Parkinson's disease diagnosis

- A Hybrid Convolutional-Transformer Approach for Accurate Electroencephalography (EEG)-Based Parkinson's Disease Detection
- Psychiatric Outcomes of Subthalamic Nucleus Deep Brain Stimulation: A Systematic Review of Short- and Long-Term Effects
- Clinical and Genetic Characteristics of Parkinson's Disease Patients with Substantia Nigra Hyperechogenicity
- Stacked Ensemble Learning for Classification of Parkinson's Disease Using Telemonitoring Vocal Features
- Evaluation of Facebook as a Longitudinal Data Source for Parkinson's Disease Insights
- Phase Determination and Demonstration of Parental Mosaicism of Intragenic PRKN Deletions Initially Identified by Chromosomal Microarray Analysis
- Acute Myocardial Infarction and Diffuse Coronary Artery Disease in a Patient with Multiple Sclerosis: A Case Report and Literature Review
- Wearable Sensors and Artificial Intelligence for the Diagnosis of Parkinson's Disease

Why Second Thoughts Might Arise

- **Symptoms Overlap**: Parkinson’s disease shares symptoms with conditions like essential tremor, multiple system atrophy (MSA), progressive supranuclear palsy (PSP), drug-induced parkinsonism, and others. - **Slow Progression**: Some people experience very slow symptom progression, making them wonder if the diagnosis was accurate. - **Response to Medication**: If you haven’t responded well (or at all) to levodopa/carbidopa, it might raise red flags. - **No Imaging or Biomarkers Used**: Sometimes a diagnosis is made purely on clinical symptoms without imaging like a DaTscan.

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What You Can Do Now

1. **Seek a Second Opinion** A movement disorder specialist (a neurologist with advanced training in Parkinson’s and related diseases) can provide a more nuanced evaluation.

2. **Review the Symptoms Again**

1. *Classic Parkinson's*: Resting tremor, bradykinesia (slowness), rigidity, postural instability.
2. *Red Flags*: Early falls, gaze palsy, poor response to medication, rapid progression — these may suggest an atypical parkinsonism.

3. **Consider a DaTscan (Dopamine Transporter Scan)** This imaging test can help distinguish Parkinsonian syndromes from mimics like essential tremor.

4. **Medication Trial** A positive response to levodopa is often a strong indicator of Parkinson’s.

5. **Track Symptom Progression** Keeping a journal of motor and non-motor symptoms can help in future evaluations.

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Differential Diagnoses to Consider If the diagnosis feels “off,” here are some other possibilities:

Condition	Key Clues
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Essential Tremor	Action tremor, improves with alcohol, no bradykinesia
Drug-induced Parkinsonism	History of antipsychotic or GI meds (e.g., metoclopramide)
Multiple System Atrophy (MSA)	Early autonomic symptoms, poor levodopa response
Progressive Supranuclear Palsy (PSP)	Early balance issues, gaze palsy
Normal Pressure Hydrocephalus (NPH)	Gait issues, urinary incontinence, cognitive decline

— Diagnosis largely depends on clinical observation, but motor dysfunctions do not emerge until 70%-80% of the nigrostriatal nerve terminals have been destroyed. Therefore, a biomarker that indicates the degeneration dopaminergic neurons is urgently needed.

DTI and the apparent transverse relaxation rate provide different but complementary information for different parkinsonisms. Combined DTI and apparent transverse relaxation rate may be a superior marker for the differential diagnosis of parkinsonisms [1].

Parkinson's disease biomarkers

The present systematic review and meta-analysis aimed to establish the possible value of cerebrospinal fluid (CSF) and serum/plasma levels of amino acids as markers of Parkinson's disease (PD).

This is a review of four databases (PubMed, Embase, MEDLINE and Web of Science - Core Collection) from 1966 to 14 March 2020, with identification of references of interest for the topic. The meta-analysis of eligible studies was done using R software package meta, following the PRISMA and MOOSE guidelines.

Compared with age- and sex-matched controls, PD patients showed decreased CSF levels of glutamate and taurine and increased CSF levels of tyrosine; decreased serum/plasma levels of aspartate, serine, tryptophan, and lysine, and increased serum/plasma proline and homocysteine levels.

Despite the limitations of this study due to the important variability of results between different series, the findings suggest the value of CSF or serum/plasma levels of several amino acids in the discrimination of PD patients from healthy subjects, related to the levels of some amino acids [2].

1)
Du G, Lewis MM, Kanekar S, Sterling NW, He L, Kong L, Li R, Huang X. Combined Diffusion Tensor Imaging and Apparent Transverse Relaxation Rate Differentiate Parkinson's disease and Atypical Parkinsonism. AJNR Am J Neuroradiol. 2017 Mar 31. doi: 10.3174/ajnr.A5136. [Epub ahead of print] PubMed PMID: 28364007.

2)
Jiménez-Jiménez FJ, Alonso-Navarro H, García-Martín E, Agúndez JAG. Cerebrospinal and blood levels of amino acids as potential biomarkers for Parkinson's disease: review and meta-analysis. Eur J Neurol. 2020 Aug 10. doi: 10.1111/ene.14470. Epub ahead of print. PMID: 32777152.