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REGIONAL NEUROSURGERY GROUP

Specialists in Functional & Movement Disorder Surgery
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REQUEST FOR AUTHORIZATION: DEEP BRAIN STIMULATION

Date of Request: October 5, 2025
Procedure: Unilateral (Right) Subthalamic Nucleus DBS
CPT Codes: 61863 (unilateral), 61885 (IPG placement)

PATIENT INFORMATION

Name: Dr. Kevin Nakamura
DOB: 05/18/1968 (Age: 57)
Sex: Male
Occupation: Hand Surgeon (currently on medical leave)
MRN: RNG-552847
Insurance: Medicare + Secondary Private (Aetna PPO)
Medicare #: 5NP-TY89-LM34

PRIMARY DIAGNOSIS

G20 - PARKINSON'S DISEASE, IDIOPATHIC
Duration: 9 years (onset 2016)

CLINICAL PRESENTATION & HISTORY

Dr. Nakamura is a 57 yo male orthopedic hand surgeon dx w/ idiopathic PD in 2016 (age 48). Initial presenting symptom: RIGHT hand rest tremor noticed while dictating charts. Also noted subjective R hand "clumsiness" + decreased dexterity during surgery. Dx confirmed by movement disorder neurologist Dr. Amanda Foster.

Disease has been RIGHT-SIDED PREDOMINANT throughout 9-yr course. Current sx: R hand tremor (resting + postural components), R arm/leg rigidity, generalized bradykinesia R>L. LEFT side minimally affected (mild rigidity only).

FUNCTIONAL IMPACT - CAREER CRITICAL:
Pt is hand surgeon - requires EXTREMELY precise fine motor control. R hand tremor (dominant hand) prevents surgical practice. Tremor present 60-70% of waking hours despite meds. Cannot perform microsurgery, cannot manipulate small instruments reliably. Forced to take medical leave 2 yrs ago. Significant psychological impact - loss of career identity + financial stress.

OFF periods: 2-3 hrs daily. During OFF: R tremor severe (3-4/4), marked bradykinesia, functional impairment for precise tasks. ON periods: improved but R tremor still present (1-2/4), not sufficient for surgical work.

Patient specifically requesting UNILATERAL (right side) DBS because: (1) symptoms predominantly right-sided, (2) wants to minimize surgical risk, (3) primarily needs tremor control for dominant hand to return to surgical practice. Left side minimally symptomatic.

CARDINAL FEATURES OF PD - DOCUMENTED

[✓] TREMOR - R hand resting + postural, amplitude 3/4 OFF meds, 1-2/4 ON meds
[✓] RIGIDITY - cogwheel type, R arm/leg 2-3/4, L arm/leg 1/4
[✓] BRADYKINESIA - present bilaterally R>L, finger tapping shows decrement + slowing

MOTOR ASSESSMENT

UPDRS PART III MOTOR SCORES (Exam date: 09/28/2025)
OFF medications (>12 hrs): 38/132
ON medications (optimal dose): 14/132
IMPROVEMENT: 24 points = 63% improvement

HOEHN & YAHR STAGE:
OFF state: Stage 2-3 (bilateral involvement, R predominant, mild postural instability)
ON state: Stage 2 (bilateral, no balance impairment)

LATERALIZATION OF SYMPTOMS:
UPDRS subscores breakdown shows 70% of motor impairment on RIGHT side. Left side minimal involvement (mostly mild rigidity). This asymmetric pattern stable over 9 years - classic for idiopathic PD.

LEVODOPA RESPONSIVENESS - DOCUMENTED

Formal L-dopa challenge: 09/15/2025
Protocol: Held all PD meds overnight. Baseline UPDRS=40. Given C/L 25/250 x3 tabs.
Peak response (60-90 min): UPDRS=15
Improvement: 62.5%
Clear ON period duration: 2-3 hours
Tremor: Baseline 3-4/4 → ON state 1-2/4 (improved but not eliminated)

Pt reports this typical of daily experience - DEFINITE ON-OFF periods, predictable response to meds.

MEDICATION HISTORY - OPTIMIZED

Medication	Dose	Frequency	Years
Carbidopa-Levodopa	25/100, 1.5 tabs	5x daily	9
Carbidopa-Levodopa CR	25/100	HS	5
Entacapone	200mg	w/ each C/L	6
Pramipexole	1.5mg	TID	7
Rasagiline	1mg	daily	8

Med optimization notes:
- Multiple dose/timing adjustments over 9 yrs
- Attempted higher L-dopa doses → dyskinesias developed, reduced back
- Tried: ropinirole (switched to pramipexole, better tolerated)
- Added COMT inhibitor (entacapone) 6 yrs ago → modest benefit
- Despite optimization: R tremor persists, limits surgical career

ISSUE: Medications provide partial benefit but insufficient tremor control for microsurgical work. Cannot increase further w/o side effects. Medical therapy EXHAUSTED for pt's functional goals.

DIAGNOSTIC STUDIES

MRI Brain (08/22/2025):
3T MRI w/ & w/o contrast. Normal study. No stroke, tumor, or vascular malformation. Basal ganglia normal signal. No structural lesions. Suitable for stereotactic targeting.

DaTscan (2017):
Reduced striatal DAT uptake R>L (asymmetric), consistent w/ idiopathic PD. Confirms presynaptic dopaminergic deficit.

NEUROPSYCHOLOGICAL TESTING

Date: 09/10/2025 | Psychologist: Dr. Maria Chen, PhD

MOCA: 29/30 (excellent)
Comprehensive battery: All domains WNL
- Memory: average-high average
- Executive function: superior
- Attention: WNL
- Language: WNL

IMPRESSION: No cognitive impairment. Excellent cognitive function. CLEARED for DBS.

PSYCHIATRIC EVALUATION

Date: 09/12/2025

No depression (BDI-II: 8, minimal). No anxiety disorder. No psychosis. Mood appropriate. Some frustration re: career limitations (understandable/appropriate). No psychiatric contraindications. **CLEARED for DBS.**

EXCLUSION CRITERIA - ALL ABSENT

[✓] NOT atypical parkinsonism - idiopathic PD confirmed (excellent L-dopa response, DaTscan, clinical course)
[✓] NO cognitive impairment/dementia (MOCA 29/30, neuropsych testing WNL)
[✓] NO depression interfering w/ benefit (minimal depressive sx only)
[✓] NO psychosis
[✓] NO substance abuse (non-drinker, no drugs)
[✓] NO structural brain lesions (MRI normal)
[✓] NO prior movement disorder surgery
[✓] NO significant comorbidities:
    - Generally healthy
    - No cardiac/pulmonary/renal disease
    - Medically cleared for surgery

This is somewhat unusual case - relatively YOUNG onset (age 48), requesting UNILATERAL DBS, main goal is return to surgical career (not just ADL improvement). But meets ALL medical criteria. Right-sided predominance well-documented over 9 years.

PATIENT COOPERATION & UNDERSTANDING

Pt is PHYSICIAN (hand surgeon) - extremely knowledgeable about medical procedures. Attended DBS education session 09/20/2025. Excellent understanding of:
- Awake surgery w/ local anesthesia
- Intraop testing requirements
- Post-op programming (committed to 6-8 sessions)
- Realistic expectations (tremor improvement likely, not complete elimination)
- Risks (understands 1-2% hemorrhage risk, infection, hardware complications)

Pt HIGHLY MOTIVATED. Strong desire to return to surgical practice. Willing to do whatever necessary for optimal outcome. Wife (also physician - anesthesiologist) very supportive, will assist w/ transportation to programming visits.

Given pt's medical knowledge + professional need for precise motor control, he specifically requests UNILATERAL (right) STN DBS initially. Rationale: (1) minimize risk, (2) L side minimally symptomatic, (3) can consider contralateral if needed later. We support this approach.

DEVICE & TARGET

Device: **Medtronic Percept PC Neurostimulator**
FDA Status: **APPROVED** (PMA P960009/S219) for STN or GPi DBS for PD
Target: **RIGHT Subthalamic Nucleus (UNILATERAL)**
Note: Policy 160.24 covers unilateral OR bilateral DBS

PROVIDER QUALIFICATIONS

Neurosurgeon: Dr. Thomas Liu, MD
- Board Certified Neurosurgery (2006)
- Fellowship: Functional Neurosurgery, Emory (2007)
- 18 years experience, 250+ DBS cases
- Member ASSFN

Movement Disorder Neurologist: Dr. Amanda Foster, MD
- Board Certified Neurology (2009), Movement Disorders subspecialty (2011)
- 14 years managing PD, 120+ DBS patients
- Will perform all programming

Facility: Oregon Health & Science University
- Academic medical center
- Stereotactic OR w/ Leksell frame, microelectrode recording
- Intraop MRI (3T)
- Dedicated DBS programming clinic
- >50 DBS cases/year

CLINICAL SUMMARY

Dr. Nakamura is 57 yo male w/ 9-yr h/o idiopathic PD characterized by RIGHT-SIDED PREDOMINANT symptoms (tremor, rigidity, bradykinesia). Dx confirmed by movement disorder specialist, DaTscan, + excellent L-dopa responsiveness (63% UPDRS improvement w/ clear ON-OFF periods).

Cardinal PD features all present. UPDRS Part III: 38 OFF → 14 ON. Hoehn & Yahr Stage 2-3. Symptoms 70% right-sided throughout 9-yr course.

Medical management optimized w/ 5 PD medications at appropriate doses. Multiple adjustments attempted. Despite this, R hand tremor persists + limits pt's surgical career (hand surgeon requiring microsurgical precision). Medication therapy exhausted relative to pt's functional goals.

Comprehensive evaluation excludes all contraindications: idiopathic PD confirmed (not atypical), no cognitive impairment (MOCA 29/30), no psychiatric illness, no substance abuse, MRI normal, no prior surgery, medically healthy.

Pt has excellent understanding (is physician), highly motivated, committed to programming. Requests UNILATERAL right STN DBS given R-sided predominance. This is appropriate approach. Policy covers unilateral procedures.

Surgery by experienced team at academic center using FDA-approved device.

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Amanda Foster, MD
Movement Disorders Neurology
Date: 10/5/2025