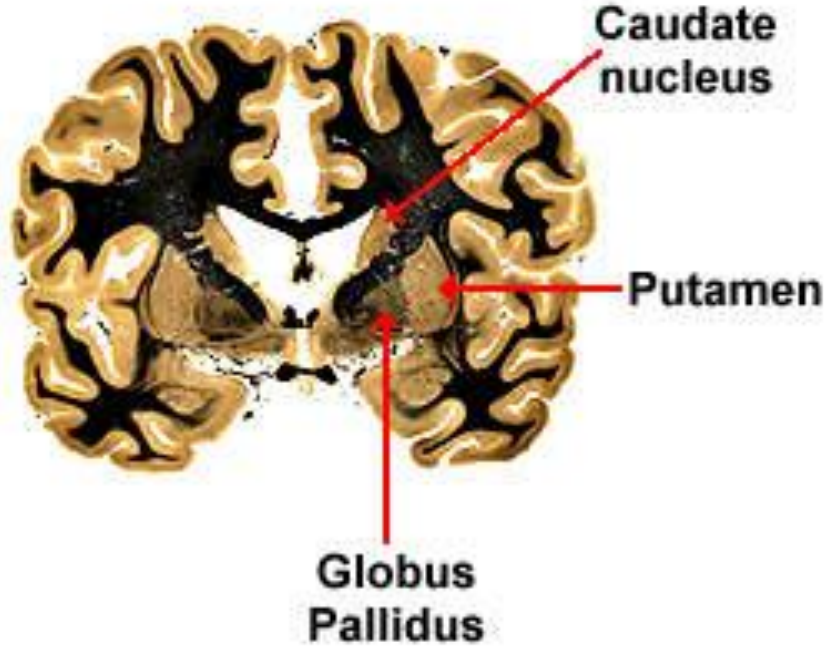
Dopamine is a major neurotransmitter in the striatum



The striatum is the area of the brain that facilitates complex sequences of movements

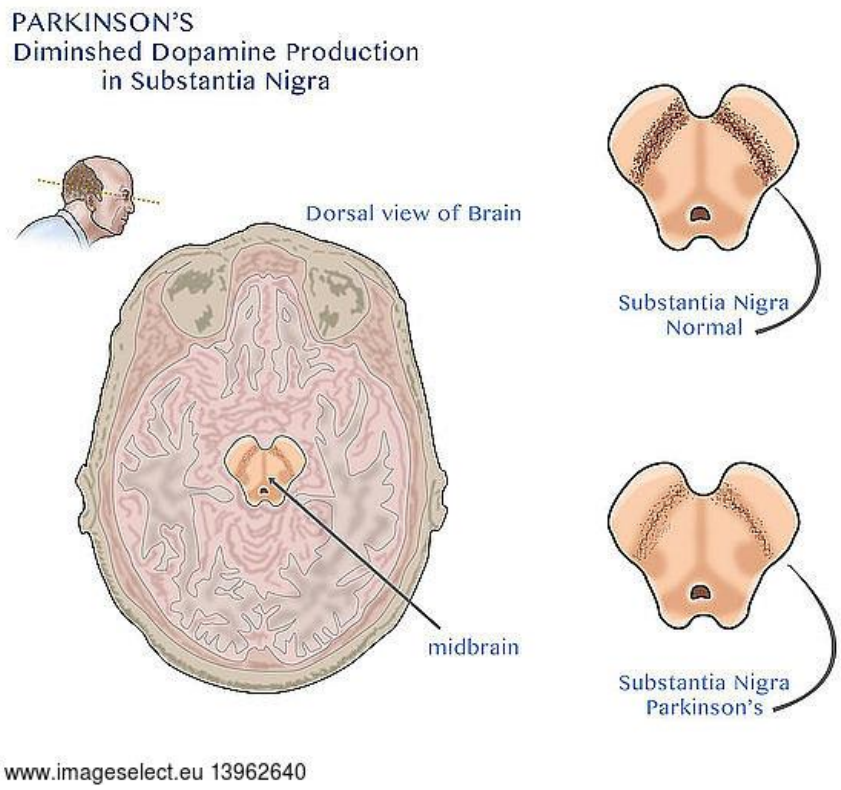
(much as the conductor facilitates the harmonious output of music from an orchestra)

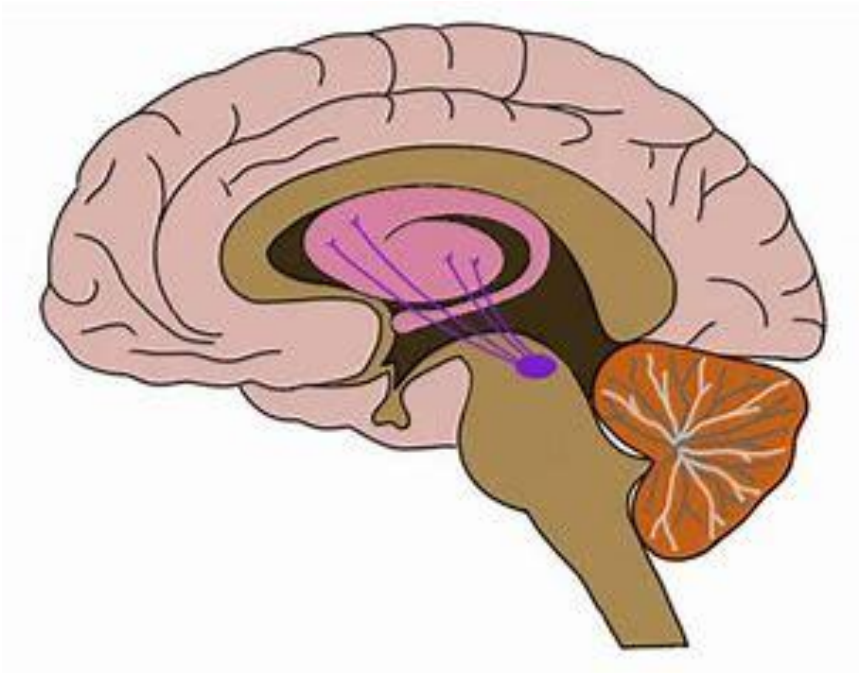
The striatum is the area of the brain that facilitates complex sequences of movement



Dopamine is an important neurotransmitter in the striatum

Dopamine producing neurons degenerate in Parkinson disease





carbidopa-levodopa in Parkinson disease

The New England
Journal of Medicine

Volume 280 FEBRUARY 13, 1969 Number 7

MODIFICATION OF PARKINSONISM – CHRONIC TREATMENT WITH L-DOPA*

GEORGE C. COTZIAS, M.D., PAUL S. PAPAVASILIOU, M.D., AND ROSEMARY GELLENE, M.D.

Levodopa replenishes brain dopamine!

“miraculous” but not a “cure”:

- **Motor symptoms improve in all cases**
- **Benefits persist throughout the course of the disease**

All persons with PD improve on levodopa, but

Do not over-medicate patients

Do not under-medicate patients

Doses must be titrated:

- **Monitor for changes in the patient's target symptoms**
- **Monitor for side effects**

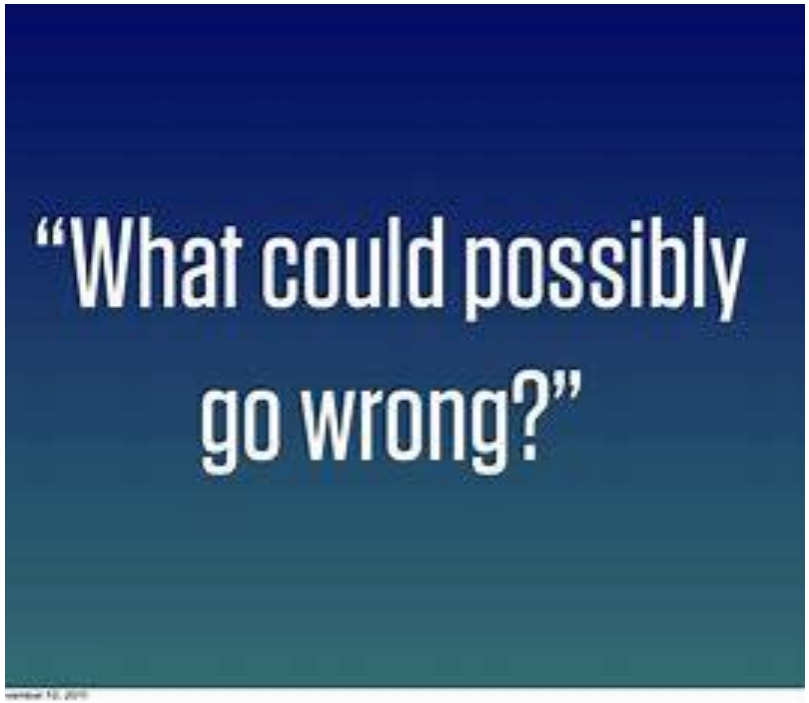
What a realistic goal when treating Parkinson disease?

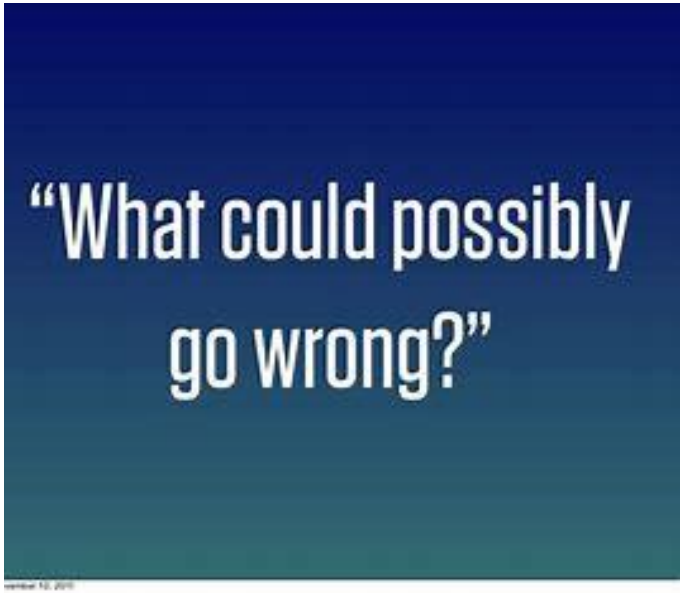
- To completely eliminate tremor and all other symptoms at all times?

or

- To keep people functioning in the mainstream of life?

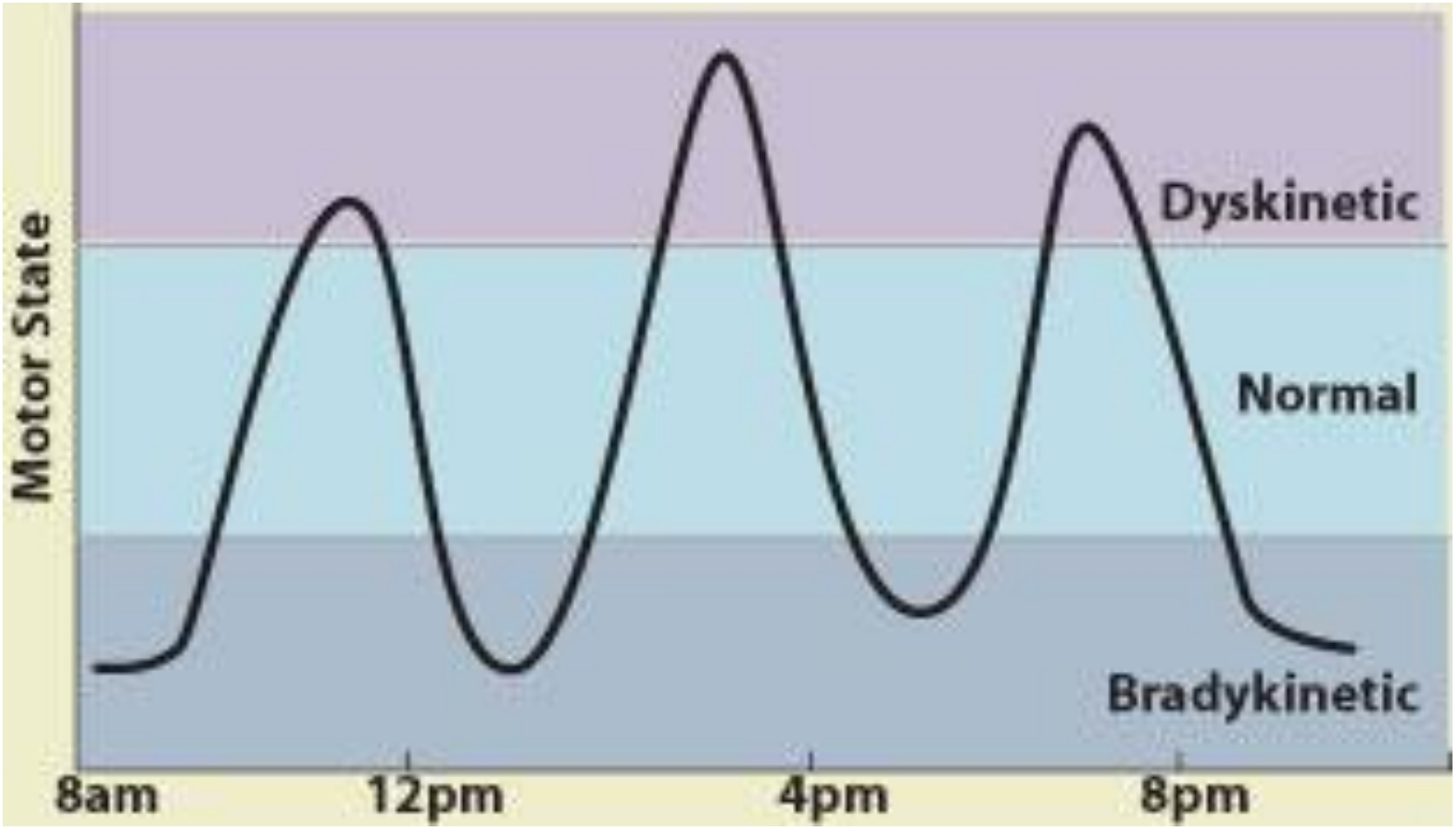
Levodopa seems like a miracle treatment, but what changes over time?





- **Fluctuations in response**

Fluctuations in response to treatment often occur as the disease advances



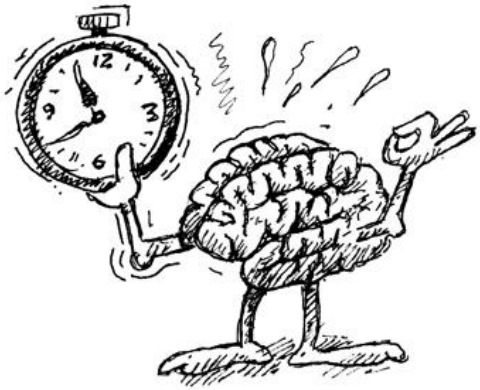
PD patients with fluctuating symptoms often require complex medication regimens:

	7am	10am	1pm	4pm	7pm	10pm	1am	4am
Carbidopa-levodopa 25/100	1 ½	1 ½	1 ½	1	1		(1)	(1)
Carbidopa-levodopa CR 50/200						1		
Ropinerole 4mg	1		1		1			
Entacapone 200mg	1	½	1	½	1	½	(1)	
Selegiline 5mg	1	1						
Amantadine 100mg	1				1			

- **Compliance is challenging**
- **Side effects of polypharmacy:**
- **Treatment issues in hospitalized patients**

Avert problems in the hospitalized Parkinson disease patient !

Precise timing and **correct dosing** of medications is important to prevent symptom fluctuations in PD patients:

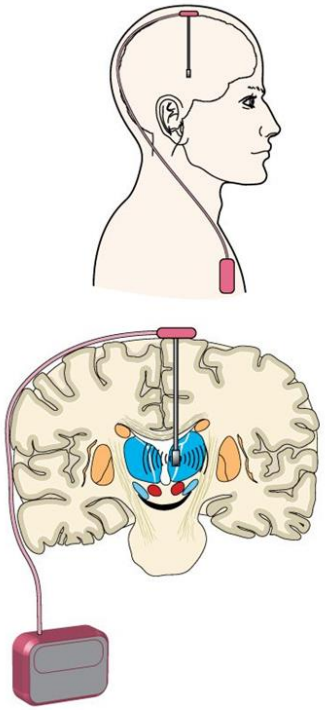


Doses must be given

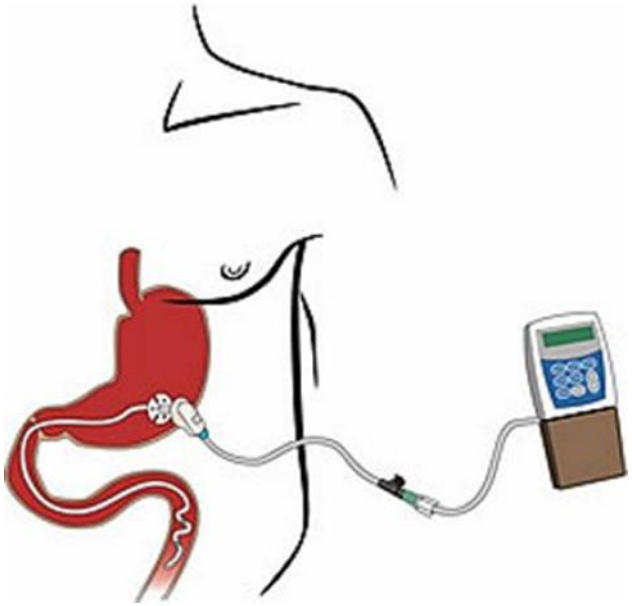
<u>ON TIME EVERY TIME</u>!

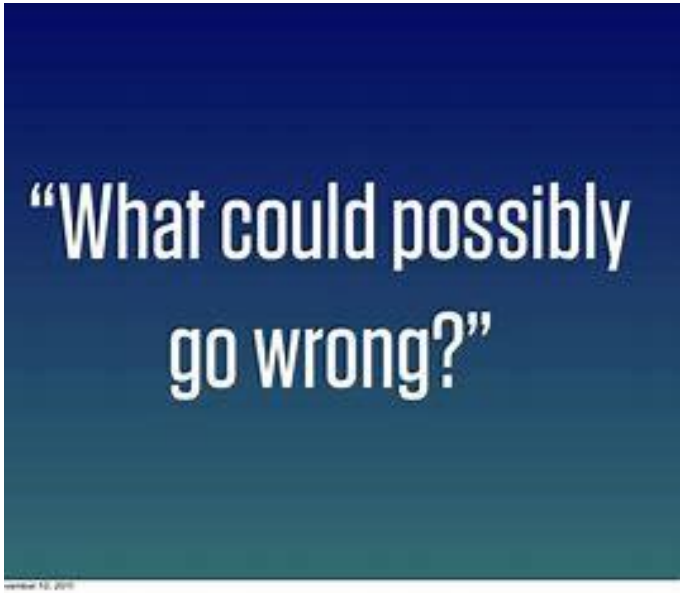
Effective surgical therapies for reducing motor fluctuations in PD

DBS “deep brain stimulation”



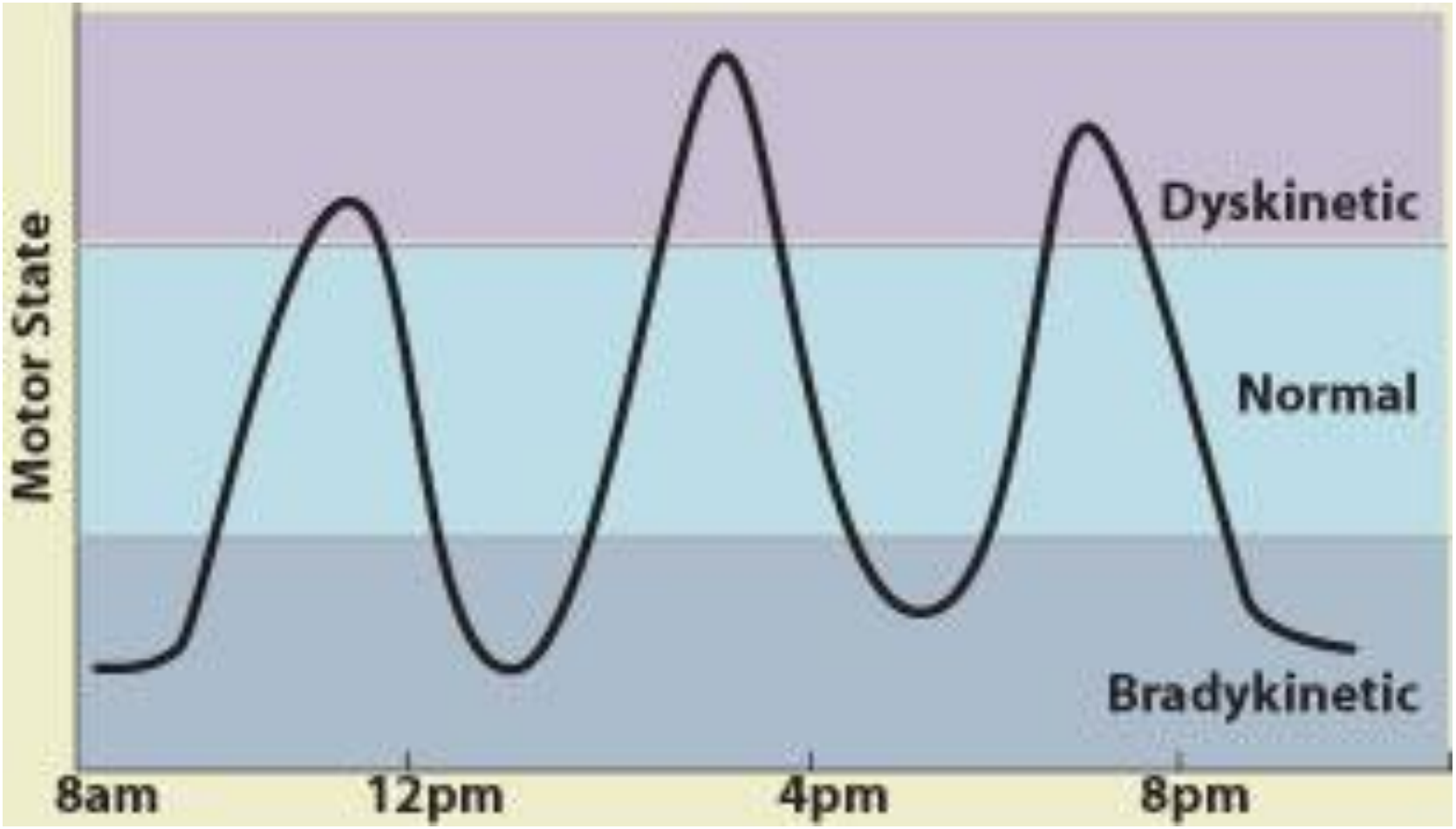
Continuous infusion in jejunum (duopa)





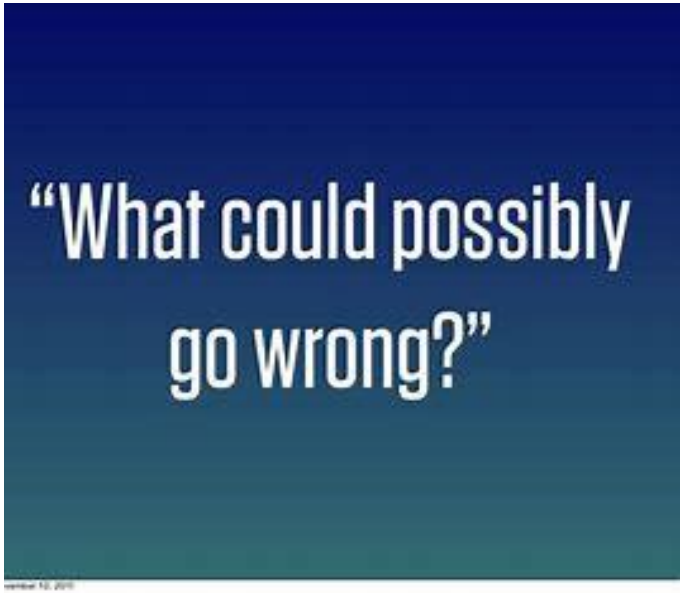
- **Medication side effects**

Fluctuations in response to treatment often occur as the disease advances



Severe dyskinesias in Parkinson disease

over-medication can also trigger *hallucinations* and *psychosis* and *impulse control disorders*

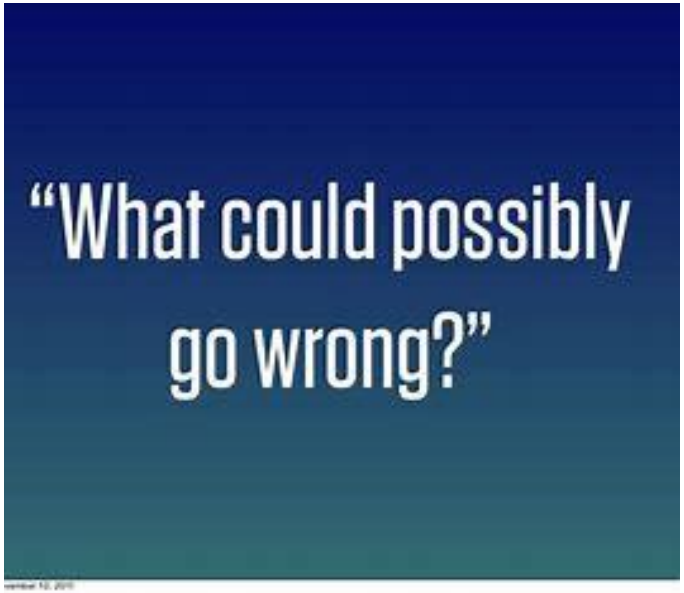


- **Problems with movement unrelated to lack of dopamine**
  (“non-dopaminergic motor problems”)

"non-dopaminergic" motor problems

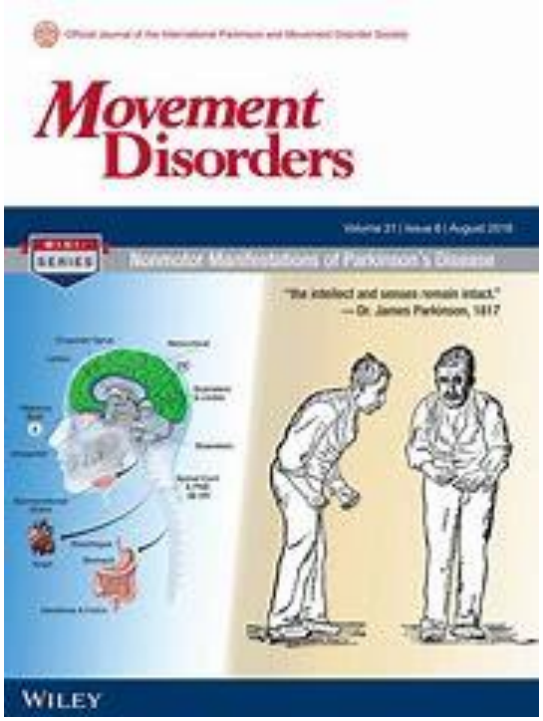
can predominate after many years:

- **Freezing of gait / gait initiation failure**
- **Dystonic rigidity** (often painful)
- **Dysphagia** (difficulty swallowing)
- **Dysphonic dysarthria** (slurred speech)



“non-motor” problems !

Parkinson disease is referred to as a "movement disorder"



<u>but abnormal movement is often just "the tip of the iceberg"</u>!

“non-motor problems” can be the major source of disability in persons with PD!

- Psychiatric and behavioral problems
- Cognitive impairment
- Autonomic dysfunction
- Sleep disturbances

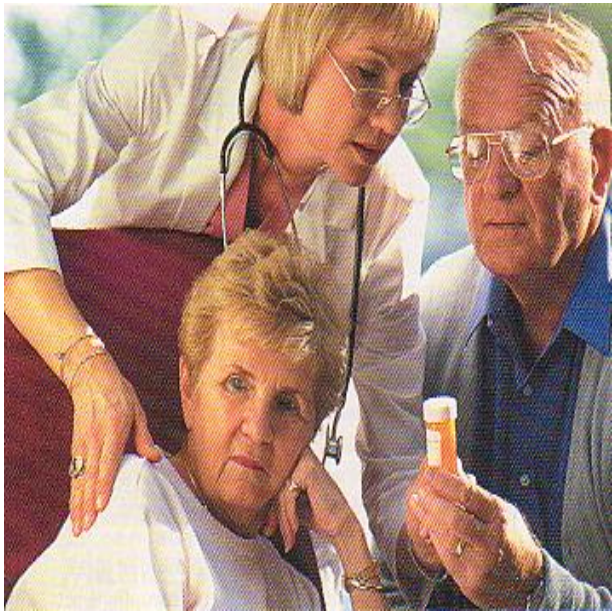
“autonomic dysfunction” in PD

- Orthostatic hypotension
- Constipation
- Bladder and sexual dysfunction
- Fatigue

Timing of behavioral changes in PD

At **any time** in course of PD:

- **Anxiety**
- **Depression**
- **Apathy**
- **Mild cognitive impairment**



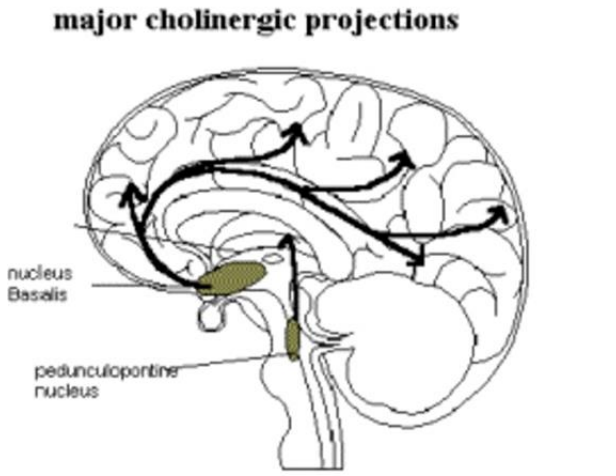
Occur **later** in the disease:

- **Dementia**
- **Hallucinations**
- **Psychosis**
- **Delirium**

(consider alternative diagnoses if these occur *early* in the disease!)

Are cognitive issues or dementia inevitable in persons with PD ?

Cognitive disorders in PD



- **Mild cognitive impairment**
- **Bradyphrenia** (slowness of response)
- **Parkinson disease dementia**
  (often with hallucinations, delusions)

Teamwork is important to treat the motor and non-motor problems in Parkinson disease.

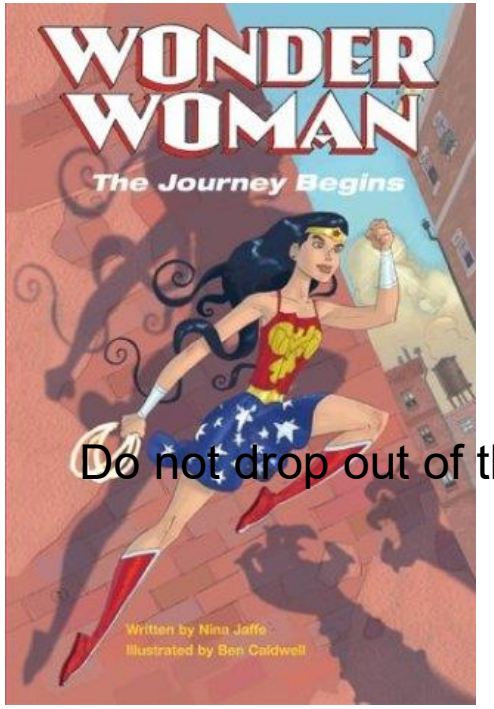
Neurology, medicine, physical therapy, occupational therapy, speech therapy, psychology, psychiatry, social work, and others

The good news:

With appropriate treatment, most persons with PD remain in the mainstream of life for many years after diagnosis!

“No cure does not mean no hope”

What about the care-partners?



Do not drop out of the mainstream of life!

Do not drop out of the mainstream of life!

“I can deal with his difficulty moving around, but I cannot deal with his behavior!”

Neuropsychiatric and sleep disturbances often have a greater impact on caregiver burden than the motor symptoms of Parkinson disease.

“help network” to reduce care partner stress

- Family / adult children
- Friends / neighbors / church groups
- Paid companions / home health aides
- Adult day care programs
- Support groups
- Counselling for care partner
- Respite care

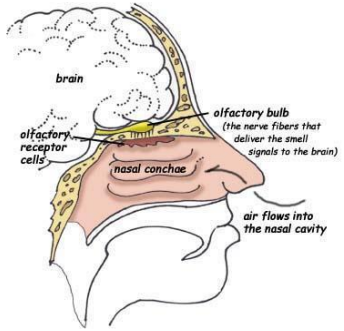
Why does this happen? What are the causes of the Parkinson diseases?

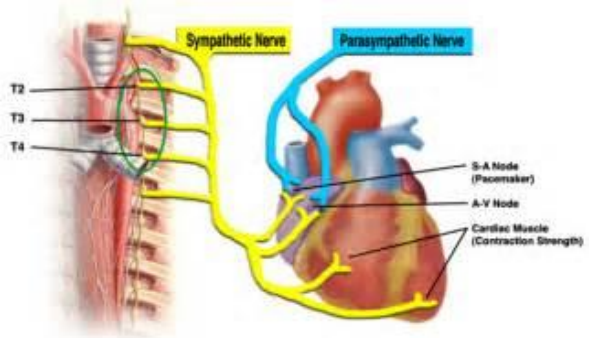
- 

"the pre-Parkinson syndrome":

There are symptoms <u>preceding</u> the motor signs of PD by <u>many years</u>!

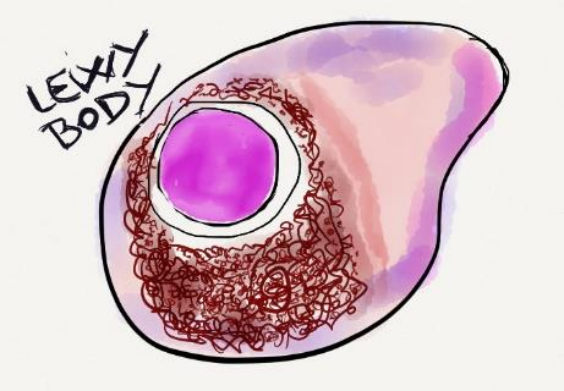
- **REM sleep behavioral disorder**
- **Loss of sense of smell**
- **Cardiac sympathetic denervation**

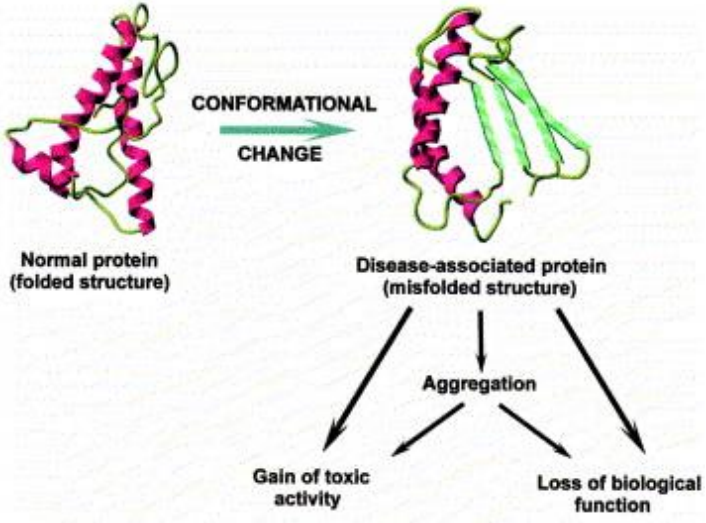


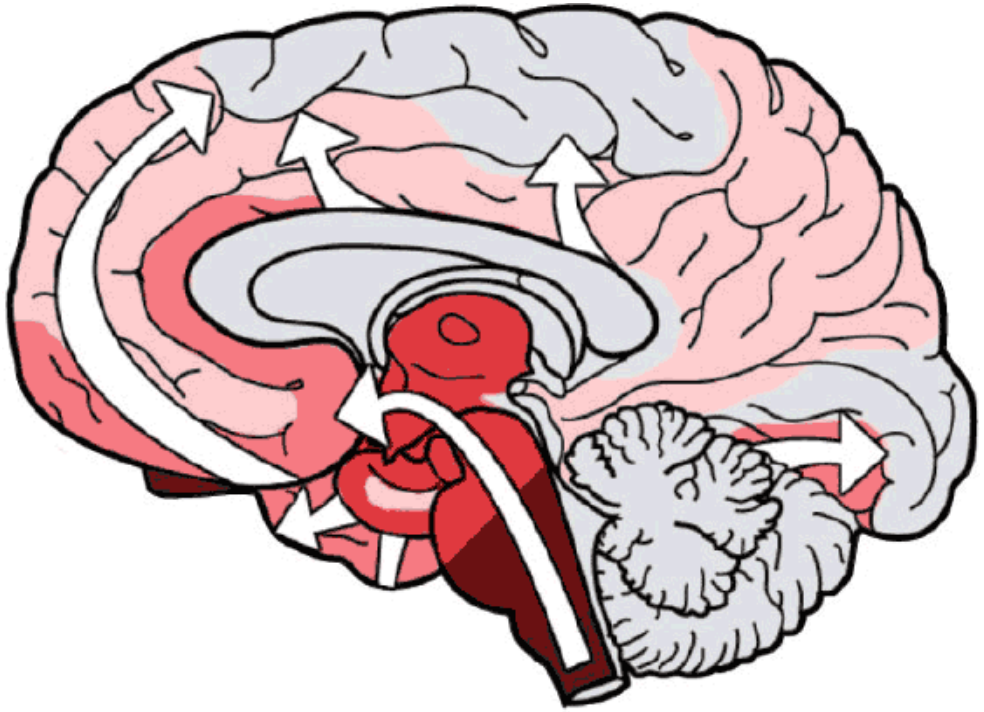


REM sleep behavioral disorder

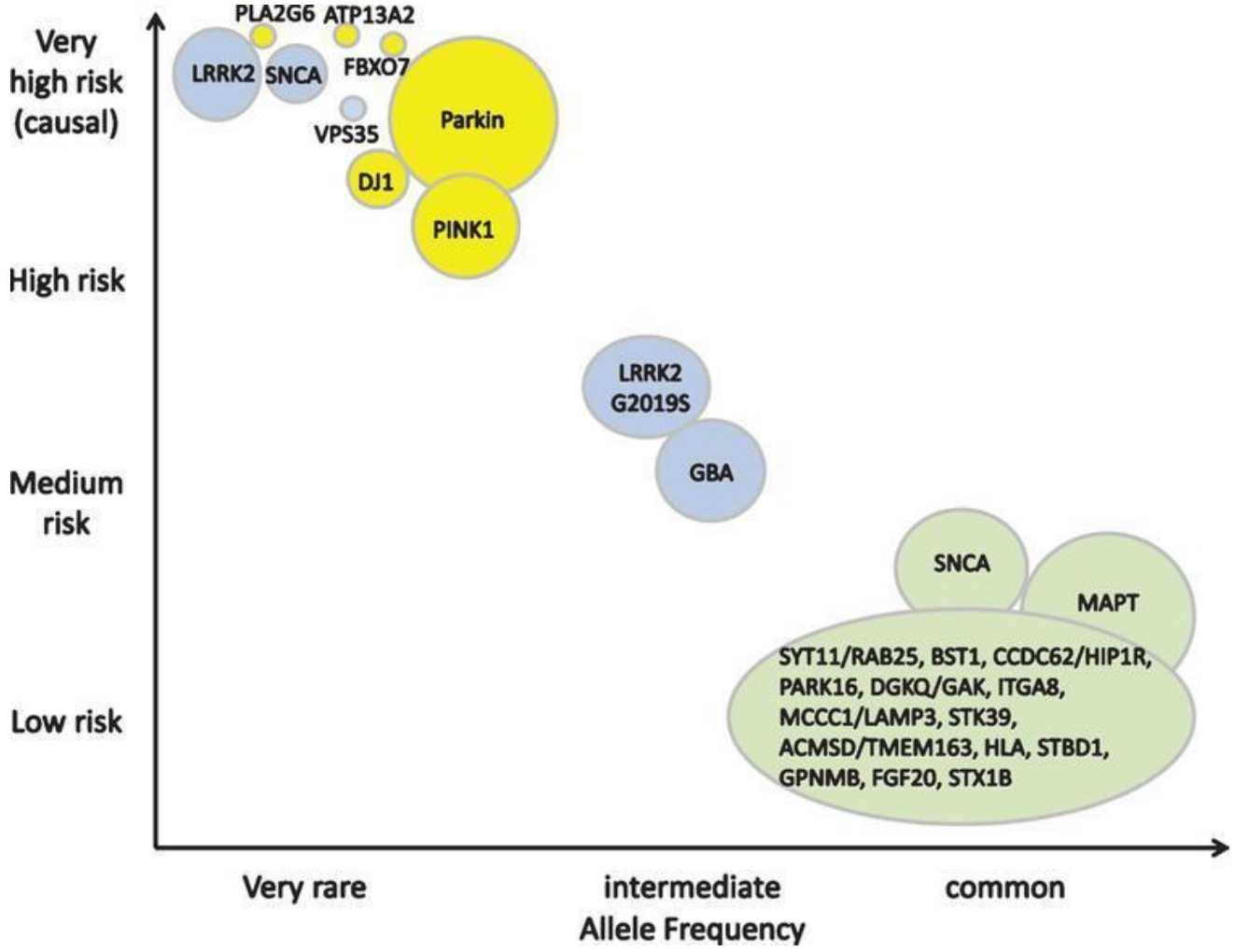
α-synuclein and Parkinson disease





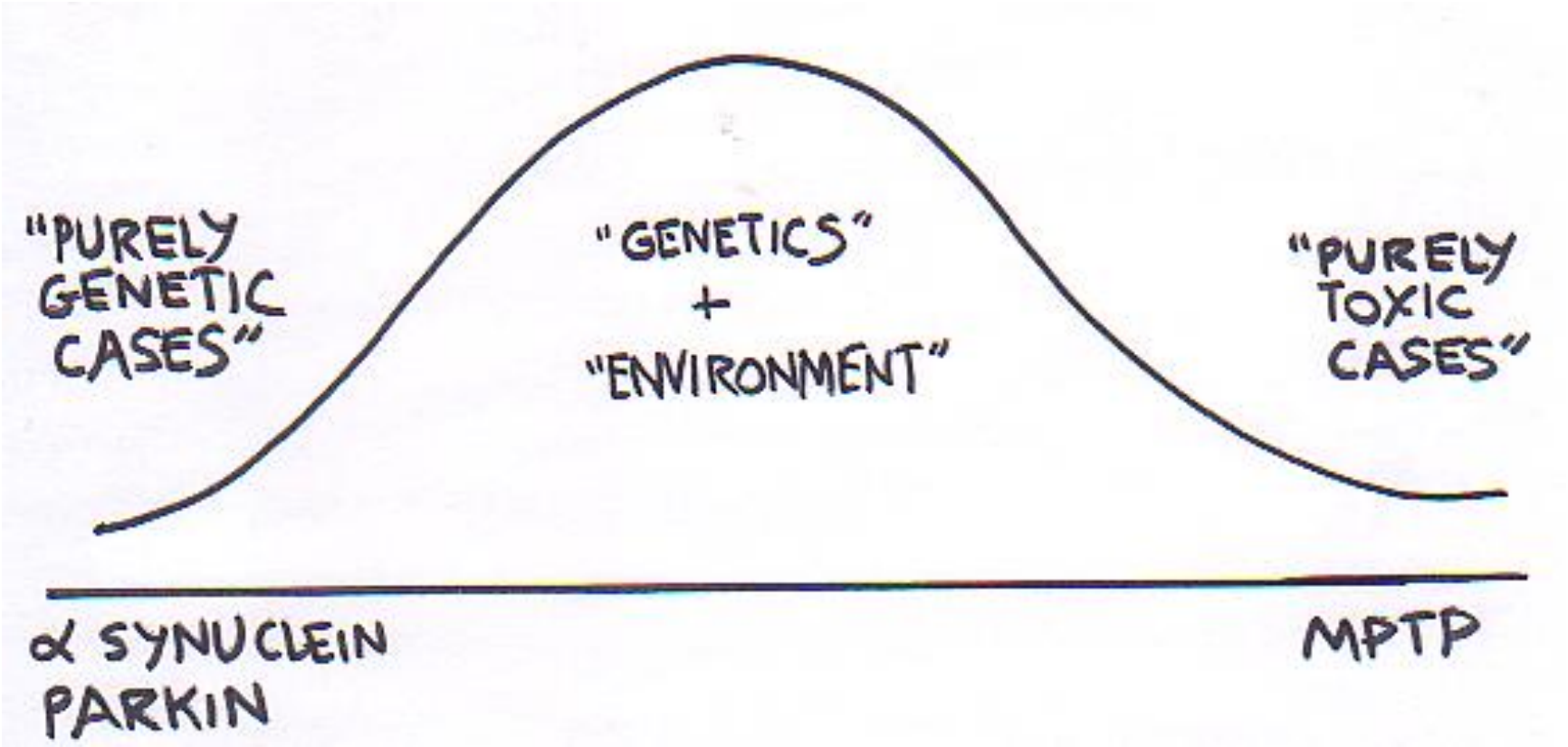


Genetic factors causing Parkinson disease (GBA1 variants are most common)



ETIOLOGY of PARKINSON DISEASES:

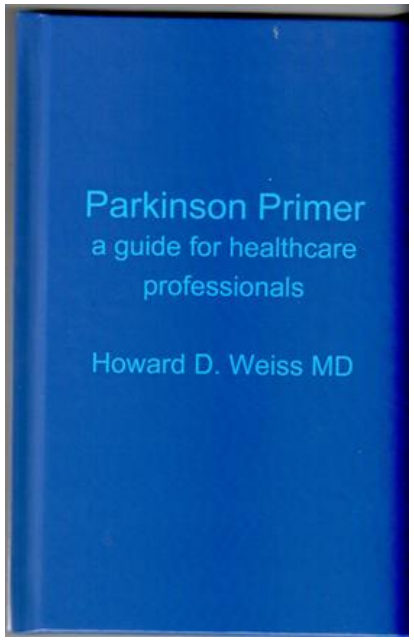
"Genetics loads the gun, age and environment pull the trigger"



I hope you found this talk to be informative and will be glad to entertain questions!

If you would like to learn more about PD, please email me for a free PDF copy of my

"Parkinson Primer"



Contact me at **howdyweiss@aol.com**

RESOURCES

MARYLAND LivingWell CENTER of EXCELLENCE

- Evidence-Based Programs (EBP)
- Virtual Statewide Workshops
- Diabetes Flyers and Social Media Ads
- Vaccine Partnership
- Dementia Series (Recorded webinars here)
- FindHelp LWCE
- Maryland Access Point (MAP)
  - Program Eligibility Requirements for select income-based federal and state programs
- **CONTACT US**

Save the date:

May 15th 12:15 PM

Understanding the Non-Alzheimer's Dementias

Haroon Burhanullah, MD