

Deep Brain Stimulation for Parkinson's Disease

**PADRECC Parkinson's Disease
Caregiver Conference**

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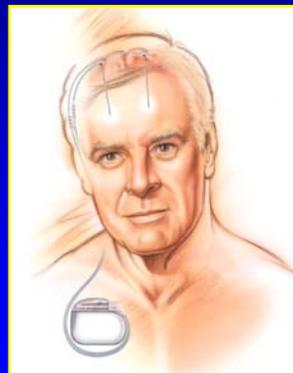
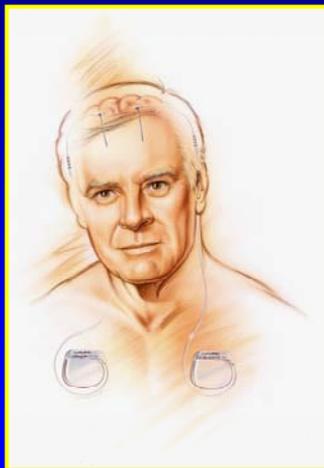
Modern Treatment of PD

- Pharmacotherapy
 - Dopaminergic medication
 - Anti-cholinergic therapy
 - Antidepressants & antipsychotics
- Supplemental Therapy
 - Exercise
 - Physical therapy; speech therapy
 - Environmental modification
- Surgical Therapy
 - Active Deep Brain Stimulation Therapy ("DBS")
 - Ablative procedures (pallidotomy, thalamotomy)

Limitations of Medications

- Control of symptoms may wane as PD progresses
- Disabling motor complications may develop
 - Wearing off of symptomatic effect
 - Development of dyskinesia—abnormal, involuntary hyperkinetic movements
 - Fluctuations in motor function repeatedly throughout the day
- Medications, especially at higher doses, may produce adverse effects
 - Dyskinesia
 - Psychiatric & cognitive symptoms
 - Gastrointestinal, autonomic, & other problems

DBS Systems

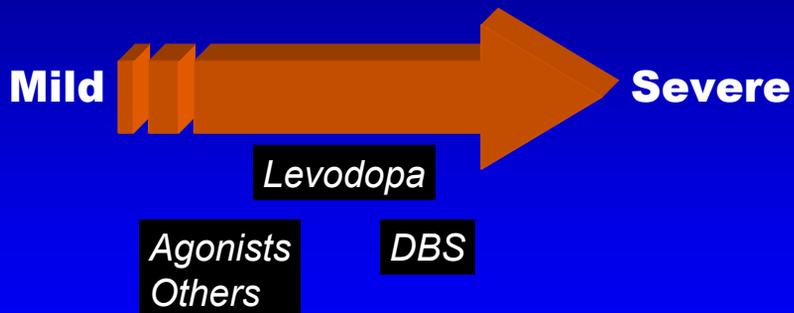


DBS External Components



- Clinician Programmer
- Patient Controllers
- Patient Magnet

Parkinson's Disease Treatment: Continuum of Interventions



DBS for PD: Patient Candidacy

- Idiopathic Parkinson's disease
- Continued response to levodopa
- Troubling motor symptoms, despite optimized medication treatment
- No dementia
- No uncontrolled hypertension, severe heart disease, strokes, or other medical conditions that increase the risk of surgery

DBS for PD: Patient Candidacy

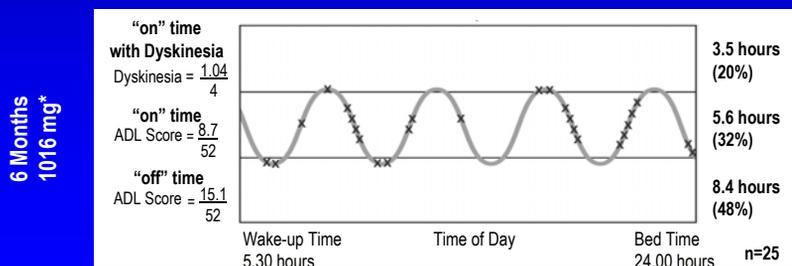
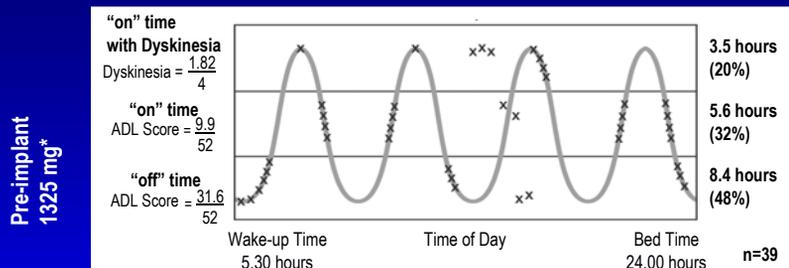
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- Clear understanding of the requirements of the therapy & willingness to comply with physician visits
- Realistic expectations

DBS for PD: What Can It Do?

- Improve motor symptoms of PD in limbs opposite DBS: tremor, rigidity, slowness
- Improve walking and balance problems (if not too severe to begin with)
- Increase amount of BEST-ON time
- Reduce OFF-TIME
- Reduce motor fluctuations & dyskinesia
- Reduce amount of medication needed (sometimes)
- **Improve function & quality of life**

DBS: Effect on Motor Function



L-dopa equiv.*

DBS for PD: What Can't It Do?

- Cure Parkinson's disease
- Stop progression of PD
- Replace medication
- Improve cognitive function
- Improve severe balance problems
- Consistently improve speech

Conclusions

- Considerable progress has been made in the understanding & treatment of Parkinson's disease
- More treatments for PD are available than ever before
- In addition to many effective medications, brain stimulation can suppress symptoms to maximize function