

ESSENTIAL TREMOR AND PARKINSON'S DISEASE: HOW DO THEY DIFFER FROM EACH OTHER?

Courtesy of the International Essential Tremor Foundation

Many differences exist between essential tremor (ET) and Parkinson's disease (PD), the former being at least eight times more common than PD.

Up to 20% of patients with ET may develop PD, and 10% report a family history of PD. However, whether ET is a risk factor for PD remains an unresolved and somewhat controversial issue. (Fekete R, Jankovic J. *Revisiting the relationship between essential tremor and Parkinson's disease. Mov Disord* 2011;26:391-8).

As ET progresses, tremor frequency (number of repetitions per second) may decrease; however, tremor amplitude (magnitude/strength) may increase. Increased amplitude is associated with a decreased ability to manage fine, discrete motor tasks.

Parkinsonian Tremor Signs & Symptoms	Essential Tremor Signs & Symptoms
High amplitude. Lower, slower frequency.	Low amplitude. Amplitude is more variable, ranging from barely perceptible tremor to a high amplitude tremor. Higher, faster frequency.
Mostly seen at rest.	Mostly seen during action.
Generally involves slow movements (bradykinesia), rigidity (stiffness), and problems with walking or balance.	Tremor is primary symptom – slowness, stiffness and walking and balance problems are not commonly seen.
Rarely a family history (<10%).	Family history of tremor reported in the majority of patients (>50%).
Resting and postural (re-emergent); postural tremor observable after mean latency of 5 sec; rarely kinetic.	Postural, kinetic; postural tremor immediately observable; resting tremor less common.
Onset generally at ages between 55-65.	Onset most common in middle age but can occur at any time in the lifespan.
Usually starts on one side of the body and progresses to the other side; usually remains asymmetrical.	Usually affects both sides of the body initially (bilateral; symmetrical).
No effect on consumption of alcohol.	Alcohol often improves tremor.
Usually improves with levodopa treatment.	Improves with primidone and propranolol in some cases.
Hands affected more than legs, voice and head almost never affected.	Hands predominantly affected, but tremor also present in the head and voice; rarely in the legs.
Worsens with emotional stress.	Worsens with emotional stress.

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The characteristics listed in the table can help differentiate between parkinsonian and essential tremor, but a medical professional should be consulted for proper diagnosis.

In those with PD the most disabling symptoms are generally slowness, stiffness and problems with walking and balance, although tremor can also cause some disability. In PD, writing often becomes very small (micrographia) and therefore difficult to read.

The large majority of disability in patients with ET is a direct result of the tremor interfering with many daily activities. The severity of ET can vary greatly with some patients having a very mild tremor and therefore minimal to no disability to others who have such a severe tremor that they cannot perform the majority of their daily activities. The writing of a person with ET tends to be large and tremulous rather than slow and small as in PD.

Anxiety can increase both ET and PD.

In addition to medications and botulinum toxin, deep brain stimulation is a therapeutic option for those with severe disabling ET or PD.

ET is often associated with a strong family history (known as familial tremor), but no specific ET-related gene has been identified.

A special picture or scan of the brain that measures the uptake of dopamine, such as DaTscan, can help to differentiate between ET and parkinsonian tremor. Dopamine is depleted in patients with parkinsonism

but not in patients with ET; therefore, scans showing depletion in dopamine are most likely parkinsonism and normal scans would suggest a more likely diagnosis of ET. These scans are used as a tool to help the physician make an accurate diagnosis in difficult cases.

The information above is intended to describe the fundamental differences between ET and PD. To obtain a diagnosis, please consult a neurologist, preferably a movement disorder specialist.

For more information please contact the IETF at www.essentialtremor.org or at 888.387.3667.

Prepared by:

Arif Herekar, MD, Chairman and Head, Department of Neurology, Baqai Medical University; and IETF Medical Advisory Board.

Joseph Jankovic, MD, Professor of Neurology, Distinguished Chair in Movement Disorders, Director, Parkinson's Disease Center and Movement Disorders Clinic, Co-Director, Parkinson's Disease Research Laboratory, Baylor College of Medicine, Department of Neurology, Houston, Texas; and IETF Medical Advisory Board.

Kelly Lyons, PhD, Research Professor of Neurology and Director of Research and Education for the Parkinson's Disease and Movement Disorder Center at KUMC; and President, IETF Board of Directors.



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