

Clinical Approach to Neurologic Disorders

- GENERAL SYMPTOMS AND SIGNS

- Anatomic
 - Pathophysiologic
 - Phenomenologic

- TREATMENT

- Symptomatic
 - Protective
 - Curative
 - Surgical

Surgical Approaches

- **Ablative**

- thalamotomy
 - Pallidotomy

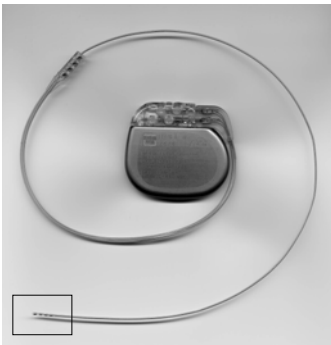
- **Electrical stimulation (DBS)**

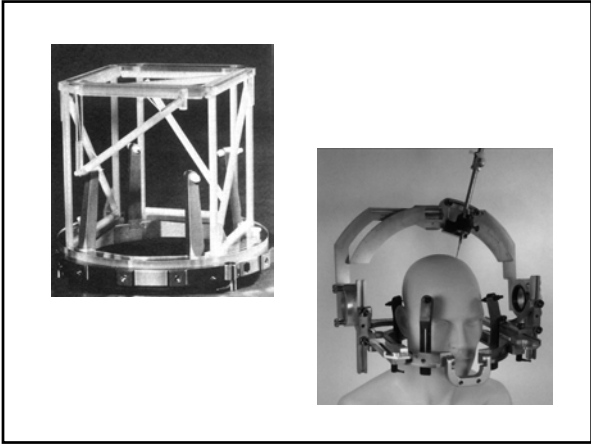
- VIM thalamus, globus pallidus internus, sub-thalamic nucleus

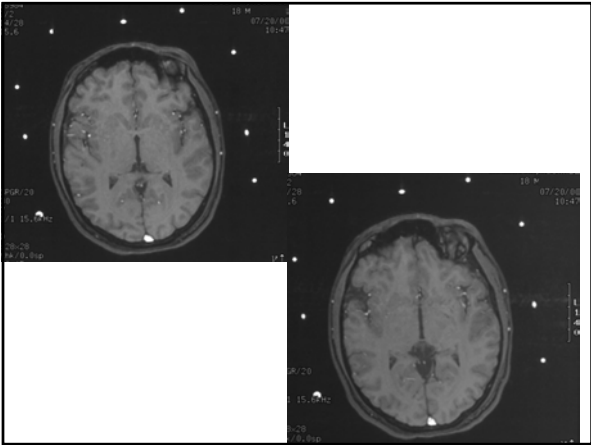
- **Transplant**

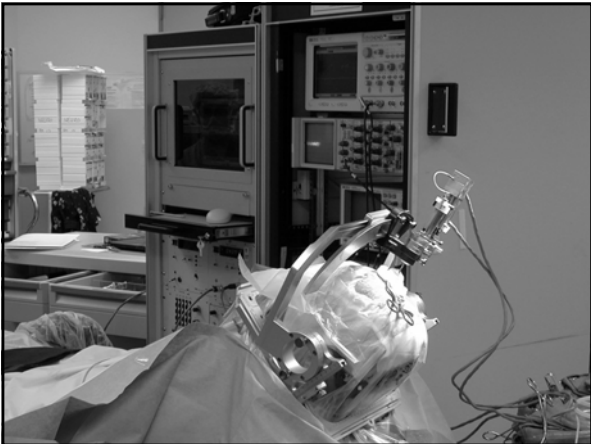
- autologous adrenal, human fetal, xenotransplants, genetically engineered transplants

Medtronic DBS system









Disease Classification

Physical Exam

In neurology, asymmetric or focal findings are typically most important

General medical *Brief* comments on relevant pulmonary, cardiovascular (murmurs, bruits), musculo-skeletal (deformities, asymmetries) and skin (rashes, other markings).

Physical Exam

Neurologic

- I
- II
- III, IV VI
- V sensory:
- motor:
- VII
- VIII
- IX - XII

Physical Exam

Motor exam

Strength	e.g. MRC 5/5 point scale
Muscle mass	
Tone	
Reflexes	deep tendon (can be elicited in the jaw) cutaneous (Babinski, abdominals)
Rapid alternating movements	speed, decrement rhythm
Involuntary movements	tremor myoclonus chorea athetosis tics dystonia ballismus dyskinesia
Motor apraxias	dressing, combing hair, brushing teeth

Physical Exam

Sensory exam

Cranial divisions of V	
Other head and neck	Angle of jaw Spinal levels Nerve or root
Primary modalities	Light touch Two point discrimination Pain Vibration Position sense
Higher cortical modalities	Graphesthesia Stereognosis

Physical Exam

Coördination

Usually, but not always, tests for cerebellar dysfunction

Targeted voluntary movements
finger-to-nose
heel-shin

Rapid alternating movements
fine hand, finger control

Gait and posture

Stride, stance
truncal sway, arm swing

Posture
stooped, falling forward, backward

Freezing
in doors
on or off medication
at start of walking

Disorders of muscle tone

I. HYPERTONICITY

Disorders of muscle tone

II. HYPOTONICITY

III. GEGENHALTEN

Basal ganglia disease

NEGATIVE symptoms

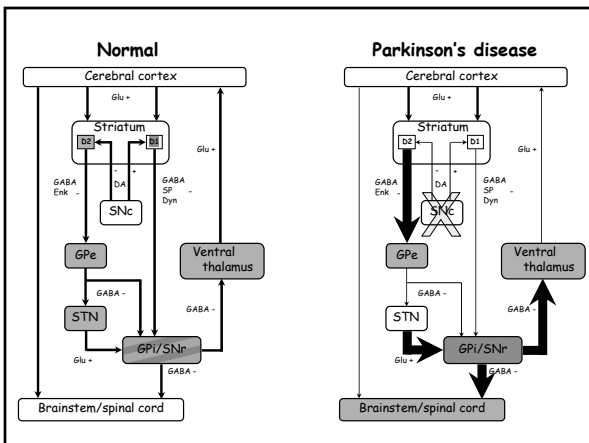
POSITIVE symptoms

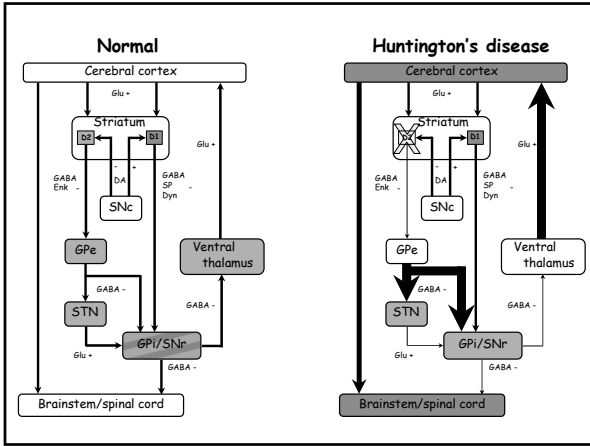
Basal Ganglia

- Subcortical forebrain structures connected to sensorimotor and limbic systems
- Crucial part of the "control circuitry" that allows for the smooth execution of voluntary movement

Basal Ganglia

- Multiple cortico-basal ganglia-thalamo-cortical circuits
- Help program and carry out motor plans
- Scale the amplitude and effort of the execution of tasks with relation to requirements
- Incorporate motivation and emotional drives

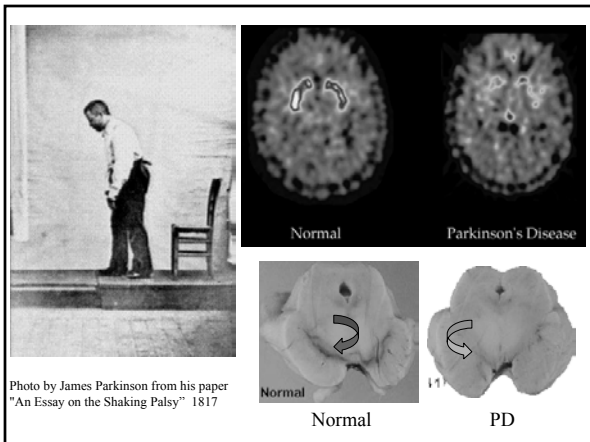




Basal ganglia disease

Tremor

Dystonia



Basal ganglia disease

Chorea

Athetosis

Ballism

Basal ganglia disease

Myoclonus

Tics

Akathisia

Neurologic Issues Relevant to Dentistry

Bell's palsy

Bell's palsy



Initial presentation



After 6 months

Neurologic Issues Relevant to Dentistry

Disorders affecting the face, jaw, mouth and neck

- Trigeminal neuralgia
- Temporomandibular joint disorders
- Other facial pains
- Jaw tremors
- Bruxism
- Tardive dyskinesia
- Meige's syndrome
- Other oro-buccal facial dystonias
- Torticollis

Other Neurologic Issues Relevant to Dentistry

Complications of anesthesia

Malignant Hyperthermia

high fever

Malignant Hyperthermia
