



NEW AND EMERGING TREATMENTS IN PARKINSON'S

Melissa Mackenzie MD, FRCPC
Parkinson's Awareness Day
April 14, 2021

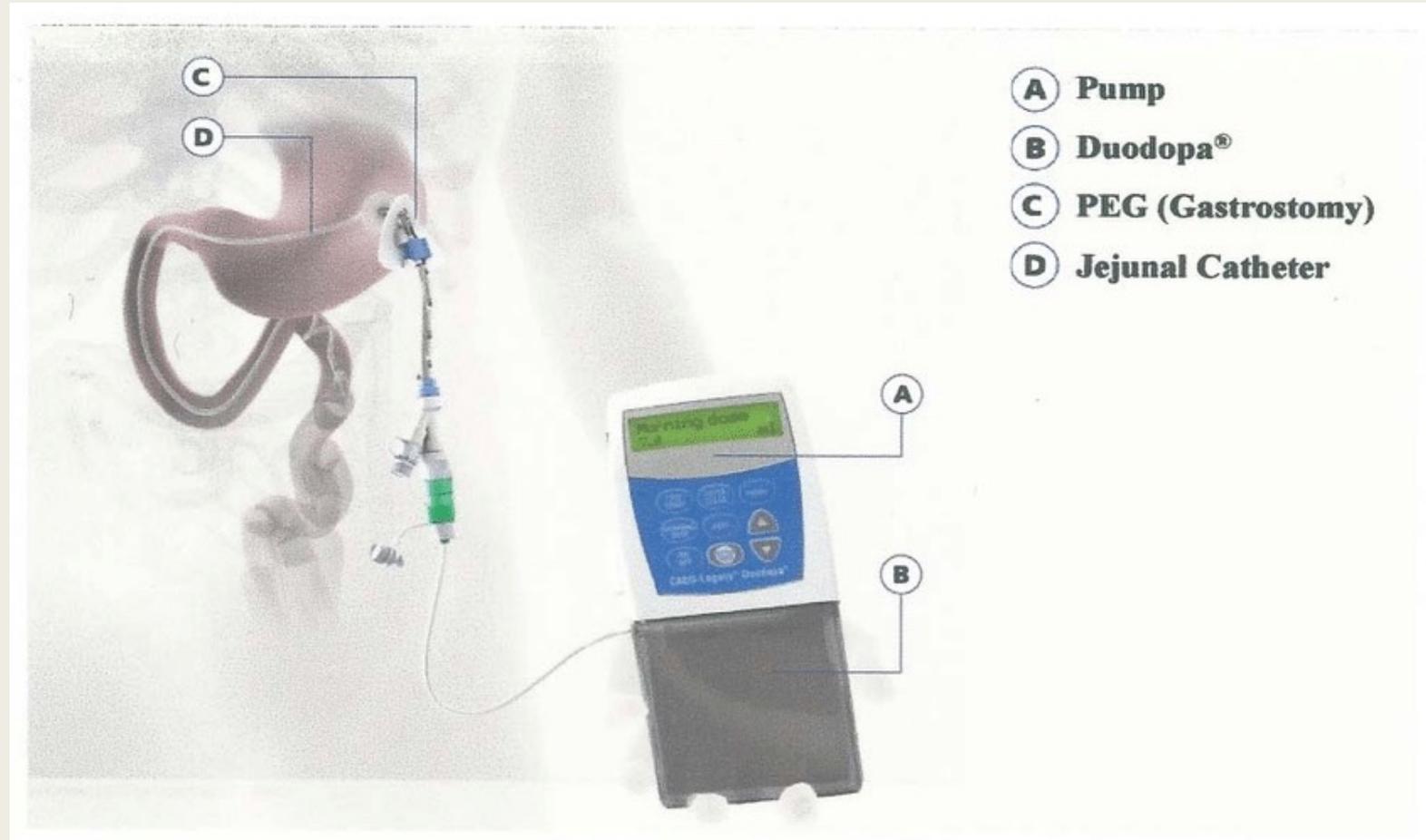


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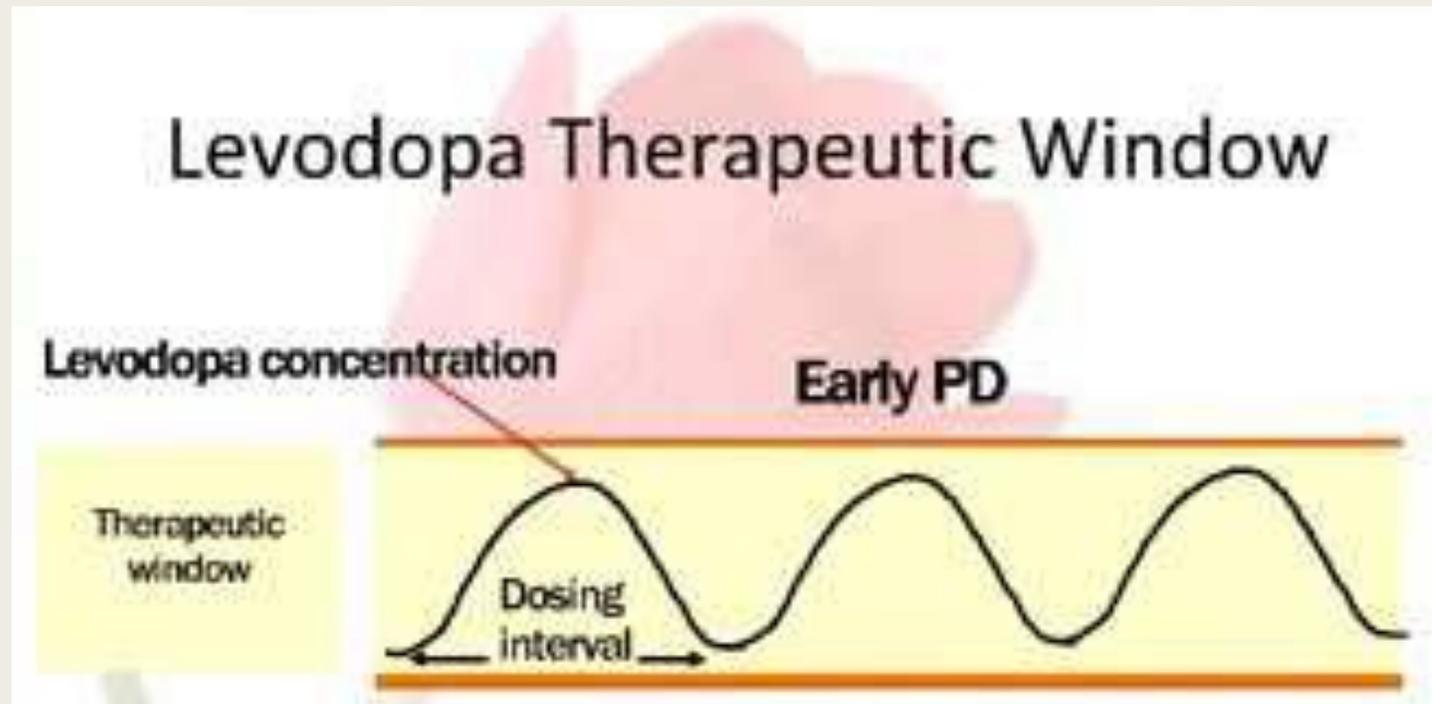
Diclosures

- none

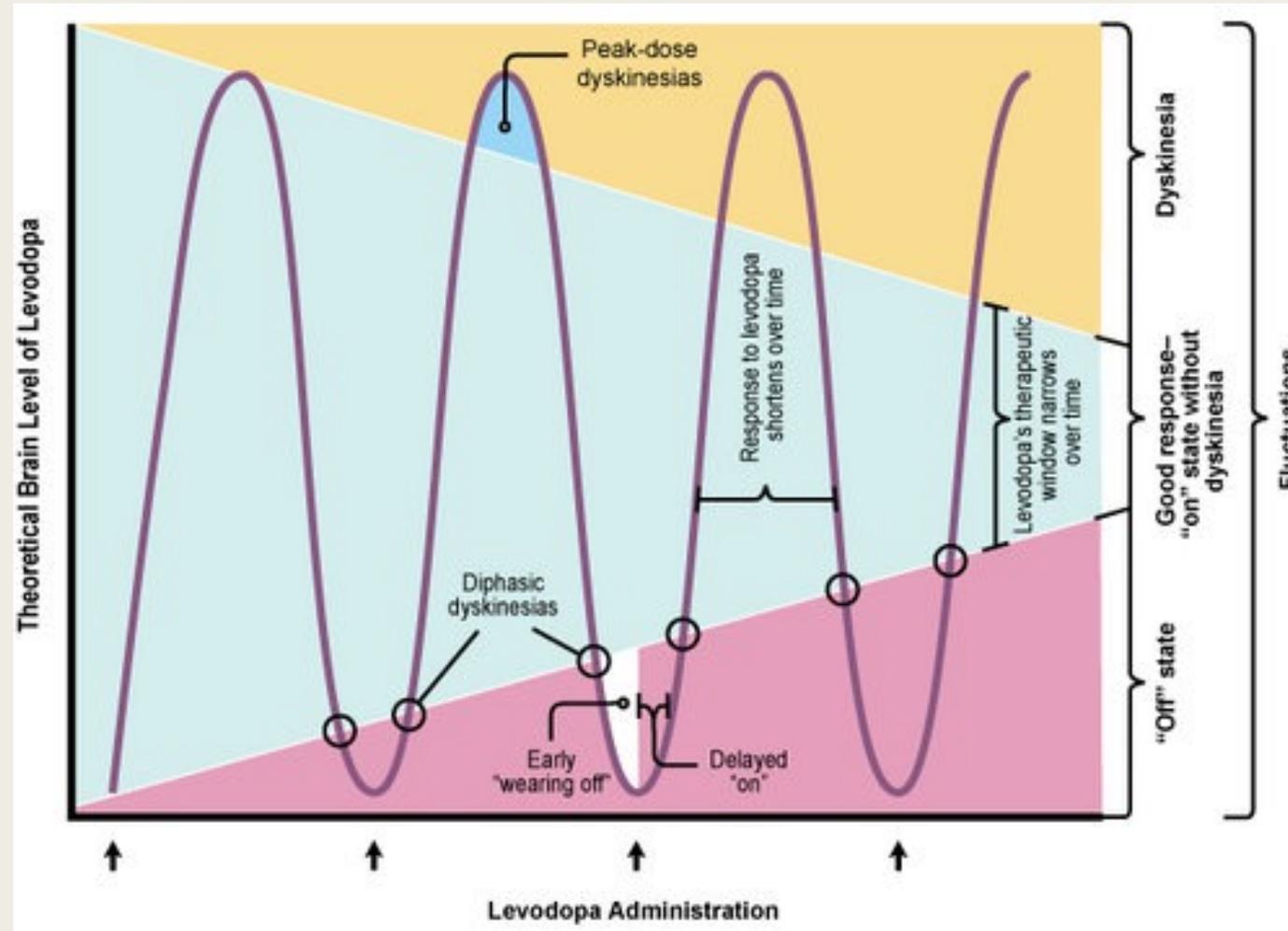
Duodopa



Duodopa



Duodopa





Duodopa

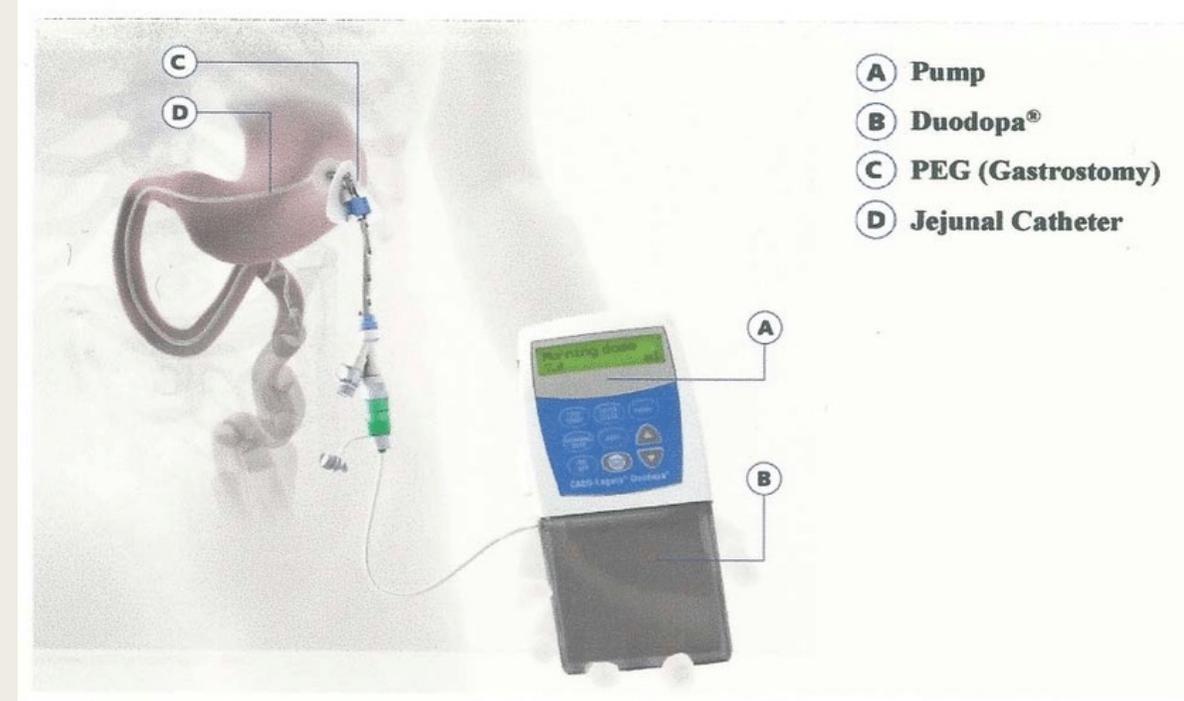
- Approved by Health Canada in 2014
- February 2017: BC Pharmacare coverage, but capped number of people annually
- After much advocacy, as of December 10, 2020 Duodopa is covered by Pharmacare Special Authority, without a cap on number of people
 - *Estimated cost of drug is \$60,000 per year*



Duodopa

Reduces OFF time
Reduces dyskinesias
Improves quality of life

Invasive
PEG tube issues
Programming



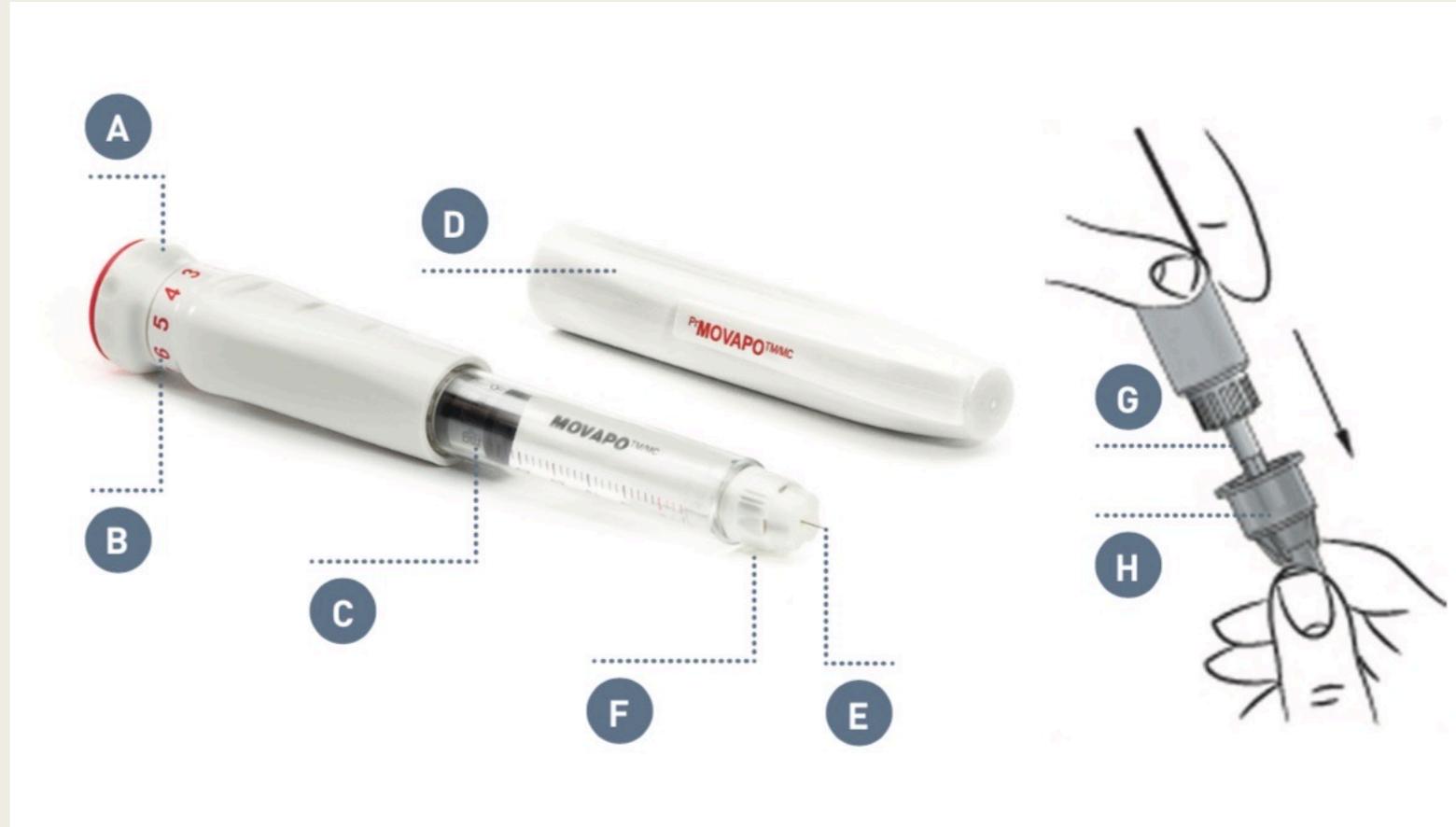
Apomorphine



- Works on dopamine receptors
- Similar effectiveness as levodopa
- Works faster than levodopa, for a shorter period
- First theorized to be helpful for PD in 1884!
- If taken by mouth, very little drug gets to the brain
- Therefore, taken via injection under the skin (subcutaneous, SC)



Apomorphine





Apomorphine

- First studied in the 1980s
- Focused on treating “off” periods in PD
- Approved in Europe in 2006
- SC (injected) Apomorphine received Health Canada approval in 2018
- Now covered under special authority in BC through Pharmacare
 - *For those with advanced PD, receiving optimized therapy, but still having bothersome OFF periods*



Apomorphine Infusion?

PARKINSON'S^{UK}
CHANGE ATTITUDES.
FIND A CURE.
JOIN US.

PARKINSON'S MEDICATION

How to use an
Apomorphine pump.





SL Apomorphine

- Further research has shown apomorphine absorbed under the tongue (sub-lingual, SL) to also be very effective
- Approved by Health Canada June 2020
- Not yet covered by Pharmacare in BC



Apomorphine





Apomorphine

“Rescue” medication

Reduces OFF time

Improves quality of life

Low blood pressure

Drowsiness

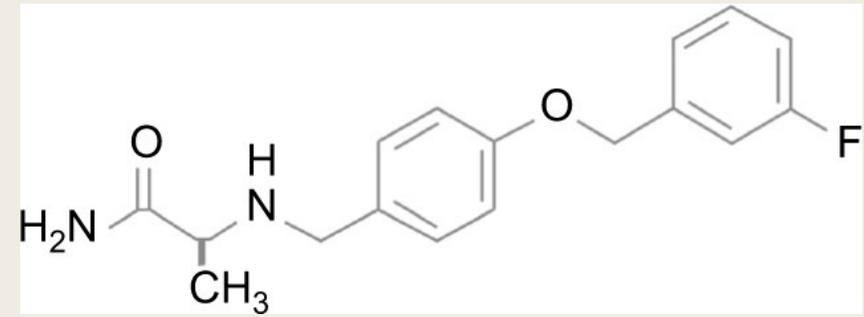
Stomach upset

(Irritation at injection site)

Titration in a Centre with expertise (for dosing, tolerability)



Safinamide



- Selective reversible monoamine oxidase B (MAO-B) inhibitor
 - *MAO-B breaks down dopamine*
- Selegiline and Rasagiline are also MAO-B inhibitors
- Add-on therapy for motor fluctuations
- Approved in 2015 in Europe
- Approved by Health Canada March 2020
- Under review by Pharmacare for coverage in BC
- Support from drug company currently available





Safinamide

Reduces OFF time

Increases ON time without troublesome dyskinesias

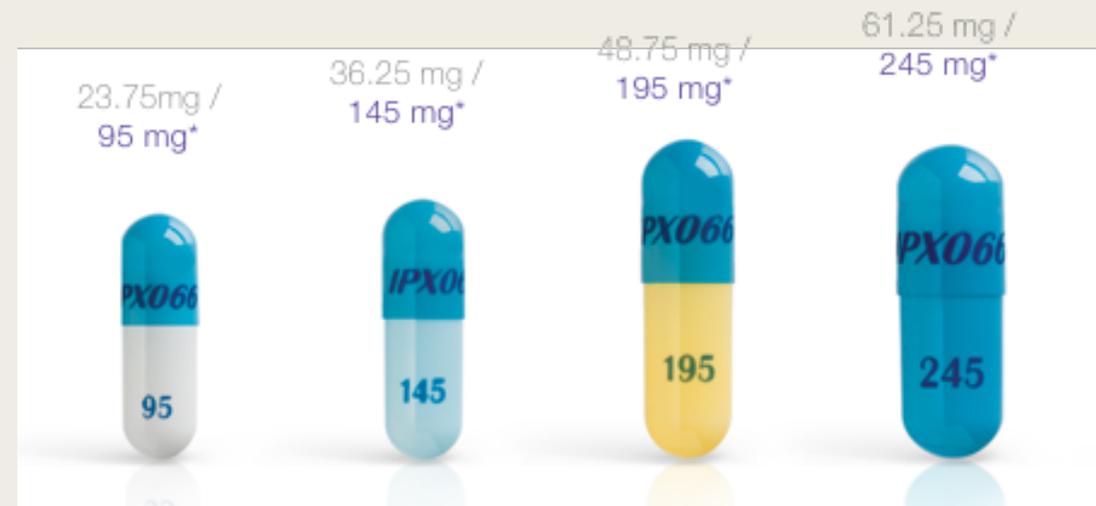
Nausea

Headache

Confusion, hallucinations



ER Levodopa/Carbidopa (Rytary / Numient)



- Capsule of immediate, intermediate and extended release levodopa with carbidopa
- Goal: Benefits of IR levodopa, without downsides of current CR formulations and to require fewer levodopa doses over 24 hours
- Capsule can be sprinkled onto food
- Similar potential side effects as Sinemet
- Approved in the US in 2015 (EU as Numient)
- Not yet available in Canada



Cost?

Inhaled Levodopa

- As-needed inhaler to treat OFF periods
- Approved in the US in 2018
- Might work as soon as 10 minutes after taking
- Long term effects not known; not studied on those with lung conditions
- Nausea, cough, respiratory infections



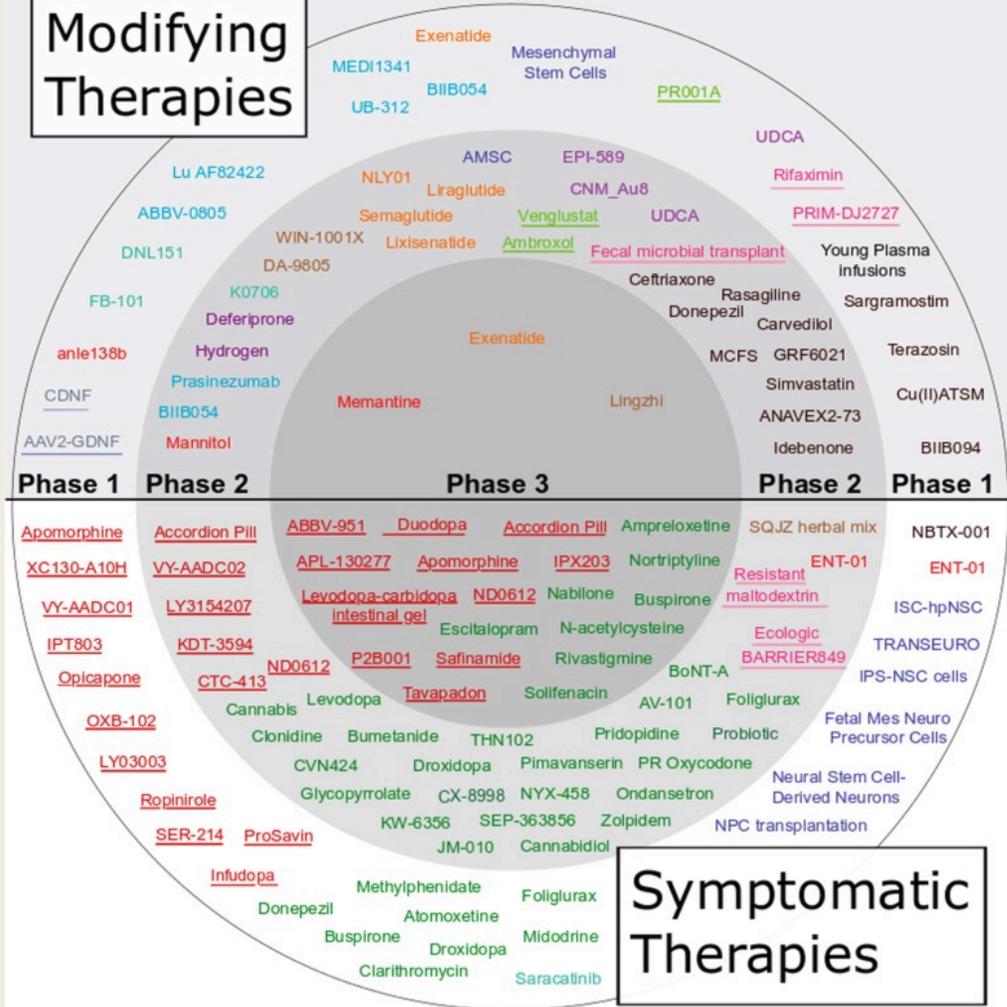
Other Symptomatic Therapies? Disease Modifying Therapies?



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- Very active area of research, but early stages
- Many different studies with different approaches looking at different ways to halt or slow progression of Parkinson's pathology

Disease Modifying Therapies



Therapy Categories

- | | | | |
|--|---|---|--|
| ■ Targeting aSN | ■ Immunotherapy | ■ Microbiome/GIT | |
| ■ DA symptomatic | ■ GBA | ■ Kinase inhib. | |
| ■ Non-DA symp. | ■ Neurotrophic | ■ Botanicals | ■ Cell therapy |
| ■ Energy/mitoch. | ■ GLP-1 agonist | ■ Antioxidants | ■ Other |



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Clinical Trials Review

Parkinson's Disease Drug Therapies in the Clinical Trial Pipeline: 2020

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and Simon R.W. Stott^{d,*}



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Disease Modifying Treatment

- Exercise!

