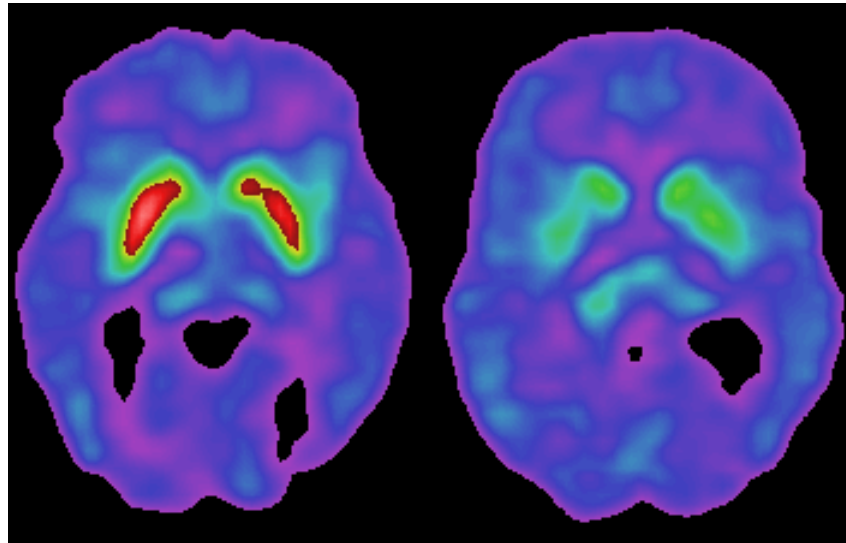




# PET scan

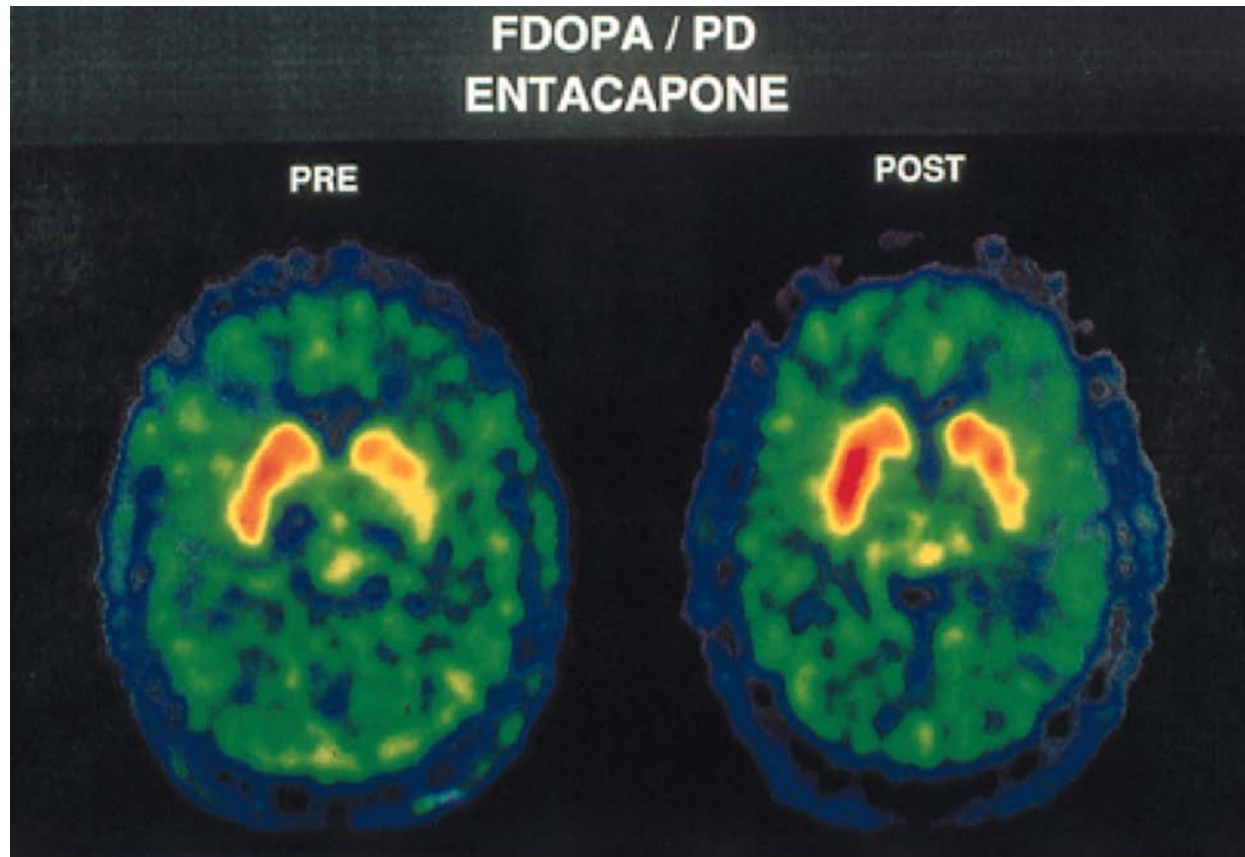
---



normal

Parkinson's

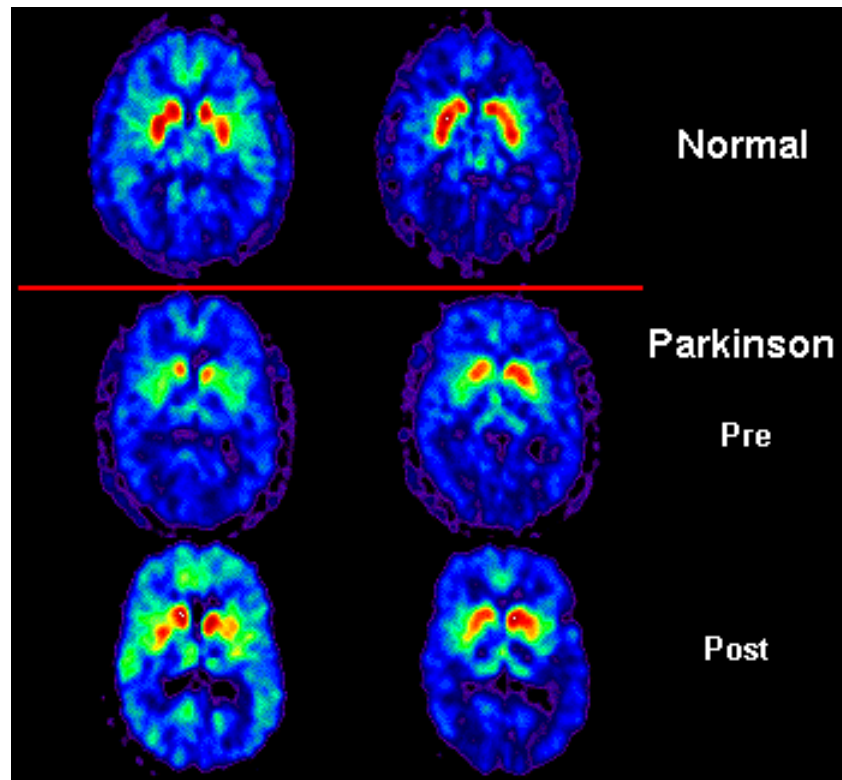
# COMTESS - PET scans

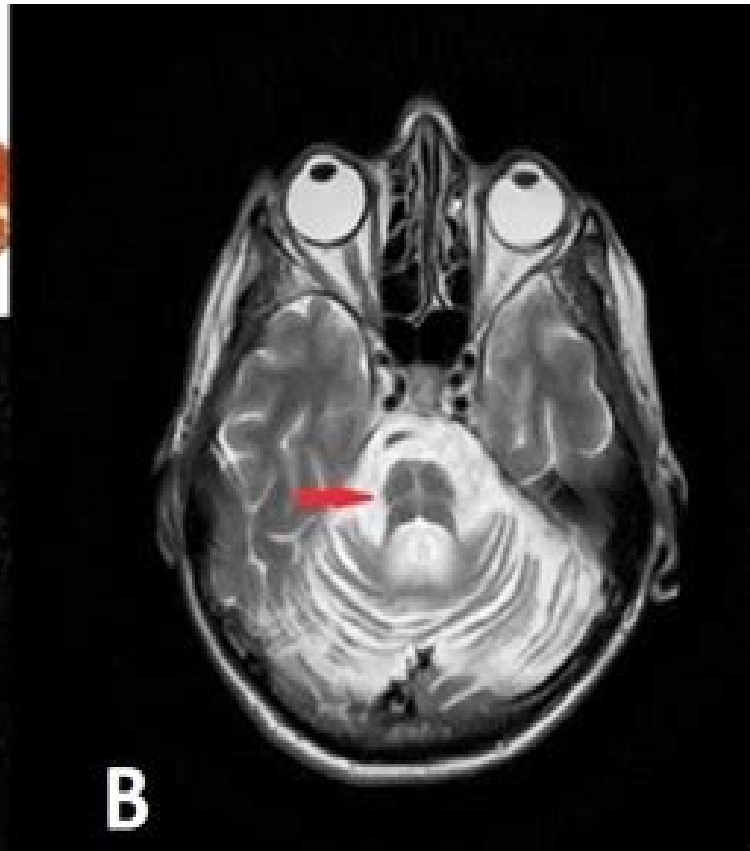


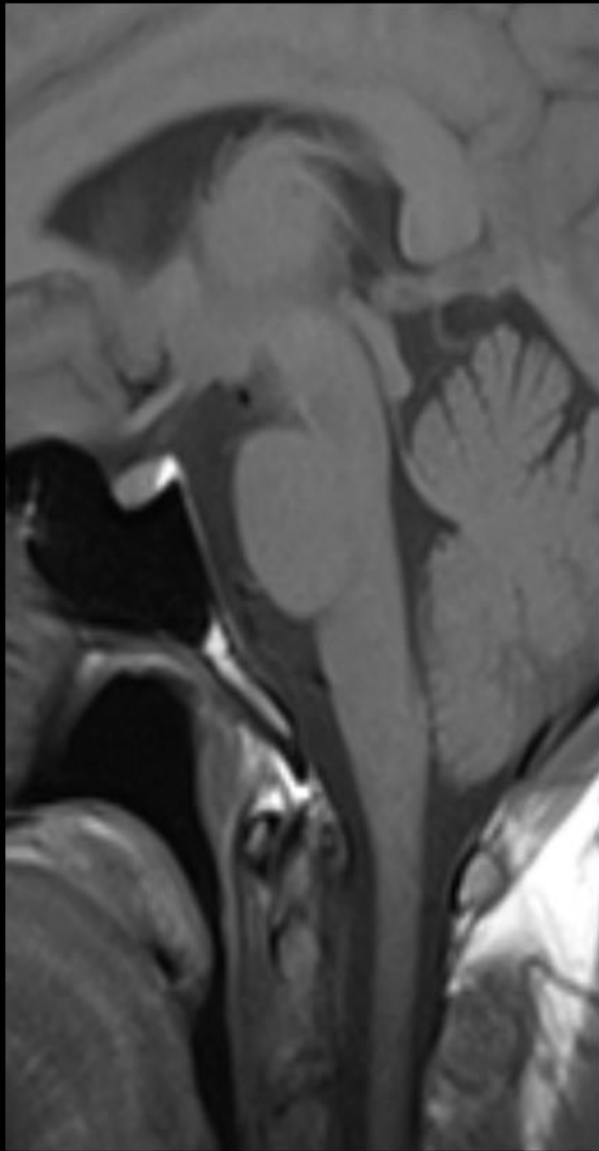


## SPECT(DaT) scan

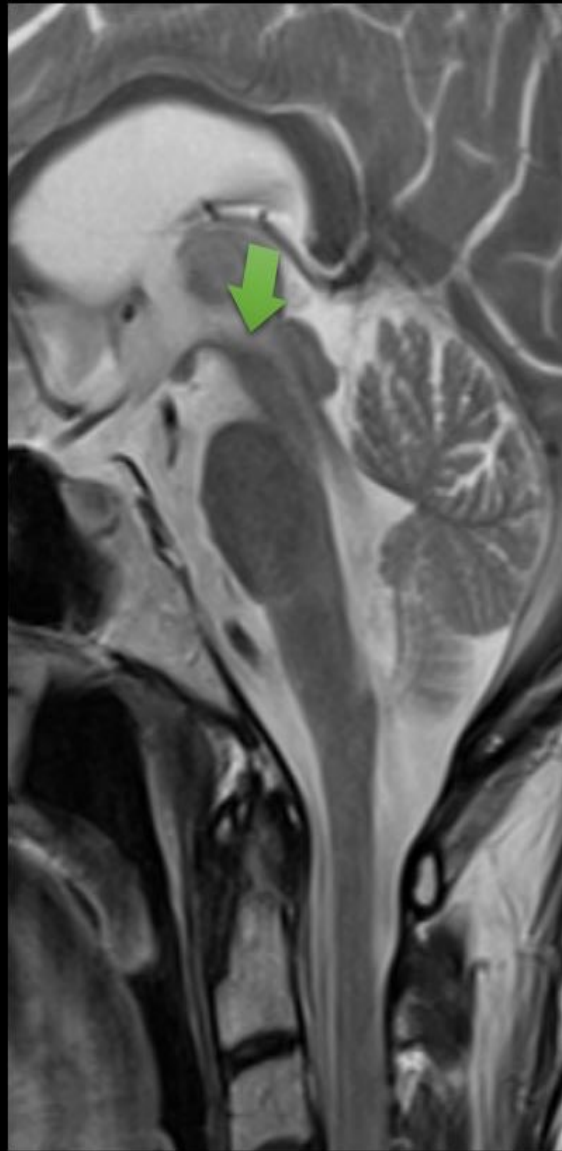
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NORMAL



PSP



The Humming Bird !!





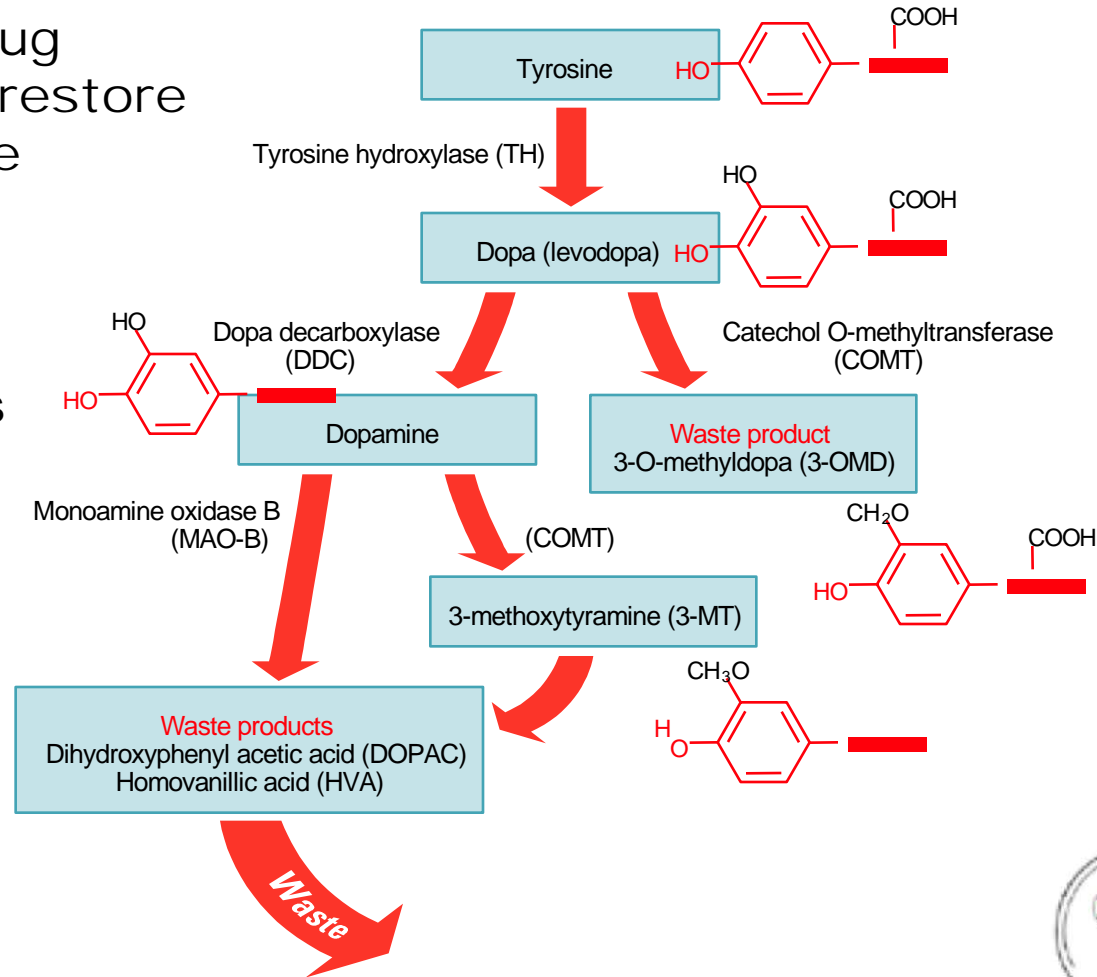
What treatment is available? Can you  
Cure me?

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# Drug therapy

The aim of drug therapy is to restore lost dopamine function ...

... the solution is to provide the precursor for dopamine – **levodopa**





# Levo Dopa

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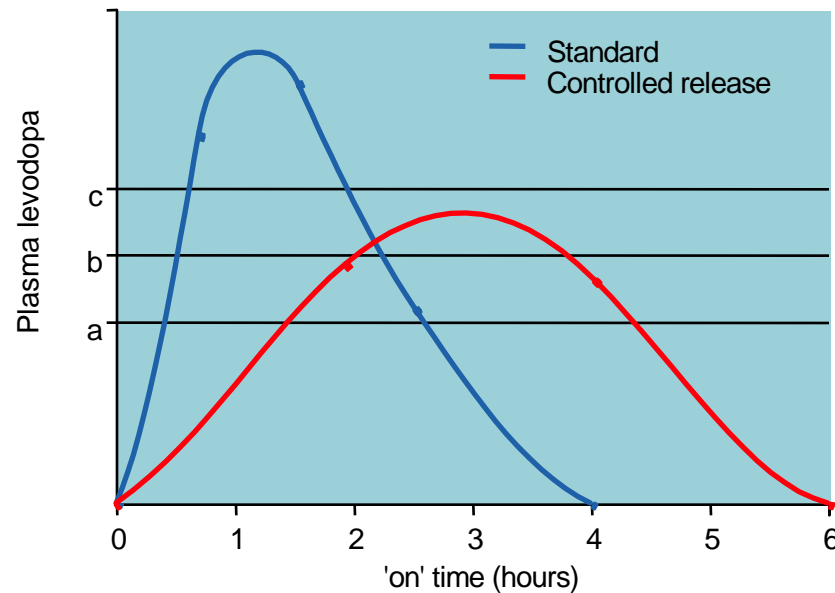
- First used late 60's First line therapy early 70's
- Combined the peripheral decarboxylase inhibitor
- Complications: motor fluctuations and dyskinesias
- Delay initiating therapy?
- Free radical formation



# Alleviating fluctuations

Motor fluctuations can be alleviated by:

- changes in the dose regimen
- using a controlled-release preparation
- COMT inhibitors
- MAO-B inhibitors
- dopamine agonists
- diet





# L-Dopa

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- Standard preparations
- Slow release
  - may be useful for nighttime hypokinesia
- Slow release vs immediate release trial
  - 618 patients
  - 5 year follow up
  - no significant difference in functional status or motor fluctuations



# Dopamine agonists

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- Ergot / non ergot. Problems with fibrosis
- Adjunctive to treatment
- De novo patients
- long short acting
- predose with Domperidone
- Apomorphine
- Adverse effects
  - psychosis, hallucinosis, confusion, nausea, postural hypotension, drowsiness, sleep and behavioural disturbance



# Neuroprotection and Dopamine agonists

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- Real – PET
- CALM –PD( SPECT)



# MAOI-B Selegiline / Rasagiline

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- Monotherapy
- Adjunctive
- Neuroprotection
- Mortality



# Amantadine

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- Increase dopamine release, inhibit dopamine re-uptake
- NMDA antagonist
- most beneficial in dyskinesias in late disease.
  - >25% reduction in dyskinesia duration and severity in 70% patients (Rajput 1998)



# Anticholinergics

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- Mainly treat tremor and rigidity
- Little role in elderly, side effects.



# COMT inhibitors

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- Prolongs the action of dopamine in the synaptic cleft
- Entacopone :diarrhoea (7-10%), dyskinesia, neuropsychiatric effects, yellow urine
- Parkinson's Disease study Group 1997
  - 205 patients with PD
  - entacopone or placebo given with each dose of L-dopa
  - total daily 'on' time increased by one hour
  - functional scores increased by 10%





# Other Drugs

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Mirtazipine

- Donepezil
- GLP-1 Exenatide
- Marijuana!!
- Supplements.....



What else can I do? What about exercise?

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- Tai Chi

- Boxing ( rock steady boxing)

- Dancing



MJF web site mentions a new treatment is it for me?

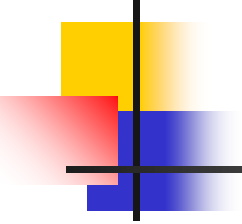
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# Deep brain Stimulation

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- Ideal candidates: young, no cognitive impairment, severe motor fluctuations, on L-dopa > 7 years (responders)
- Globus pallidus Sub thalamic nuclei
- Thalamic nuclei - tremor



## MRI deep brain stimulation

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