

When diagnosing the cause of tremors most neurologists would observe the tremor:

1. while a person is fully resting the limb
2. when the limb is held in a fixed position in front of them
3. when performing a movement such as finger to nose testing
4. *(Not expected but a bonus: look for enlarged, asymmetric neck muscles that might suggest neck dystonia (dystonic tremor) which responds well to botox)*

- **ESSENTIAL TREMOR (ET):** The patient has a tremor that is worse with **MOVEMENT** (action tremor), no parkinsonism or cerebellar dysfunction on examination. This does not require MRI imaging to investigate.
- **PARKINSON'S DISEASE (PD):** In addition to tremor **AT REST** (rest tremor) that improves with movement, this includes bradykinesia, rigidity and gait instability. If the patient has 2/4 of these, they are likely to have **Parkinson's Disease (please see Parkinson's Disease Pathway)**. Other movement disorders can be associated with cerebellar dysfunction (dysmetria and dysidiadochokinesia) and dystonia.
 - o PD patients ALWAYS deserve a trial of Sinemet (levodopa/carbidopa) ½ tab 100/25mg TID and increase to a full tab TID
 - o A neurologist assessment should not delay therapy and a response to Sinemet can be diagnostic!
 - o No neuroimaging is necessary except in unusual cases (See PD pathway)

ESSENTIAL TREMOR

- You can rule out secondary causes. You can check thyroid, TSH, free T4, am cortisol, electrolytes, calcium, magnesium,
- Bear in mind that many medications can cause or worsen tremors including TCAs, SNRIs, SSRIs, Valproic acid and Lithium among others, and substances such as caffeine, stimulants, cocaine etc.
- If you diagnose ET you can trial prophylactic medications.
- Neurology will ONLY assess tremor that has failed >2 prophylactics
- Please remember that medications do not cure tremor, only make it milder

The first line medication is Propranolol, 20-40mg bid to qid, and increase as needed. Main side effects include hypotension, depression, bradycardia, nightmares, be mindful of asthma. If propranolol doesn't work, you can suggest:

- 1) primidone: start as low as 62.5mg nightly or 125hs for 2 weeks, then 125 bid x 2 weeks, then 125tid x 2 weeks and titrate up very gradually to about 250tid. Drowsiness is primary side effect, use Vitamin D for prevention of osteoporosis.
- 2) gabapentin: start at 300qhs x 2 weeks, the 300bid x 2 weeks, then 300tid and increases as needed. SE: drowsiness, mood, myoclonus, leg swelling
- 3) Topiramate: start 50 HS and increase by 50 mg every 2 weeks to a final dose of 100bid (although you can go up to 300bid). SE: weight loss, cognitive slowing, paresthesia (managed by eating high potassium foods), rare glaucoma and kidney stones
- 4) Nimodipine 30 TID, but start 30 OD and titrate up
- 5) Clonazepam 0.5-1mg bid, but start at 0.5 od and titrate up. Risk of dependence.

Please let the patient know that the anticonvulsants take a very long time, months, to be effective.