



December 2008 (updated October 2009)

ELDER CARE

A Resource for Providers

Diagnosing Tremors

Barry D Weiss, MD, College of Medicine, University of Arizona

Tremor is a common finding in older people. Causes range from benign physiological tremors to serious neurodegenerative disorders like Parkinson's disease. While tremor can be classified according to frequency, amplitude, and situations in which the tremor occurs, it is often more helpful to categorize tremors into syndromes. This newsletter will review the most common geriatric tremor syndromes.

Parkinsonian Tremor is a resting tremor – i.e., it occurs when the affected body part is at rest, such when the arm and hand are resting in a person's lap. The tremor decreases with directed action, such as pointing to an object or pointing to one's nose. Resting tremor is typical of classic Parkinson's Disease, in which the tremor often begins unilaterally. A similar tremor occurs in drug-induced Parkinsonism. Common offending drugs are metoclopramide and the phenothiazines (including the anti-emetic drug, promethazine).

Essential Tremor is usually considered to be a postural tremor – i.e., it occurs when a body part holds its position against gravity. Thus, essential the tremor is seen when the arms are held in an outstretched position. It also may have an intention component, with tremor at the end of a directed action such as pointing to an object. The arm tremor may begin unilaterally and over time become bilateral. The head may also be involved and demonstrate either a vertical or horizontal movement. The legs are rarely involved. In up to half of cases, essential

tremor is familial, with autosomal dominant inheritance. The tremor usually lessened by alcohol.

Cerebellar Tremor has some similarities to essential tremor. As with essential tremor, a cerebellar tremor is seen with intention (directed actions such as pointing to an object). But, in contrast to essential tremor, the intention tremor in cerebellar disease begins as the extremity approaches the object, rather than just at the very end of the directed action. There also may be a postural component, seen as a head tremor, which appears a "bobbing" to-and-fro movement of the head called titubation. The key to distinguishing cerebellar from essential tremor is usually the presence of other cerebellar signs, such as ataxia and dysmetria (undershoot or overshoot when pointing to an object). Patients with cerebellar tremor may have abnormalities on neuroimaging, such as stroke, tumor, or demyelination.

Physiologic Tremor is a benign postural tremor that occurs in everyone but is usually not visible to the naked eye. It can increase and become visible in the presence of sympathetic nervous system stimulation from drugs (e.g., beta-adrenergic agonists, amphetamine-like drugs, caffeine) and certain disease states (e.g., hyperthyroidism, hypoglycemia). Anxiety can also produce this type of tremor. The tremor is present equally in the upper and lower extremities, which distinguishes it from all of the previously-described tremors. The tremor is reversible when the stimulus is removed.

TIPS FOR THE DIAGNOSIS OF TREMOR

Tremor that occurs when an arm or hand at rest and supported on the lap is typical of **Parkinsonian tremor**. Early symptoms are usually unilateral.

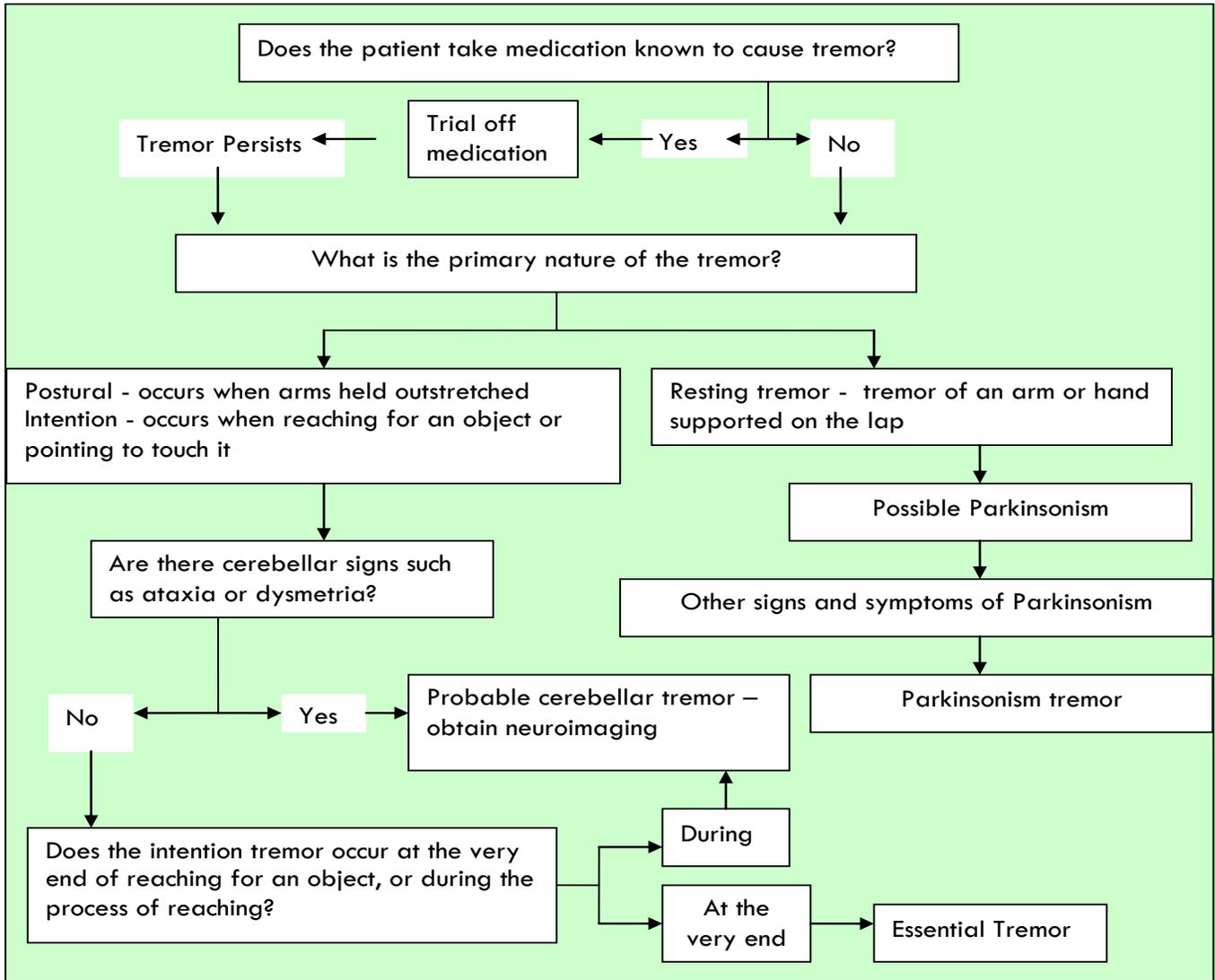
Tremor of an outstretched arm, or in the last motions of reaching for an object, is typical of **essential tremor**.

Tremor that occur while reaching for something, rather than at the last moments of reaching for it, is suggestive of **cerebellar tremor**; ataxia and dysmetria may also be present.

A **physiologic tremor** is a "natural" tremor which is exacerbated by sympathetic nervous system stimulation, whether from medications, disease states, or anxiety.

Continued from front page

An Approach to Distinguishing the Common Types of Tremor in Older Adults



Patients with tremor that does not fall easily into one of the categories shown above should be considered for neurology consultation

References and Resources

1. Louis ED. Clinical practice. Essential tremor. *N Engl J Med.* 2001;345(12):887-891.
2. Smaga S. Tremor. *Am Fam Physician.* 2003;68(8):1545-1552.
3. Tolosa E, Wenning G, Poewe W. The diagnosis of Parkinson's disease. *Lancet Neurol.* 2006;5(1):75-86.



ROSEMARY BROWNE, MD AND CAROL HOWE, MD, EDITORS
 ARIZONA REYNOLDS PROGRAM OF APPLIED GERIATRICS
 UNIVERSITY OF ARIZONA, PO BOX 245069, TUCSON AZ 85724 (520)626-5804
 WWW.REYNOLDS.MED.ARIZONA.EDU
 THIS WORK WAS SUPPORTED BY A GRANT FROM THE DONALD W. REYNOLDS FOUNDATION

