

WHAT DEFINES YOPD? HANDLING UNIQUE CONCERNS

REBECCA GILBERT, MD, PHD

VICE PRESIDENT, CHIEF SCIENTIFIC OFFICER, APDA

MARCH 14, 2019



**AMERICAN
PARKINSON DISEASE
ASSOCIATION**

Strength in optimism. Hope in progress.

YOUNG ONSET PARKINSON'S DISEASE

Definition: Parkinson's disease diagnosed before the age of 50

Concerns:

- Disclosure
- Employment
- Family
- Importance of exercise
- Specific clinical features

APDA RESOURCES - A CLOSER LOOK BLOG

➔ <https://www.apdaparkinson.org/doctor-blogs/a-closer-look/page/3/>

TO DISCLOSE OR NOT TO DISCLOSE: THAT IS THE QUESTION



To disclose or not to disclose: that is the question


Disclosure of a Parkinson's disease diagnosis to friends and family can be daunting. Dr. Gilbert discusses the pros and cons to consider.

READ MORE



Posted in What is Parkinson's

APDA RESOURCES - WEBINARS

 <https://www.apdaparkinson.org/webinar/>

SPOTLIGHT ON YOUNG ONSET: EXPLORING TREATMENT AND MANAGEMENT OPTIONS




Spotlight on Young Onset: Exploring Treatment and Management Options

Featured Presenter:

Joel S. Perlmutter, MD, Elliot Stein Family Professor of Neurology, Section Chief of Movement Disorders, Professor of Radiology, Neuroscience, Physical Therapy, and Occupational Therapy, Washington University School of Medicine, St. Louis, MO

READ MORE 

APDA RESOURCES – MEDICAL INFORMATION

→  <https://www.apdaparkinson.org/what-is-parkinsons/early-onset-parkinsons-disease/>


What is Parkinson's Disease? ▼

Education & Support ▼

Research ▼

Get Involved ▼

EARLY ONSET PARKINSON'S DISEASE

 > What is Parkinson's Disease? > Early Onset Parkinson's Disease

WHAT IS EARLY ONSET PARKINSON'S DISEASE?

When someone who is 21-50 years old receives a diagnosis of Parkinson's disease, it is referred to as early onset Parkinson's disease, or young onset Parkinson's disease. While the symptoms of the disease are mostly the same at whatever age it develops, younger people will experience the disease differently due to their unique life circumstances. Managing the disease can be particularly challenging for a younger person and their family from a medical, psychological and social standpoint.

EXERCISE

CDC GUIDELINES FOR PHYSICAL ACTIVITY FOR ADULTS

- Adults should move more and sit less throughout the day.
- Adults should do at least 150 minutes (2 hours and 30 minutes) to 300 minutes (5 hours) a week of moderate-intensity, or 75 minutes (1 hour and 15 minutes) to 150 minutes (2 hours and 30 minutes) a week of vigorous-intensity aerobic physical activity, or an equivalent combination of moderate- and vigorous-intensity aerobic activity.
- More beyond this is better
- Muscle-strengthening activities that involve all major muscle groups on 2 or more days a week are recommended

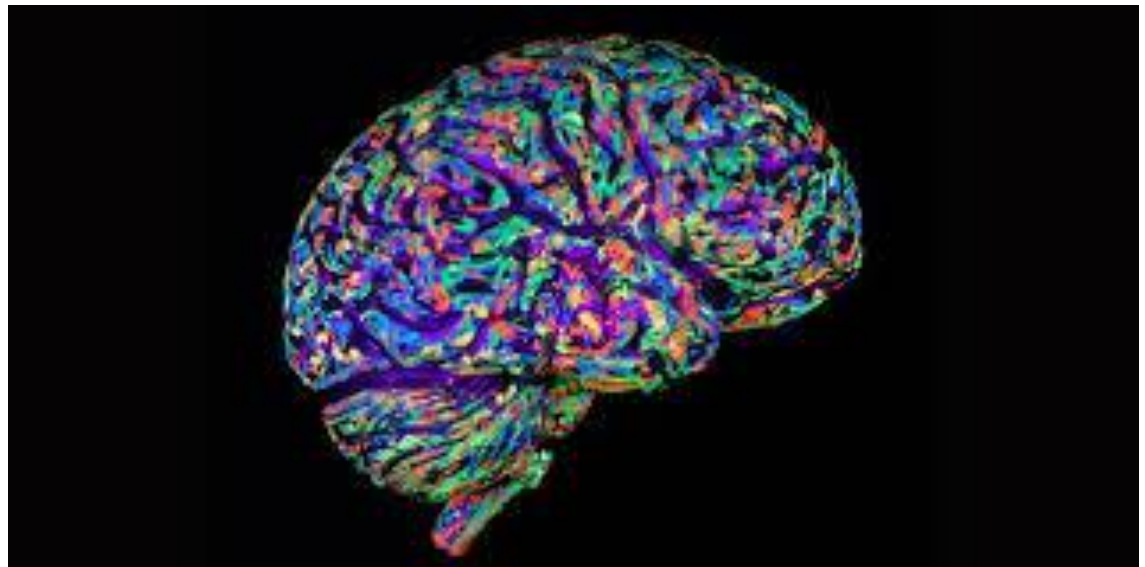
WHY DOES EXERCISE HELP PD?

Exercise increases the number of dopamine receptors in the brain

Exercise increases blood flow to the brain

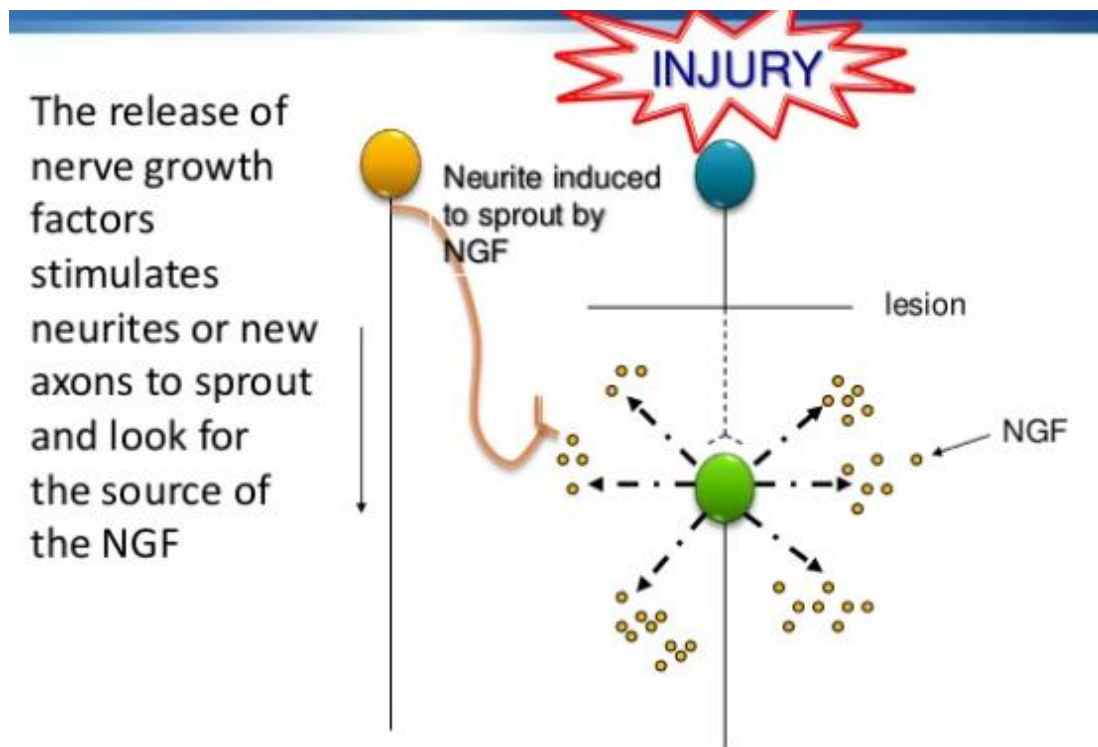
Exercise increases nerve growth factors that allow nerves to live longer

Exercise increases neuroplasticity – the ability for nerve cells to make new connections



NEUROPLASTICITY

Making new nerve connections



EXERCISE AND PARKINSON'S DISEASE

Patients were assigned to one of three exercise groups:

- High intensity treadmill use
- Low intensity treadmill use
- Stretching and resistance exercises

Findings

- Walking speed improved in low intensity treadmill group
- Gait and mobility improved in low and high intensity treadmill group
- Muscle strength improved in stretching and resistance group

Conclusion: combine workout types! The more the better!

JAMA Neurol. 2013 Feb;70(2):183-90

EXERCISE IN PD

Evidence supports the following claims (Neurology. 2011;77(3):288-94):

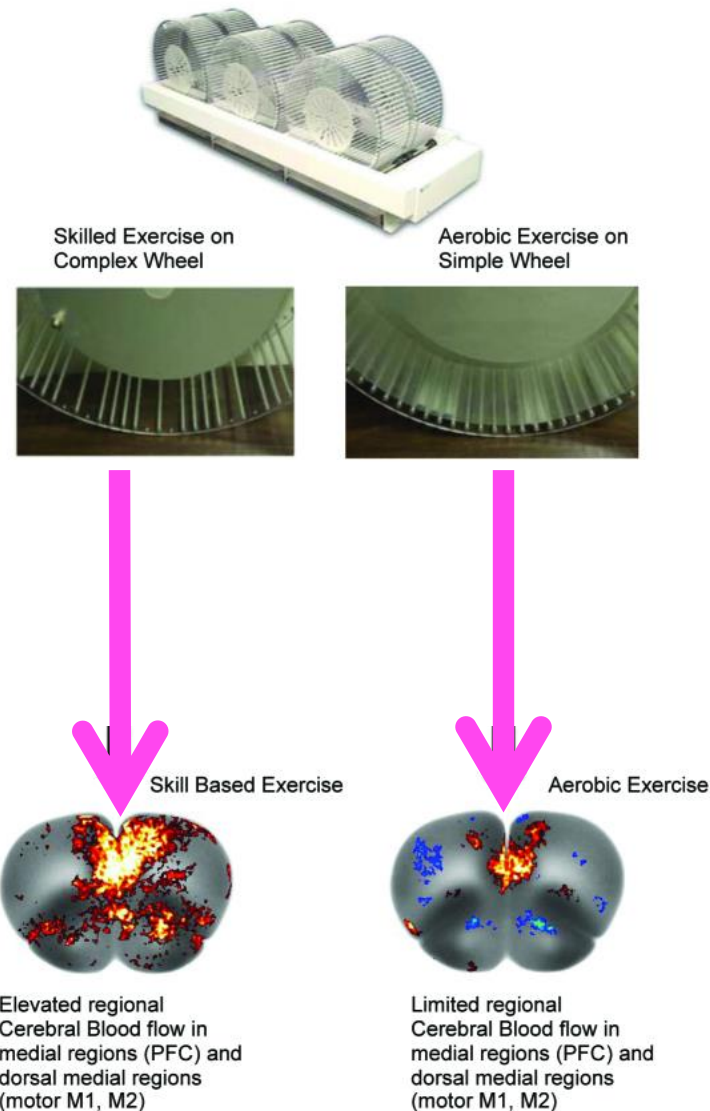
- Cardiovascular fitness is associated with better cognitive and motor scores in PD
- Longevity in PD is associated with increased physical activity
- Non motor features of PD such as constipation, fatigue, depression, all improve with exercise and fitness



EXERCISE AND PARKINSON'S DISEASE

J Hum Kinet. 2016
Sep 1; 52: 35–51.

Learn a new motor skill!



WHAT IS THE BEST TYPE OF EXERCISE FOR PD?

Vary your workouts

Try both skilled exercise, aerobic exercise, resistance training

Learn a new motor skill!



SPECIFIC CLINICAL FEATURES OF YOPD



**AMERICAN
PARKINSON DISEASE
ASSOCIATION**

Strength in optimism. Hope in progress.

CLINICAL FEATURES OF YOPD

Feature	YOPD vs LOPD
Prevalence	YOPD represents about 10% of PD cases
Presence of family history	More common in YOPD



NON MOTOR FEATURES OF YOPD

Symptom	YOPD vs LOPD
Cognitive difficulty	YOPD < LOPD
Psychosis	YOPD < LOPD
Autonomic symptoms	YOPD < LOPD
Sleep disorders	YOPD < LOPD
Depression	YOPD > LOPD
Impulse control disorders	YOPD > LOPD

[Parkinsonism Relat Disord.](#) 2014 May;20(5):530-4
[Neurology.](#) 2016 Apr 12;86(15):1400-1407
[Int J Neurosci.](#) 2016;126(3):227-34
[Can J Neurol Sci.](#) 2016 Jan;43(1):113-9
[J Neurol Sci.](#) 2016 Sep 15;368:150-4
[Clin Neurol Neurosurg.](#) 2013 Oct;115(10):2103-7

RATE OF PROGRESSION

Feature	YOPD vs LOPD
Rate of progression	YOPD < LOPD
Survival	YOPD > LOPD



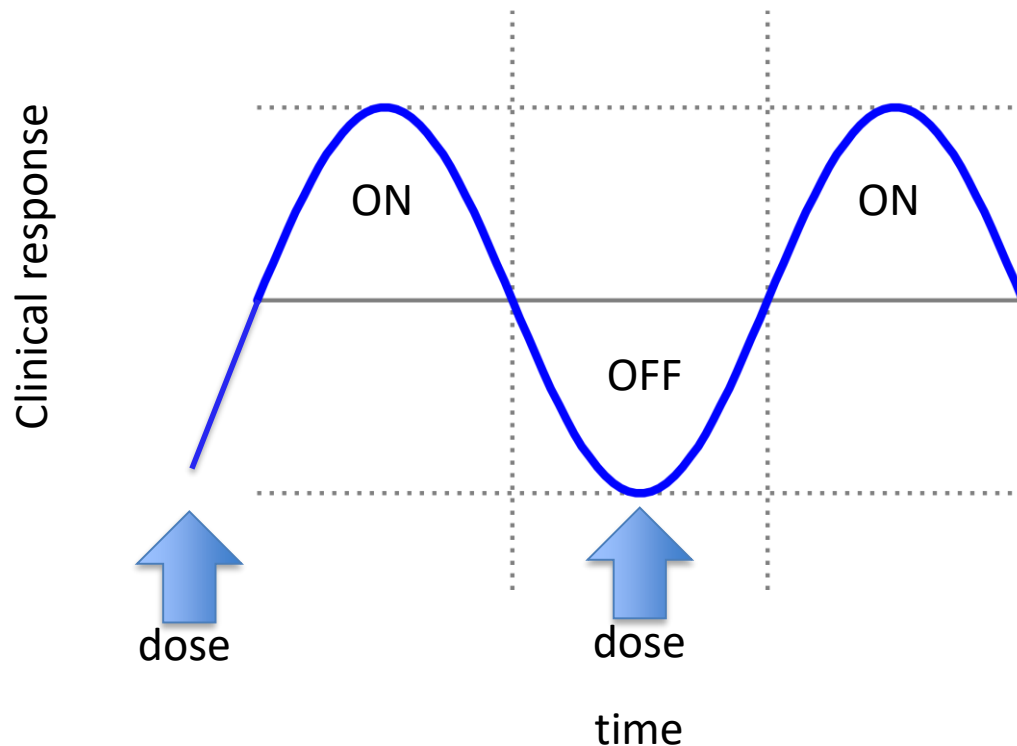
MOTOR FEATURES OF YOPD

Symptom	YOPD vs LOPD
Severity of symptoms at diagnosis	YOPD < LOPD
Dystonia	YOPD > LOPD
Levodopa induced dyskinesias	YOPD > LOPD
Motor fluctuations	YOPD > LOPD

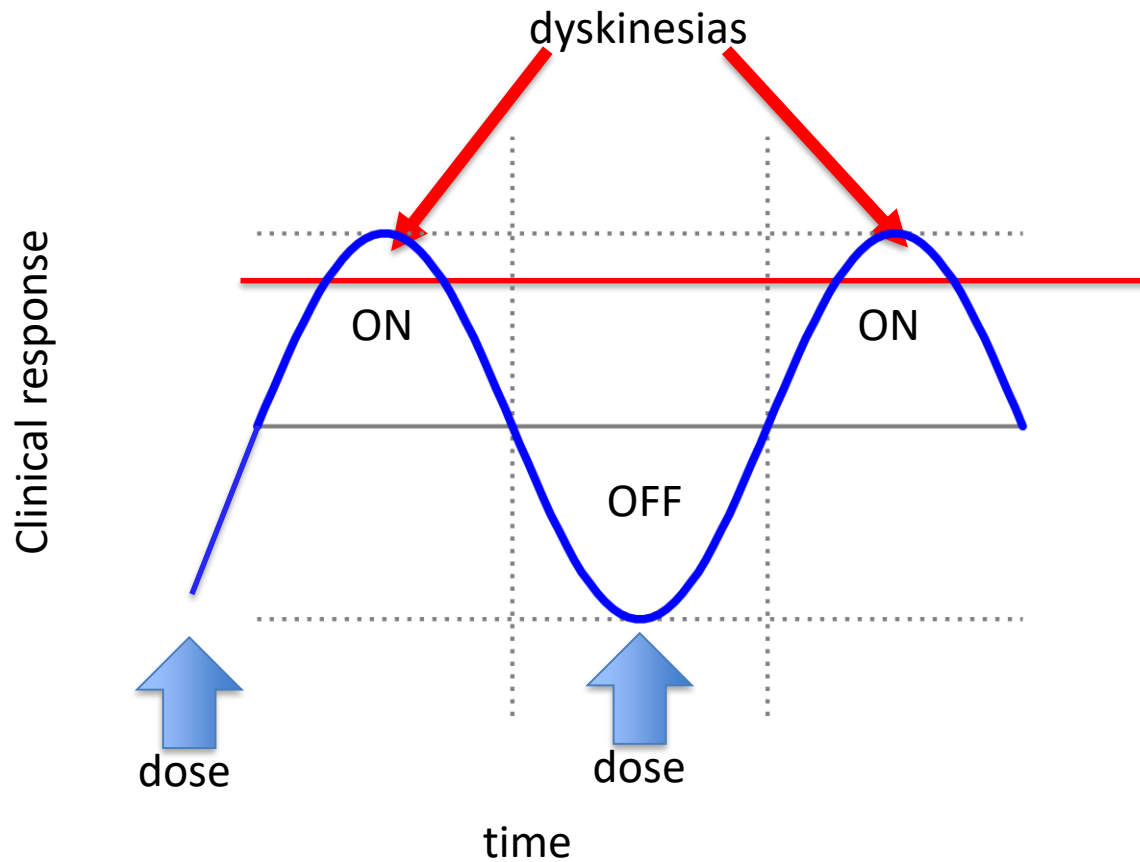
[Parkinsonism Relat Disord.](#) 2014 May;20(5):530-4
[Neurology.](#) 2016 Apr 12;86(15):1400-1407
[Int J Neurosci.](#) 2016;126(3):227-34
[Can J Neurol Sci.](#) 2016 Jan;43(1):113-9
[J Neurol Sci.](#) 2016 Sep 15;368:150-4
[Clin Neurol Neurosurg.](#) 2013 Oct;115(10):2103-7
[Mov Disord.](#) 2011 Feb 15;26(3):457-63

MOTOR FLUCTUATIONS IN PARKINSON'S DISEASE

A clinical phenomenon that some patients with Parkinson's disease experience, in which Parkinson's medication works at certain times of the day and does not work at other times.



DYSKINESIAS IN PARKINSON'S DISEASE



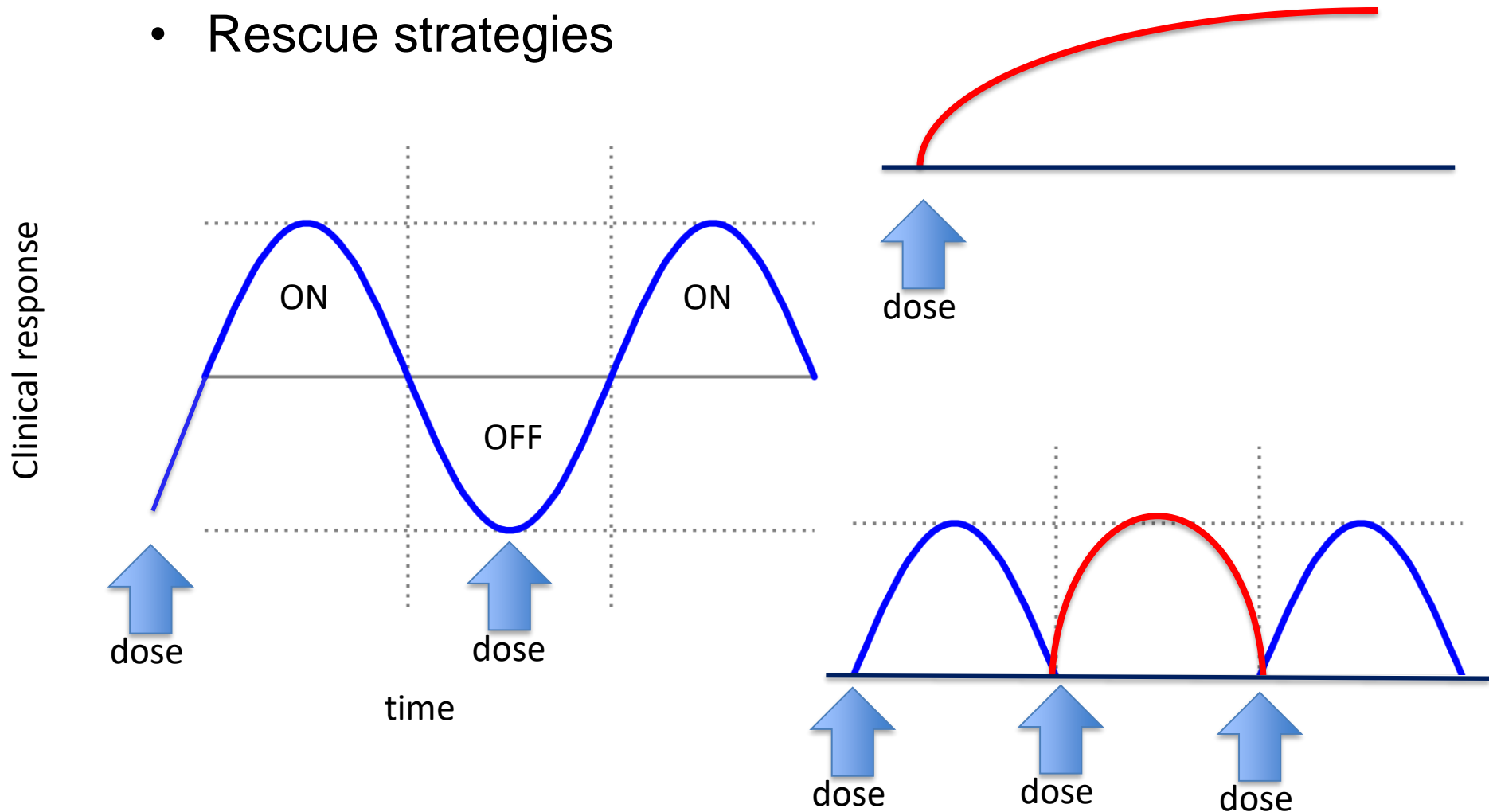
THE GENERAL STRATEGY FOR TREATING OFF TIME

Do not let the levels of dopamine fall below a certain level.



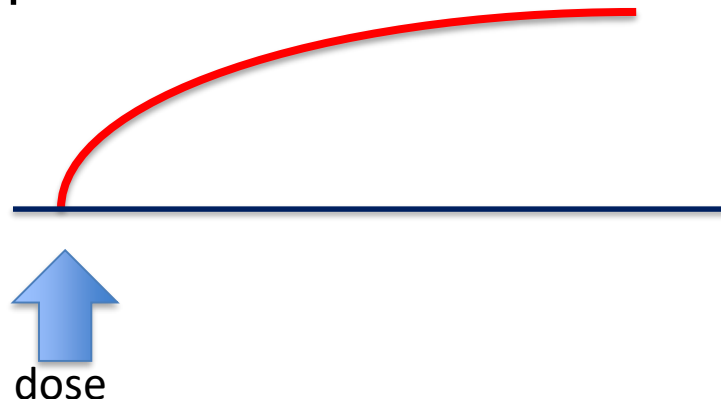
CURRENT SOLUTIONS TO ON/OFF TIME

- Making drug delivery more continuous
- Rescue strategies



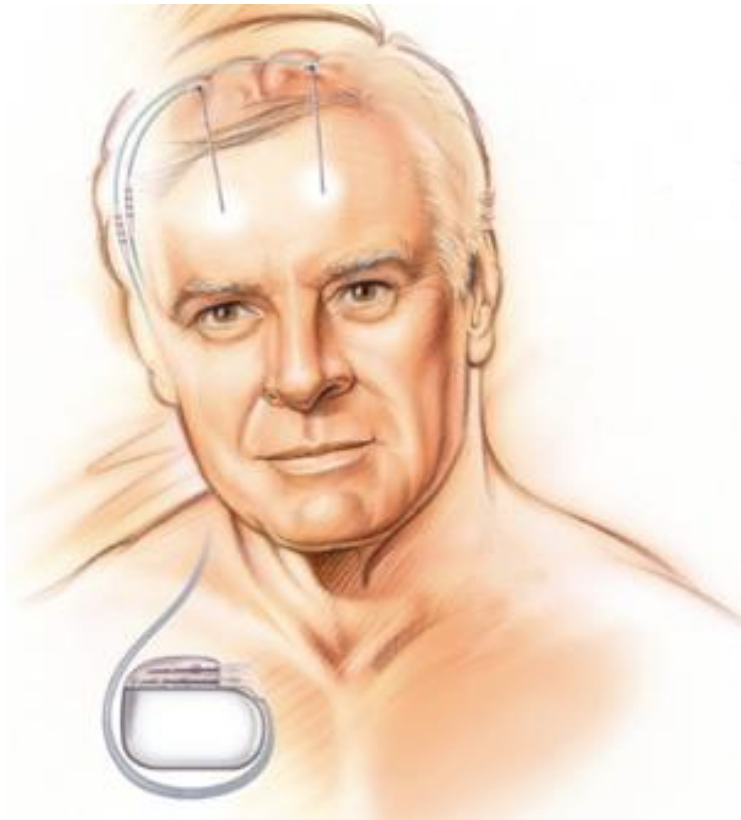
CURRENT SOLUTIONS TO OFF TIME: CONTINUOUS

- Smooth out Levodopa dosage by giving smaller doses more frequently
- Add MAOI (e.g. selegiline, rasagiline, safinamide)
- Add dopamine agonist, including long acting versions (e.g. pramipexole ER, ropinirole XL, rotigotine patch)
- Add COMT inhibitor (e.g. entacapone, tolcapone)
- Use longer acting Levodopa formulation: rytary
- Use longer acting Levodopa formulation: duopa
- Deep brain stimulation



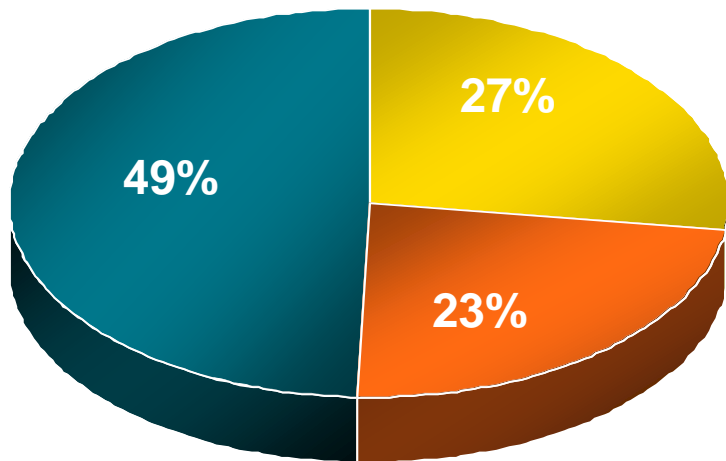
DEEP BRAIN STIMULATION

- Subthalamic nucleus (STN)
- Globus pallidus interna (GPi)
- Thalamus (Tremor - Vim)

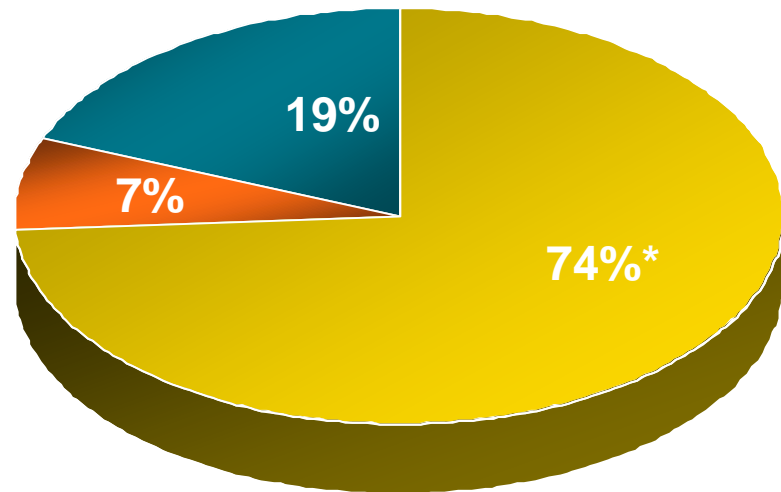
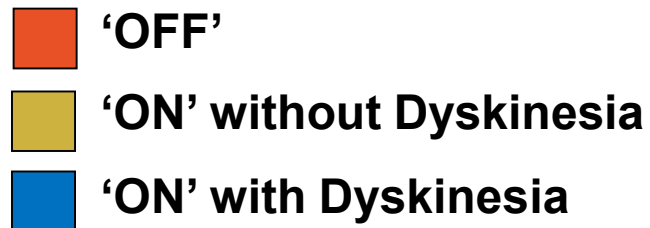


ON TIME WITHOUT DYSKINESIAS IMPROVES FROM 27% TO 74% OF THE WAKING DAY AFTER DBS

N Eng J Med. 2001;345:956-63.



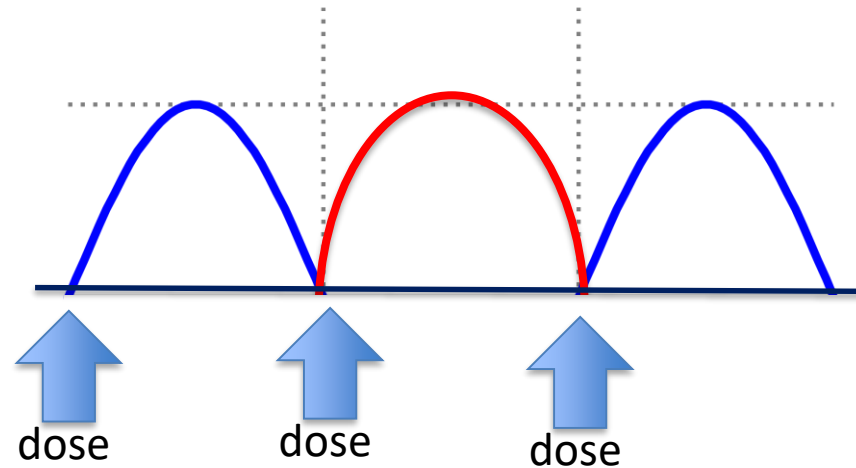
Before Surgery (n=96)



**6 Months After Surgery
Bilateral STN Implant
(n=91)**

CURRENT SOLUTIONS TO OFF TIME: RESCUE

- Parcopa
- Apomorphine injections
- Levodopa inhalation powder



FUTURE SOLUTIONS TO MOTOR FLUCTUATIONS

- Focused ultrasound
- Sublingual apomorphine film

FOCUSED ULTRASOUND

Focused beams of ultrasound energy converge within the brain tissue to form a small lesion that interferes with the brain circuitry

clinicaltrials.gov/ct2/show/NCT03319485,
clinicaltrials.gov/ct2/show/NCT02246374



<https://www.insightec.com/>

APOMORPHINE SUBLINGUAL FILM

- Apomorphine sublingual film for rescue dose
- In February 2019, the FDA did not approve the medication and asked for additional information



YOUNG ONSET PARKINSON'S DISEASE

Unique concerns:

- Disclosure, Employment, Family
 - Stay tuned to the upcoming presentations
 - Check out APDA website
- Importance of exercise
 - Mix up work-out routines – high intensity exercise, resistance training
 - Consider learning a skilled motor activity
- Specific clinical feature
 - Non-motor features tend to be different in YOPD vs LOPD
 - YOPD have more motor fluctuations and dyskinesias

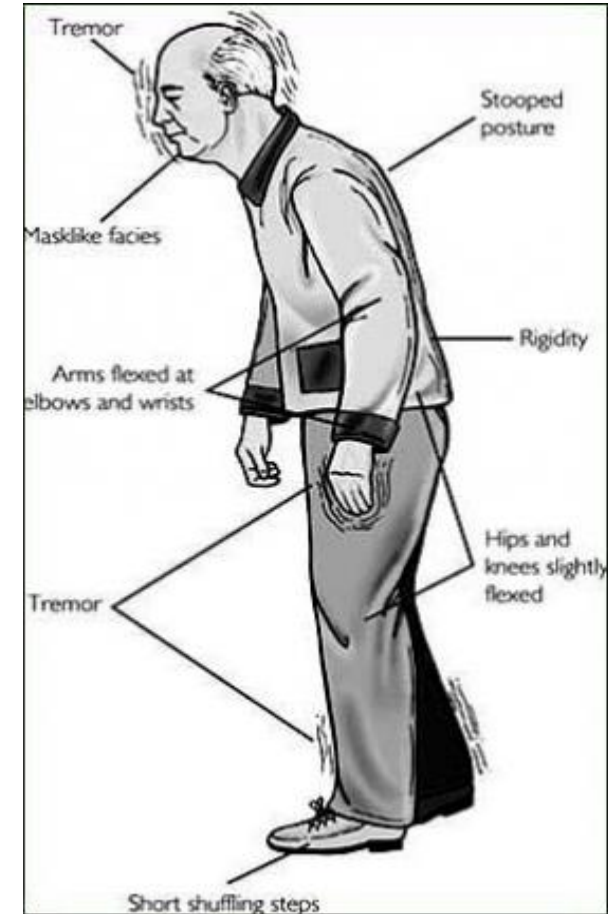
THANK YOU!

1-800-223-2732

apdaparkinson.org

MOTOR FEATURES OF PARKINSON'S DISEASE

- T** Tremor
- R** Rigidity
- A** Akinesia or Bradykinesia
- P** Postural instability



NON MOTOR FEATURES OF PARKINSON'S DISEASE

Motor symptoms

Non motor symptoms

NEUROPSYCHIATRIC

- Depression
- Sleep disorders
- Cognitive impairment and dementia
- Apathy

AUTONOMIC & VISCERAL

- Orthostatic hypotension
- Constipation
- Urinary dysfunction
- Sexual dysfunction

SENSORY

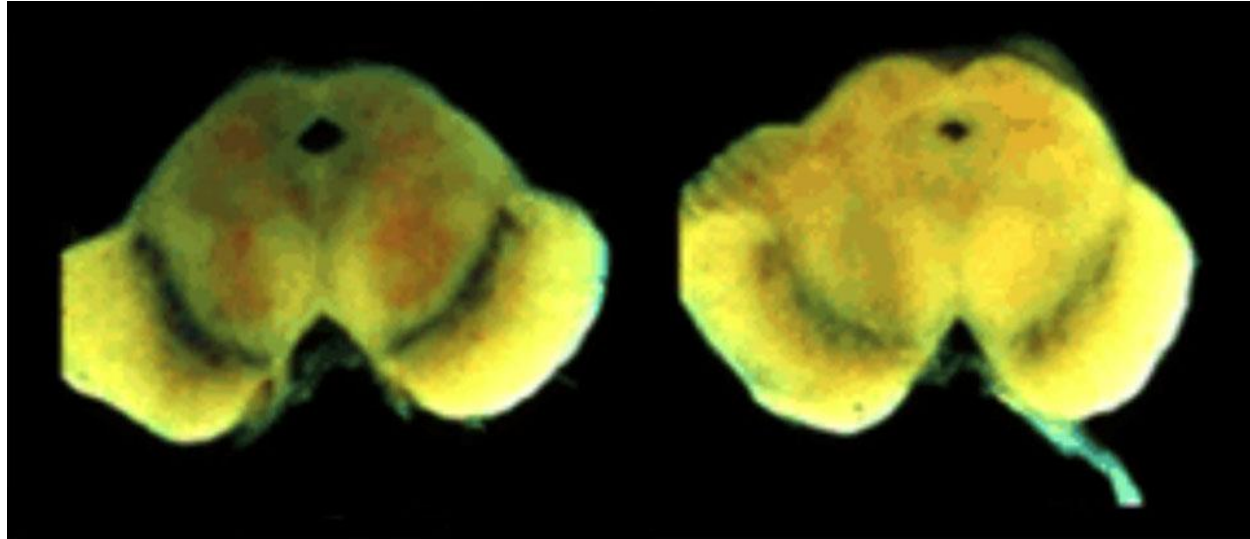
- Visual
- Loss of smell
- Pain



AMERICAN
PARKINSON DISEASE
ASSOCIATION

Strength in optimism. Hope in progress.

MOTOR SYMPTOMS ARE CAUSED BY LOSS OF NERVES THAT PRODUCE DOPAMINE

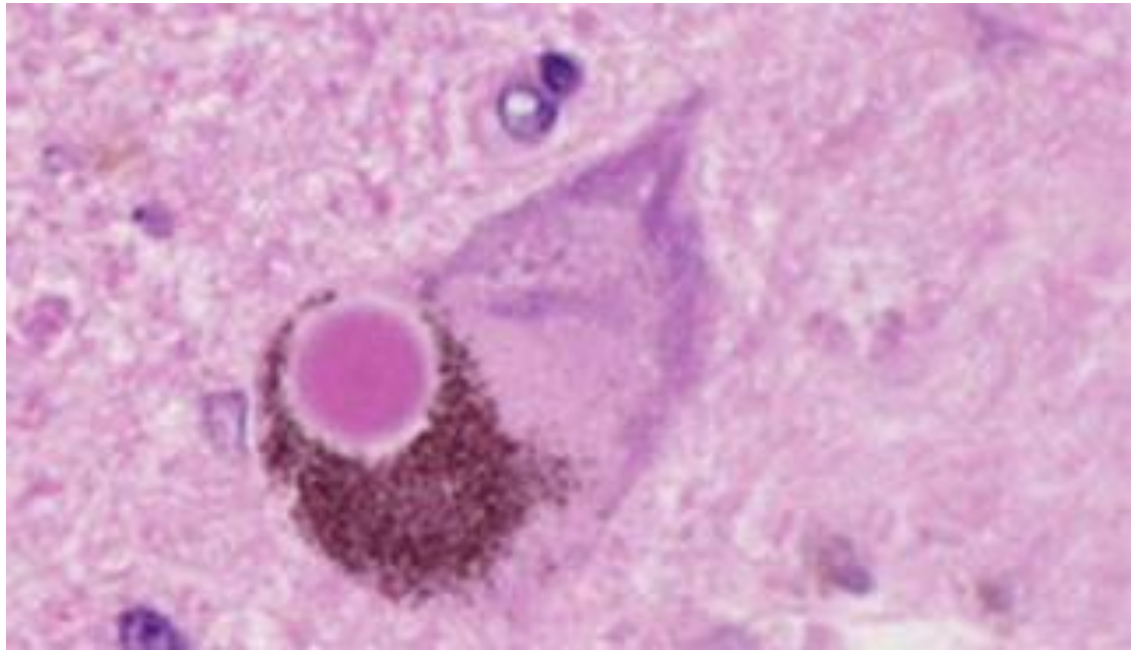


control

Parkinson's disease

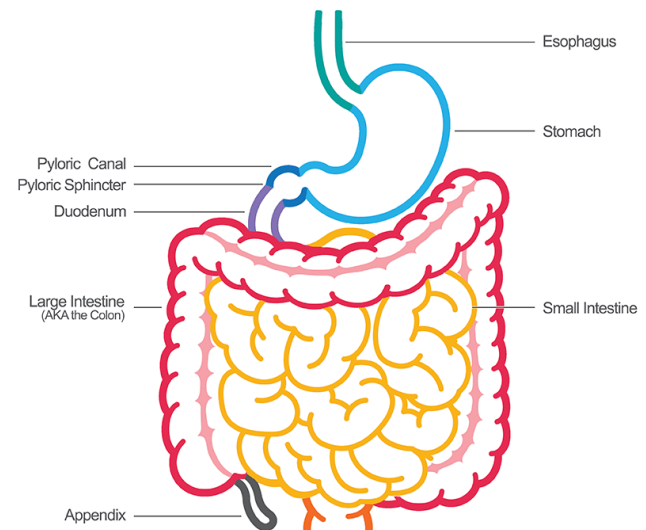
THE LEWY BODY

Alpha-synuclein:
Abnormal
accumulation in
Lewy bodies
is harmful to nerve
cells



MEDICATION EFFICACY AND THE GI TRACT

- Delayed gastric emptying is a non motor symptom of Parkinson's disease and can interfere with Levodopa absorption
- Dietary protein can interfere with absorption of Levodopa
- Other GI pathology may interfere with Levodopa absorption (*Helicobacter pylori*, Small intestinal bacterial overgrowth (SIBO))



WHAT IF I KNOW THAT MY RESPONSE TO
MEDICATION VARIES DURING THE DAY, BUT IT
SEEMS RANDOM AND UNRELATED TO
MEDICATION DOSES?

- Very common for patients to feel this way!
- Keep a medication diary
- Erratic medication responses
 - Dose failures – when a dose is ingested but fails to work
 - Delayed ON – when a dose takes longer to work than usual
 - Sudden or unpredictable OFF – when medication efficacy ceases suddenly or unpredictably