Parkinson’s Disease

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What Is Parkinson’s Disease

• Named after English doctor James Parkinson
  — Published the first detailed description in 1817
    • An Essay on the Shaking Palsy
• Neurodegenerative disorder of the basal ganglia affecting the motor system
• Caused by the loss of dopamine-producing brain cells in the substantia nigra (midbrain)
• Most common with people over the age of 50

Symptoms and Diagnosis

Symptoms
• Movement Related
  — Shaking
  — Fewer small postural changes
  — Slowness of movement
  — Postural instability
• Other
  — Depression
  — Dementia
  — Sensory and sleep problems

Diagnosis
• No blood or lab tests
• Based off neurological examination and medical history
• Doctors may request brain scans or other lab tests to rule out other diseases
• Lewy bodies in the midbrain during an autopsy is considered proof of Parkinson’s disease

Pathology

Adapted from Yin & Knowlton (2006)
Treatment

• Typical treatment involves L-dopa and carbidopa
  – Carbidopa delays the conversion of L-dopa to dopamine until it reaches the brain
  – Helps approximately 75% of parkinsonian cases
    • Tends to help with speed and initiation of muscle movements, but not tremors
• Deep brain stimulation has been recently approved by the FDA

Lifeware Spoon

• Uses same concept as self-stabilizing cameras

References