Imaging the Invisible: How PET Scans Reveal Parkinson's Disease

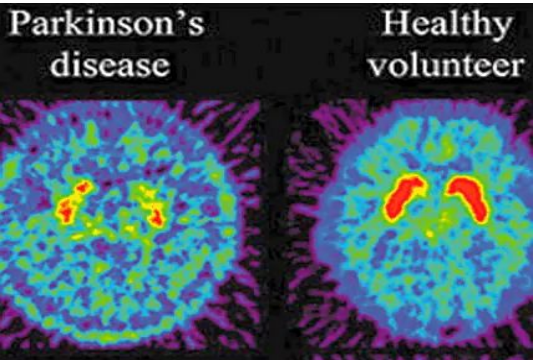
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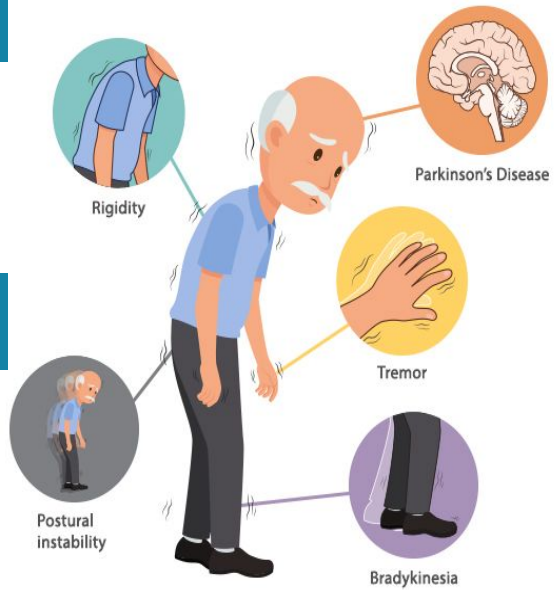
The Disease You Cannot See

- Parkinson's is a world know neurological disorder
- Common symptoms include: tremors, stiffness, loss of balance and slow movement
- Brain changes began long before visible symptoms
- PET scans can reveal these hidden changes within the brain

Finding Parkinson's Before it Shows

- PET can show the changes in dopamine decline
- This imaging can reveal abnormalities that may not be obvious through the physical examination
- Early detection can help slow the disease process and disease management





What Happens Inside the Brain?

- Neurons located in the substantia nigra pars compatca which are remotely responsible for motor control being to rapidly decline
  - As these neurons decline bradykinesia, tremors, and instability become more noticeable
  - These symptoms reflect a deeper disruption of the brains motor control network

What is a PET Scan?

- PET stands for positron emission tomography
- Unlike MRI and CT, PET shows biological and chemical activity
- A small amount of radioactive material is introduced into the body
- The tracer travels through the bloodstream and "clings" to diseased cells
- Determined by the amount of radionuclides conjoined determines how bright the finished image would be
- Red indicating high functionally, compared to less which results in yellow/green

References

- National Institutes of Health. *PET Scans may predict Parkinson's Disease*
- Cleveland Clinic(2022). *Positron emission tomography scan*
- Parkinson's Foundation(2026). *Bradyknesia*
- Neurology & Sleep Center(2021). *What is Parkinson's*

Making the Invisible Visible

- Parkinson's disease involves hidden changes in the brain's dopamine system
- By using PET, physicians can detect the early onset of the disease and help slow the progression
- PET continuously contributes to disease research, monitoring, and understanding how to help the complex disease