



CENTER OF EXCELLENCE



**February 17, 2021**

# Parkinson's Disease: New Diagnosis Workshop Treatment

**Dr. Melissa Mackenzie, MD, FRCPC**

Movement Disorders Specialist  
Pacific Parkinson's Research Center  
Clinical Assistant Professor, UBC

**Dr. Jonathan Squires, MD, FRCPC**

Movement Disorders Specialist  
Pacific Parkinson's Research Center  
Clinical Assistant Professor, UBC

**Michelle McCarthy, PT**

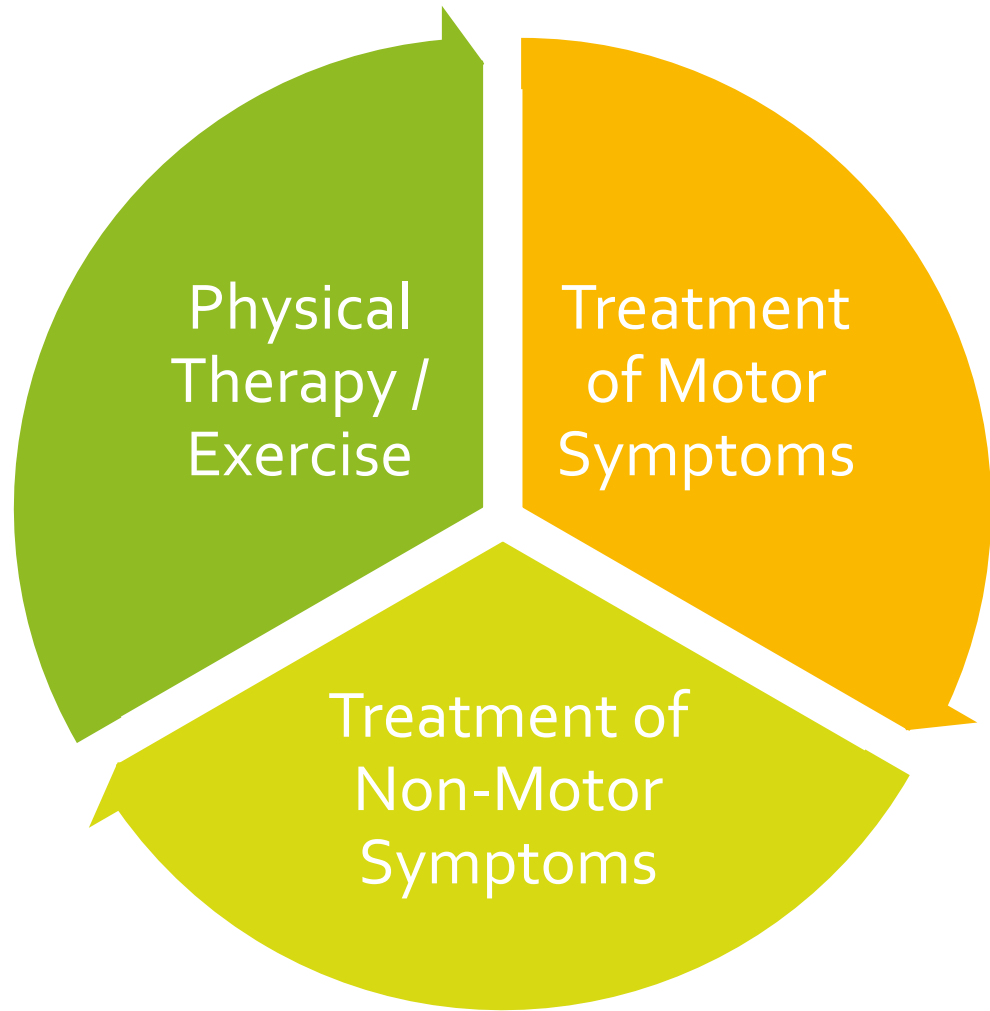
Physiotherapist, Movement Disorders Clinic

# Management of Parkinson's

- Individualized approach
- Based on severity of symptoms



# Management Of Parkinson's



# Exercise As Treatment



???

- *When is it time to start medication?*
- Very individual!
  - Affecting day to day life
  - Limited in ability to exercise
  - Limited ability to do daily tasks



Levodopa/  
Carbidopa



- Major breakthrough in symptomatic treatment of Parkinson's in the 1960's
- Levodopa is converted to dopamine in the brain
- Carbidopa prevents conversion to dopamine outside the brain
- **Most effective/potent medication available**
- **Everyone will eventually require levodopa**

???

- *Does Levodopa slow down Parkinson's progression?*
- *OR*
- *Is levodopa toxic to the brain?*

## Levodopa/ Carbidopa

- Common side effects include: nausea, GI upset, low blood pressure, headache
- Can be alleviated by a slow introduction of medication, other strategies
- Tends to be a **very well-tolerated medication**





???

- *I've heard I should take medication with food?*

*OR*

- *I've heard I should avoid taking medication with food?*

## Levodopa/ Carbidopa

- Symptoms that improve with levodopa are called levodopa-responsive
  - often motor symptoms such as stiffness, slowness (tremor)
  - sometimes non-motor symptoms such as soreness/pain, sweating, episodic anxiety, bladder urgency

???

- *What if I don't feel any different on medication?*
- Talk to your doctor!
  - Type of medication
  - How you take the medication
  - Constipation
  - (H. Pylori, etc)

# Levodopa/ Carbidopa

- Kicking in
  - ON time
- Wearing off
  - OFF time



???

- *If I don't feel the medication kick in or wear off, does that mean it's not working?*



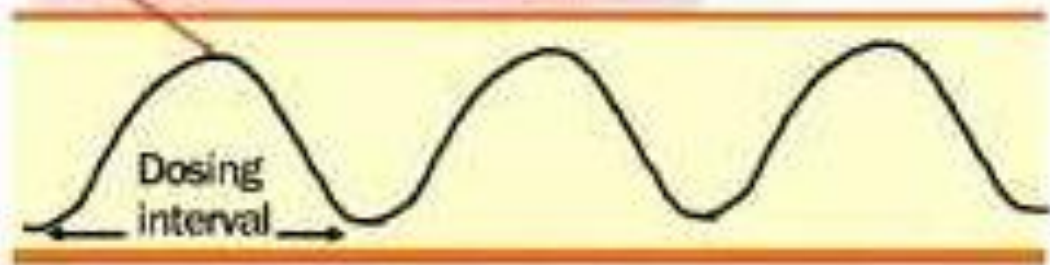
# Levodopa Therapeutic Window

Levodopa concentration

Early PD

Therapeutic window

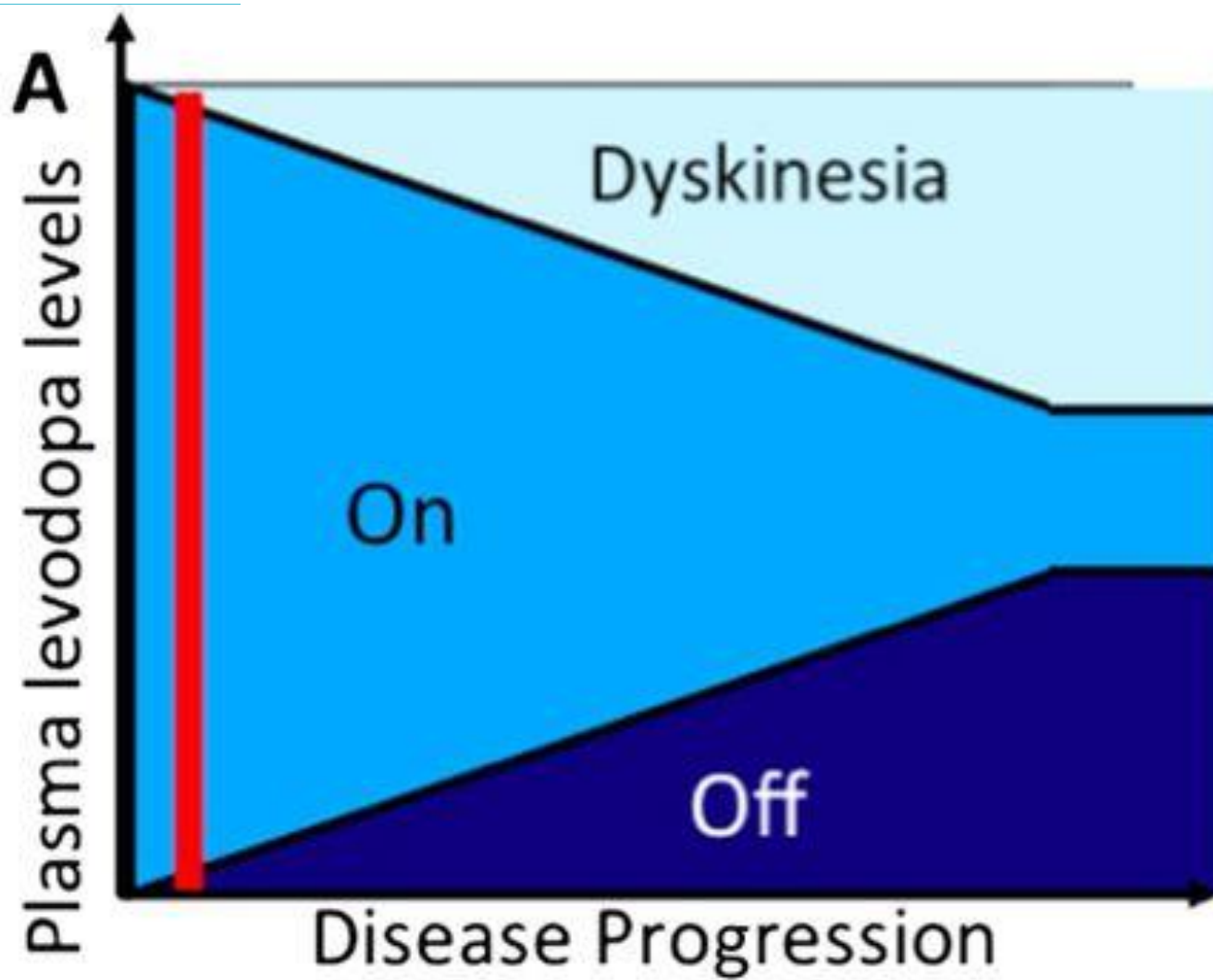
Dosing interval



???

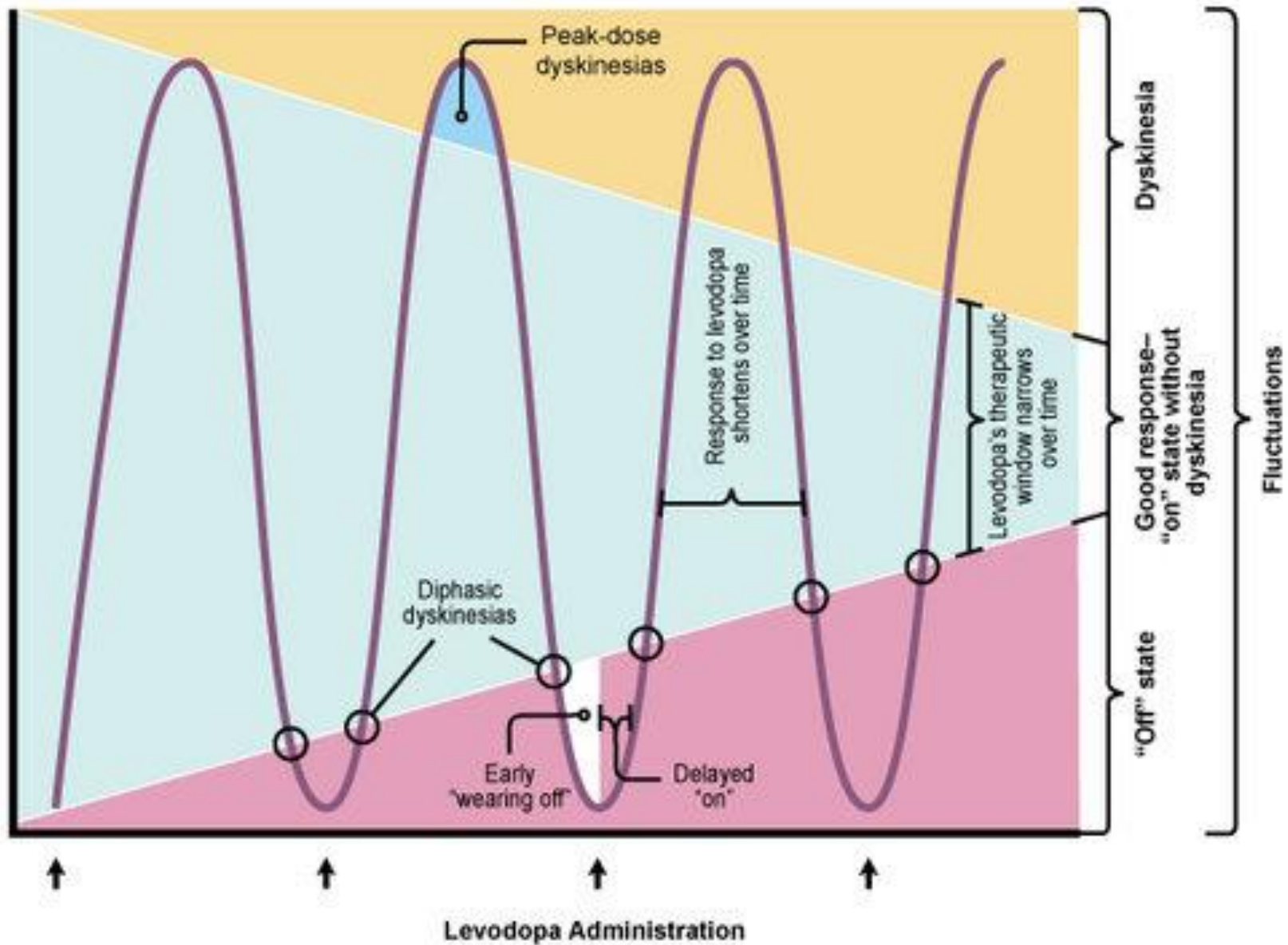


- *I've heard medication stops working in 5 years, so I want to save medication for later...?*





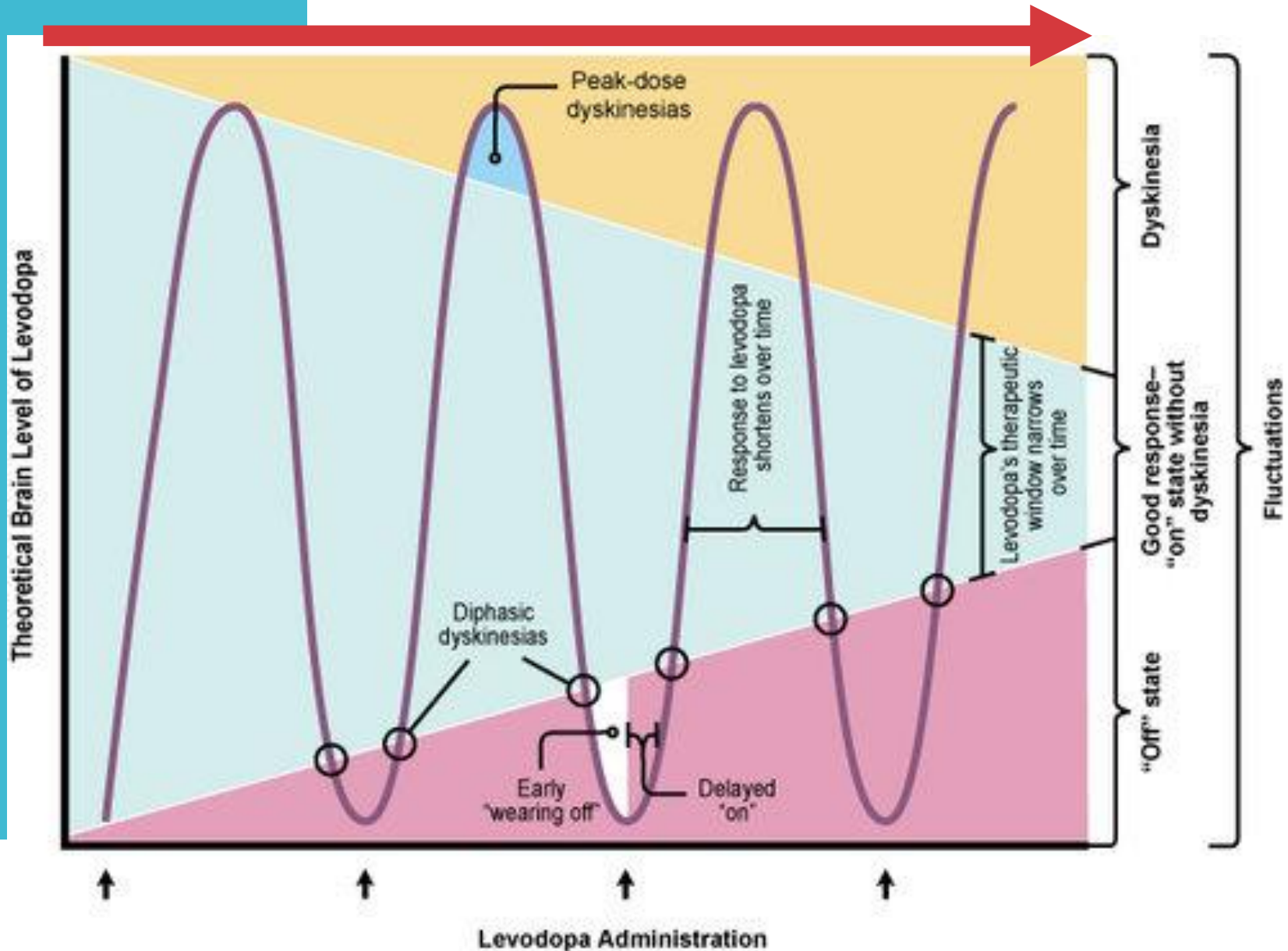
Theoretical Brain Level of Levodopa

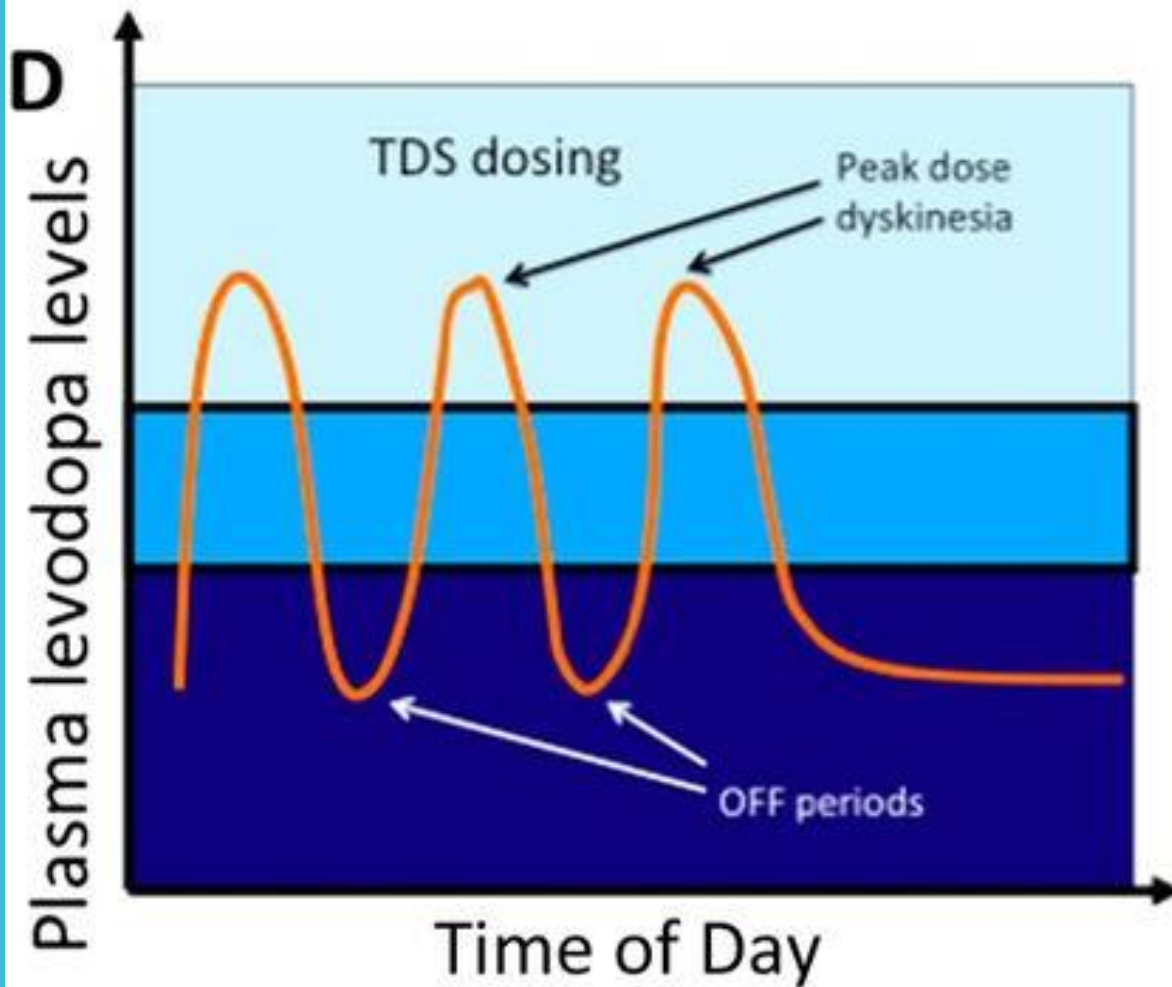


# Levodopa and Dyskinesia

- Dyskinesia = Rocking/Writhing movements
  - Age
  - Bothered?
- Current understanding: Dyskinesia correlate best with longer disease duration & higher individual doses of levodopa rather than a cumulative exposure to levodopa
- NOT a reason to wait to start medication

# Brain changes over time





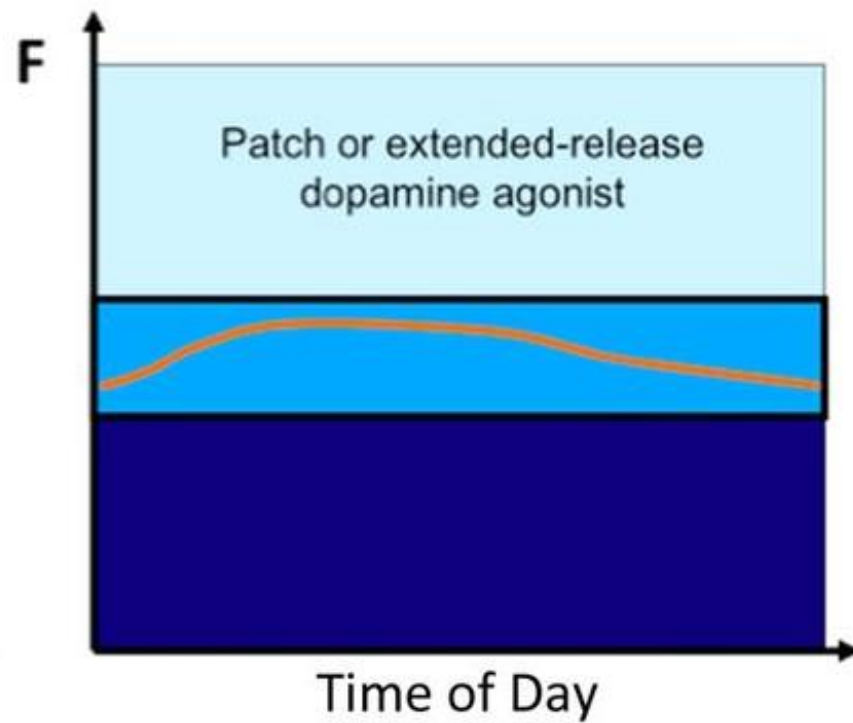
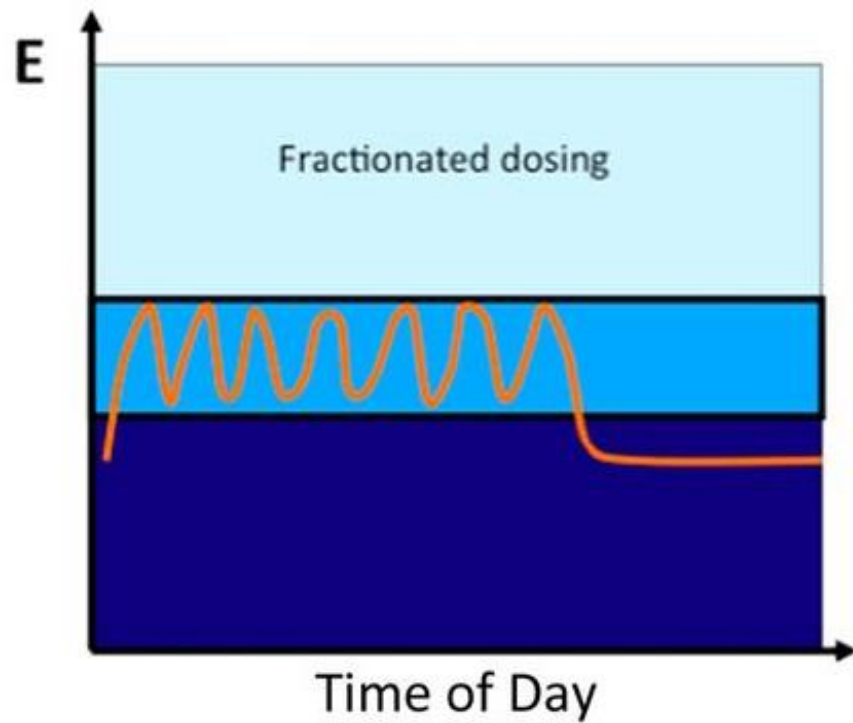
# Levodopa/ Carbidopa

- Immediate Release (IR)



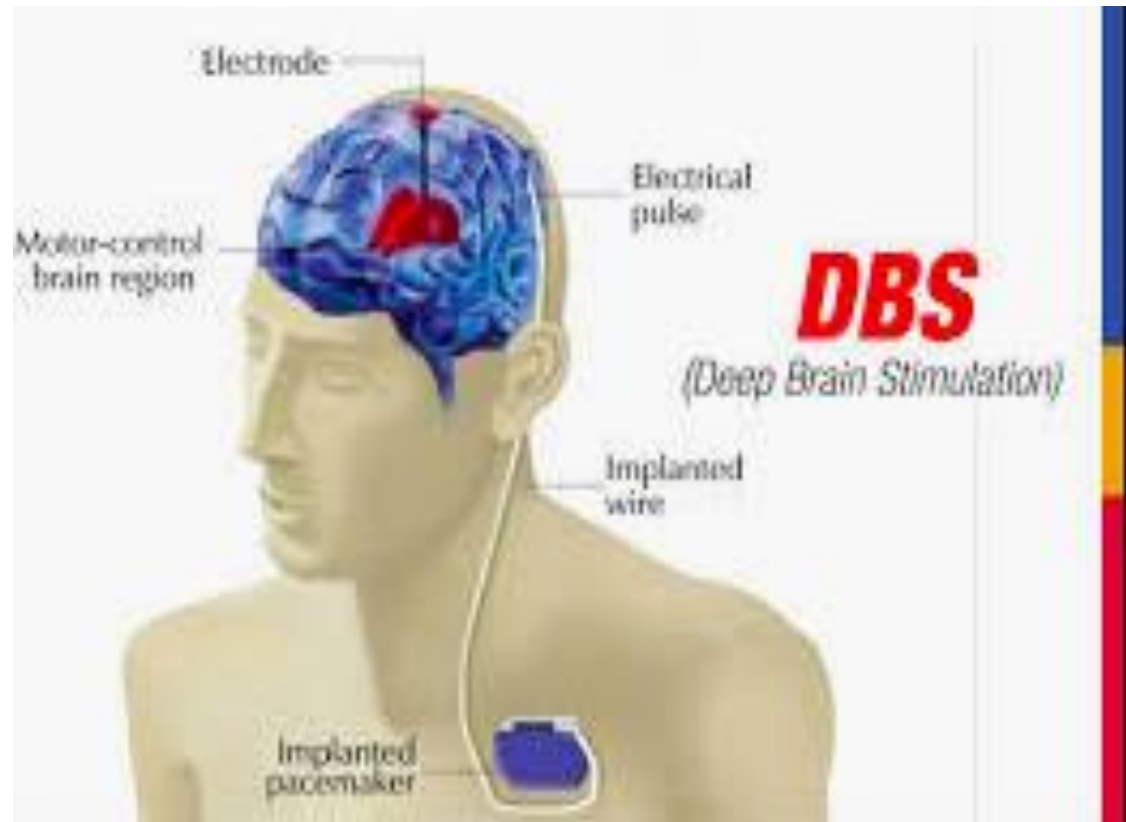
- Controlled Release (CR)





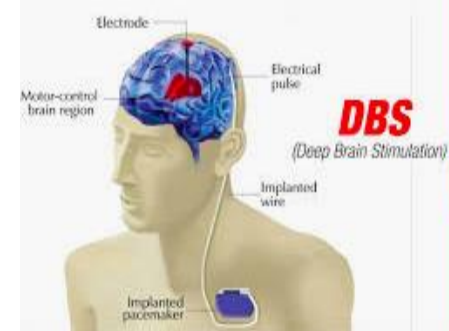
# What about Advanced Therapies?

- Deep Brain Stimulation



## What about Advanced Therapies?

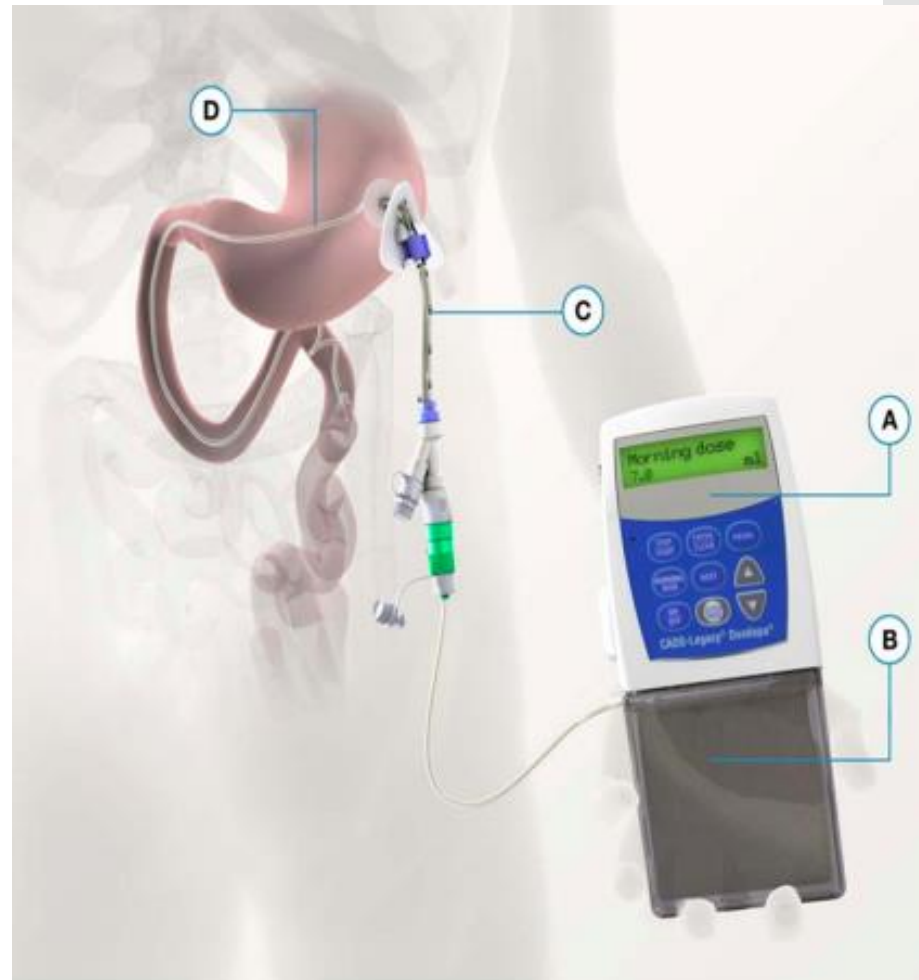
- Deep Brain Stimulation
- Smooths out motor fluctuations
- The **effect of surgery is equal to levodopa**
- Does not help all symptoms of Parkinson's
  - Balance, falls, swallowing, cognition & memory





# What about Advanced Therapies?

- Duodopa
- (intestinal gel)
- PEG tube



## Other medications

- **Monoamine oxidase inhibitors (MAOI)**
  - Rasageline, Selegeline, Safinamide
  - Less effective
- **Dopamine agonists**
  - Pramipexole, Ropinerole, Rotigotine
  - Impulse control disorders, sleep attacks

## Other medications

- **COMT Inhibitors**
  - Entacapone, Opicapone
  - Prevents breakdown of dopamine
- **Amantadine**
  - Helps minimize dyskinesias
  - Caution in advanced age due to cognitive side effects

???

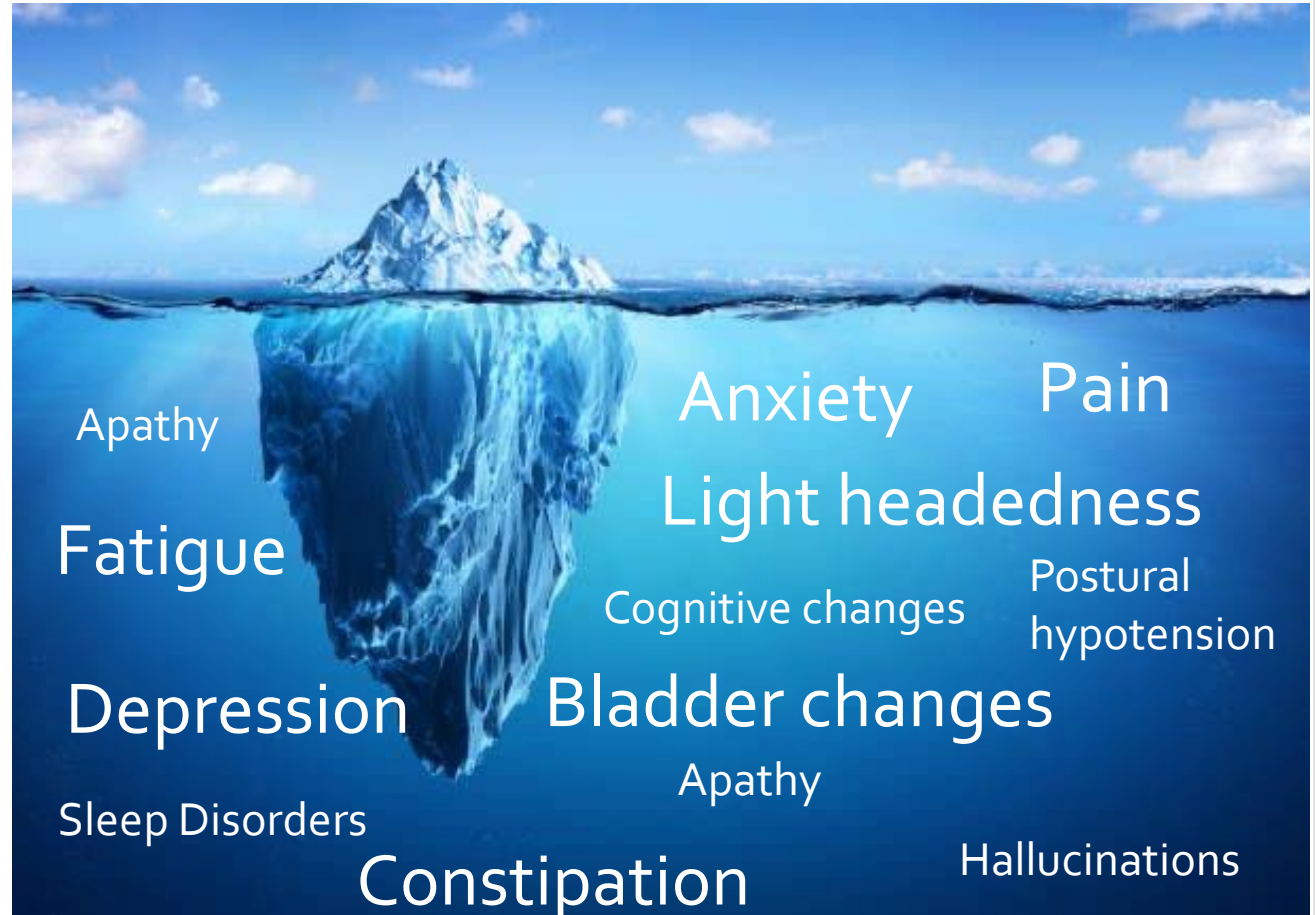
- *What about "natural" treatments for Parkinsons?*
- Mucuna pruriens aka velvet bean
- 2% levodopa by weight
- Extracts of seeds
- 6%-141%
- NONE contained 90-110%
- No carbidopa



## Treatment for Non- Motor Symptoms

- Non-Motor symptoms are very common in Parkinson's
- Many are not levodopa-responsive
  - Example: Sleep, anxiety
- Your family doctor is key in helping manage and treat these symptoms

# Non-Motor Symptoms



## Non-Motor Symptoms: Depression / Anxiety



Approximately 50% will notice changes to mood



Often overlooked and under reported



Can respond well to treatment  
(Talk therapy, CBT, Mindfulness)



Medications can help: SSRIs,  
Mirtazapine

## Non-Motor Symptom: Sleep Disturbances



- **REM Sleep Behaviour** – melatonin, clonazepam
- **Insomnia** – treating root cause
- **Bladder** – lifestyle modifications, (prostate), mirabegron



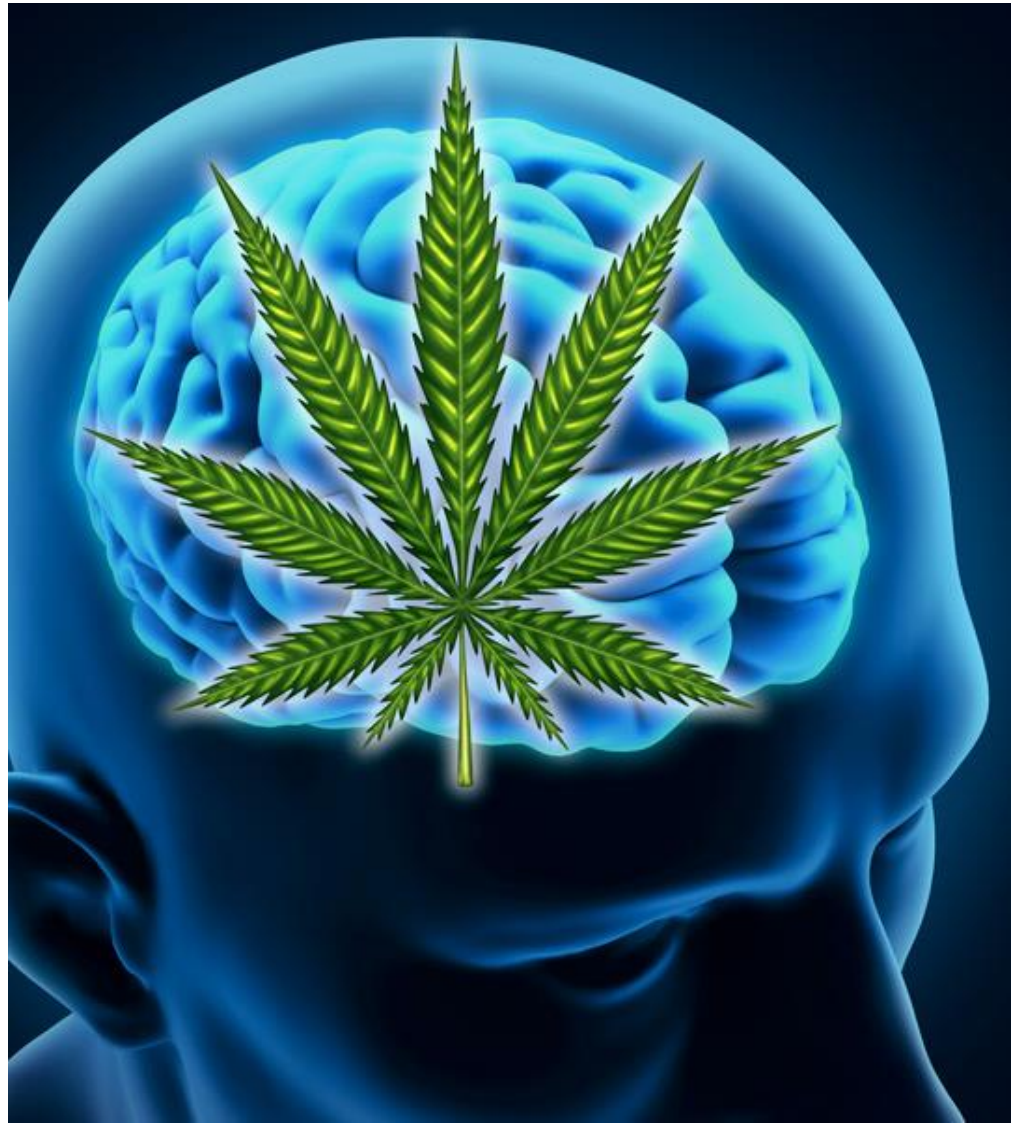
## Non-Motor Symptom: Constipation



- Parkinson's BC has a great resource online! (search PD BC Constipation)
- Dietary change, fluid, exercise
- Polyethylene Glycol (PEG)

# Alternative Therapies

??? Does Cannabis help with Parkinson's Symptoms?





Tuesday  
February 24  
@ 11 am

