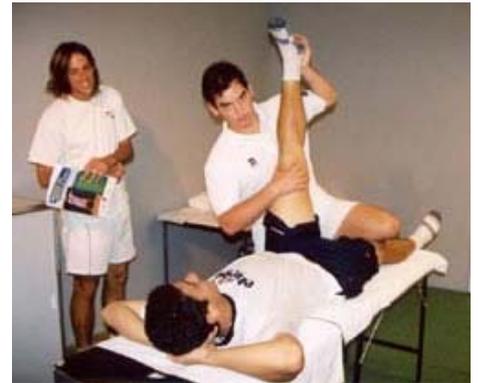
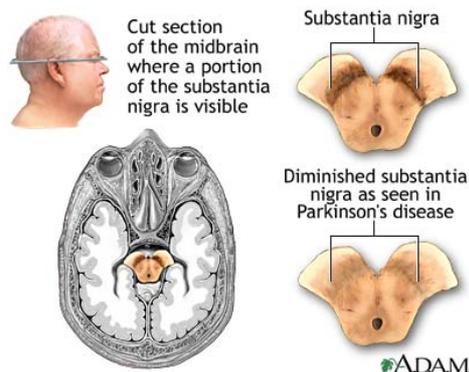
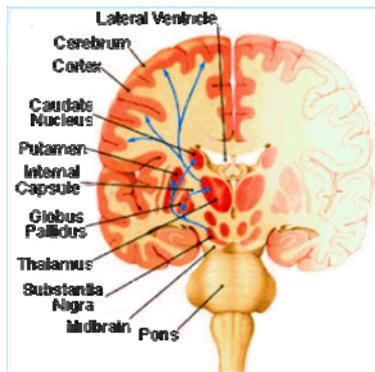


# PARKINSON'S DISEASE

**Definition:** A chronic (long duration), progressive disease of the nervous system characterized by the cardinal features of rigidity, akinesia (loss of voluntary activity), bradykinesia (extreme slowness of movement and reflexes), tremor (trembling or shaking), and postural instability.<sup>1,2,6</sup>

**Pathophysiology:** Most common type of parkinsonism in patients is due to abnormalities in function of the Basal Ganglia in the brain. There is a degeneration of dopaminergic neurons (nerve cell) that produce dopamine ( a neurotransmitter). When dopamine levels decreases (80% loss), there is also loss of spontaneous movement.<sup>1,2,6</sup>



**BRAIN CROSS SECTION NORMAL & PARKINSON'S BRAIN**

**STRETCHING EXERCISES**

**Affected People/Population:** Occurs in 1% of the population older than 55 years old and becomes increasingly common with advancing age. The mean age of onset is 58 and 62 years old with males having a slightly more risk than females.<sup>1,2,4</sup>

**Medications:** There is no cure for Parkinson's disease. Medications are given to manage the direct and indirect effects of the disease. Selegiline is given in early stages to slow the progression of the disease. Dopamine replacement (L-Dopa) is the mainstay of drug therapy.<sup>1,2,3,6</sup>

**Surgery:** Surgery may be performed depending on the type/stage of the patient. Stereotaxic surgery has become an accepted treatment to patients who respond poorly to medication. Deep brain stimulation involves the implantation of electrodes in brain to block nerve signals that cause symptoms. Transplantation of cells capable of delivering dopamine into the brain is an experimental and currently under investigation.<sup>1,2,4</sup>

**Physical Therapy:** Early intervention is critical in preventing the devastating musculoskeletal impairments that develop later in the patients. These includes: 1) relaxation exercises 2) Flexibility exercises 3) Mobility exercises 4) Balance activities 5) Motor learning strategies 6) Functional adaptations 7) Aerobic conditioning 8) Respiratory exercises 9) Group and home exercise.<sup>1,2,4,7</sup>

## References:

1. Neurology and Neurosurgery Illustrated by Lindsay and Bone 2<sup>nd</sup> Ed.
2. Physical Rehabilitation Assessment and Treatment by O'Sullivan and Schmitz 4<sup>th</sup> Ed.
3. Pharmacology by Jacob 2<sup>nd</sup> Ed.
4. Rehabilitation Medicine by De Lisa and Ganz 3<sup>rd</sup> Ed.
5. Orthopedic Physical Assessment by Magee, 3<sup>rd</sup> Ed.
6. Merriam-Webster's Medical Dictionary 1995
7. Therapeutic Exercises by Kissner and Colby 4<sup>th</sup> Ed.