Suspected Essential Tremor (ET) Pathway

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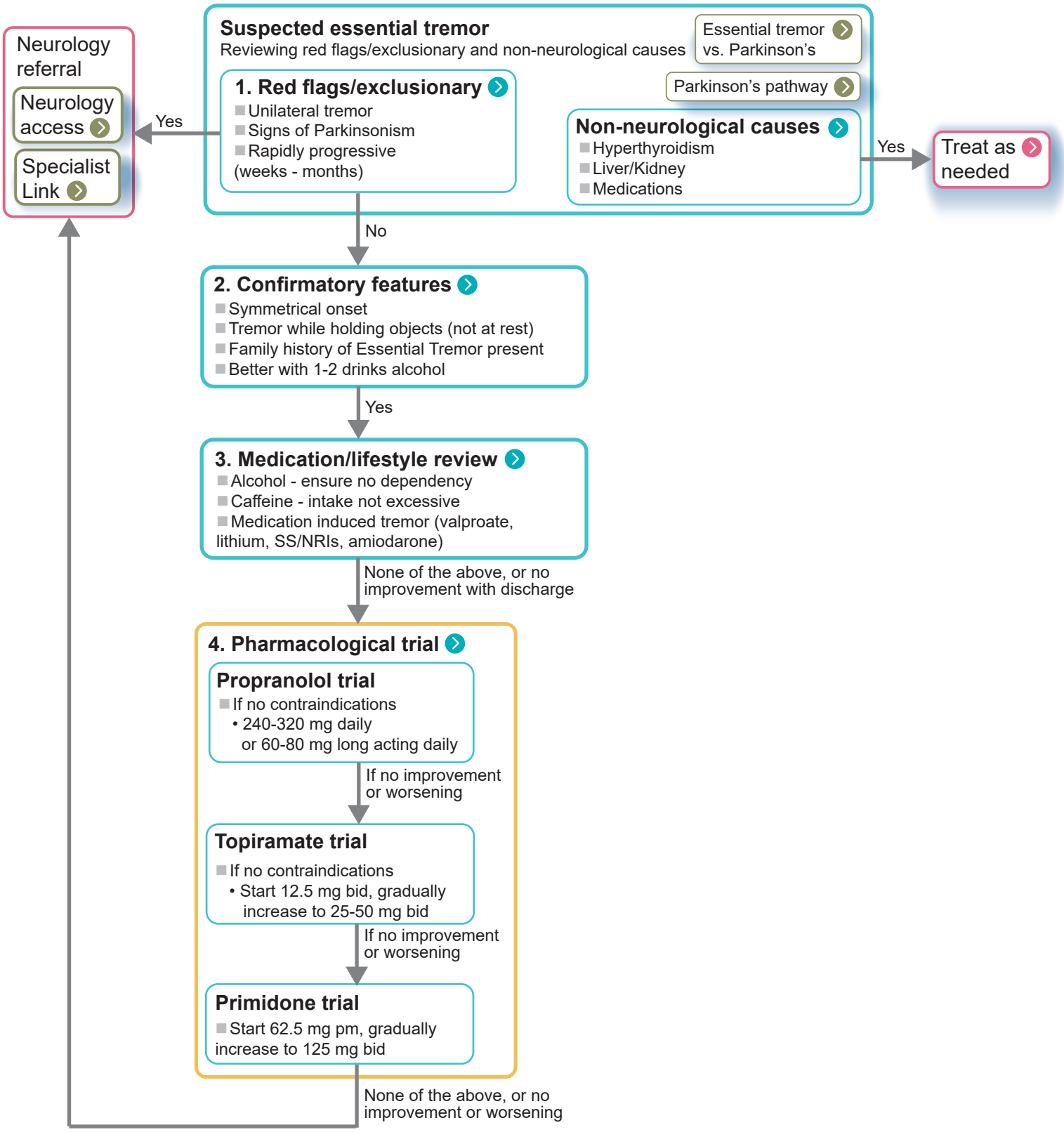

PATHWAY PRIMER

Essential Tremor (ET) and Parkinson's Disease (PD) are two of the most common movement disorders encountered by family doctors; both present with tremor but the two disorders are treated differently. The diagnosis of ET is clinical and other than common metabolic conditions, investigations are not required. Treatment can produce significant benefit and may be initiated without a neurology referral.

ET is the most common movement disorder; the tremor is present when holding objects, performing tasks and is usually of slightly higher frequency (5-8 Hz).

It is important to exclude secondary conditions such as hyperthyroidism, liver and renal dysfunction/failure, and drugs causing postural tremor (valproate, lithium, SSRIs, SNRIs, amiodarone) as other causes of a postural tremor. Excessive caffeine consumption (more than 2 or 3 eight oz cups of coffee per day, chocolate, soft drinks) can also cause tremor that looks like ET.

ET is typically characterized by a significant family history of the same tremor and beneficial response to 1-2 drinks of wine or beer (or other alcoholic beverage; it is important to ensure that alcohol dependency is not present as potential self-treatment).

Depending on the family history, the tremor may present at a wide range of ages and many patients with ET do not need treatment. However, ET is a progressive condition. When there is sufficient functional impairment (writing, using utensils, working), it is appropriate to discuss medication as treatment.

EXPANDED DETAILS

1. Red flags/exclusionary and non-neurological causes

Comparison of tremor in essential tremor and Parkinson's Disease

Essential Tremor	Parkinson's Disease
• **Head/voice tremor** • **Bilateral onset of tremor, usually hands** • **ETOH responsive (1-2 drinks wine/beer)** • **No cogwheel rigidity** • **Writing large and tremulous** • **Tremor better with walking** • **Positive family history** • Tremor present with holding objects or performing tasks	• Chin tremor • Unilateral onset of tremor/bradykinesia • ETOH unresponsive • Cogwheel rigidity • Writing small (micrographia) • Tremor emerges with walking with reduced arm swing • Often, no clear family history • Tremor present at rest

2. Confirmatory features

Checklist to guide your in-clinic review of this patient with ET symptoms

- Signs of ET
- No signs of Parkinson Disease
- Rule out secondary conditions (hyperthyroidism, liver/kidney problems, drugs causing tremor)
- Lifestyle factors that contribute to ET have been identified and discussed with patient
- Patient has trial of propranolol (for 8-12 weeks) followed by review and optimization
- If contraindication or failed trial of beta blockers, trial of topiramate (for 8-12 weeks) followed by review and optimization
- If necessary trial of third line treatment with Primidone (for 8-12 weeks) followed by review and optimization

3. Medication/lifestyle review

- Alcohol – ensure no dependency
- Caffeine – intake not excessive
- Medication-induced tremor (valproate, lithium, SS/NRIs, amiodarone)

4. Pharmacological trial

Trial of Propranolol

- When warranted, medications for ET include beta blockers (propranolol, preferentially), topiramate and primidone.
- If there are no contraindications (asthma, COPD, depression), propranolol is considered first line therapy.
- Propranolol may be taken on a prn basis for anticipated situations where the tremor will predictably worsen (20 mg 30 minutes prior to event).
- Propranolol may also be taken on a regular basis (40-80 mg/day regular or 60 mg-80 mg/day long- acting); allow 4 weeks between visits for evaluation and dose increases.
- Potential side effects of Propranolol include fatigue, hypotension and bradycardia.

Starting Propranolol 20 mg.

Week	AM	PM
1	-----	1 tablet (20 mg)
2	1 tablet	1 tablet
3	2 tablets	2 tablets
4	3 tablets	3 tablets **EVALUATE**
Evaluate at 60 mg bid; May increase further as needed and as tolerated to 240-320 mg per day.		
5	4 tablets	4 tablets
6	5 tablets	5 tablets
7	6 tablets	6 tablets

Propranolol LA 60 or 80 mg may be started once per day and increased to bid after evaluation. Propranolol LA is usually tried after regular propranolol has been proven to be effective but the patient would prefer once per day dosing.

Trial of Topiramate

- Topiramate may be tried if beta-blockers are contraindicated or have not been helpful.
- The starting dose of Toprimate would be 12.5 mg od increasing this gradually over a number of weeks to 25-50 mg bid.
- Potential side effects of Topiramateinclude rash (drug should be stopped), feeling dizzy and off balance, weight loss and cognitive slowing.
- Topiramate is contraindicated with glaucoma or nephrolithiasis.

Starting Topiramate 25 mg.

Week	AM	PM
1	-----	1/2 tablet
2	1/2 tablet	1/2 tablet
3	1/2 tablet	1 tablet
4	1 tablet	1 tablet
May increase further as needed/tolerated to 50 mg bid.		

Trial of Primidone

- Primidone would be the third drug of choice, but produces the most side effects. Watch particularly for nausea, dizziness or problems with balance in elderly patients.
- The starting dose for Primidone is 62.5 mg qhs and increase the medication weekly until 125 mg bid; titration may be slower if side effects develop.
- The dose of Primidone may be gradually increased to 250 mg bid, but generally, side effects limit increasing the medication to this dose.
- For patients on warfarin, the INR should be watched for potential changes while on Primidone.

Starting Primidone 125 mg.

Week	AM	PM
1	-----	1/2 tablet
2	1/2 tablet	1/2 tablet
3	1/2 tablet	1 tablet
4	1 tablet	1 tablet
Evaluate at 125 mg bid; increase as tolerated to 250 mg bid.		

BACKGROUND

About this pathway

- This primary care pathway was originally developed in 2016 as part of the Calgary Zone's Specialist Link initiative, via the Department of Neurology and the Calgary Zone's specialty integration group, which includes medical leadership and staff from Calgary and area Primary Care Networks, the Department of Family Medicine and Alberta Health Services.
- The pathways were intended provide evidence-based guidance to support primary care providers in caring for patients with common digestive health conditions within the medical home.

Authors and conflict of interest declaration

- This pathway was reviewed and revised in 2023, by a multi-disciplinary team led by the Calgary Zone's Specialty Integration group. Names of participating reviewers and their conflict of interest declarations are available on request.

Pathway review process, timelines

- Primary care pathways undergo scheduled review every three years, or earlier if there is a clinically significant change in knowledge or practice. The next scheduled review is December, 2026. We welcome feedback at any time. Please email comments to info@calgaryareapcns.ca

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DISCLAIMER

This pathway represents evidence-based best practice but does not override the individual responsibility of health care professionals to make decisions appropriate to their patients using their own clinical judgment given their patients' specific clinical conditions, in consultation with patients/alternate decision makers. The pathway is not a substitute for clinical judgment or advice of a qualified health care professional. It is expected that all users will seek advice of other appropriately qualified and regulated health care providers with any issues transcending their specific knowledge, scope of regulated practice or professional competence.

PROVIDER RESOURCES

Advice options

Non-urgent advice is available to support family physicians.

- In the Calgary Zone, specialistlink.ca connects family physicians and specialists in real time via a tele-advice line. Family physicians can request non-urgent neurology advice online at specialistlink.ca or by calling **403-910-2551**. The service is available from 8 a.m. to 5 p.m. (with some exceptions), Monday to Friday (excluding statutory holidays). Calls are returned within one hour.
- Non-urgent neurology is also available across the province via Alberta Netcare eReferral Advice Request (responses are received within five calendar days). View https://www.albertanetcare.ca/eReferral.htm for more information.

General resources	Location
Evidence-based guideline update: Treatment of essential tremor	http://www.neurology.org/content/77/19/1752.full.pdf+html
Mayo Clinic Essential Tremor Overview	http://www.mayoclinic.org/diseases-conditions/essential-tremor/home/ovc-20177826
Pharmacologic management of essential tremor	http://www.cfp.ca/content/56/3/250.full.pdf+html
University of Calgary Department of Clinical Neurosciences	https://cumming.ucalgary.ca/departments/dcns/programs
Suspected Parkinson's Disease clinical pathway	https://www.specialistlink.ca/assets/pdf/neurology/Neurology_SuspectedParkinsons_Pathway.pdf

PATIENT RESOURCES

Resource type	Resource name	URL
Handout	Patient education: Tremor (Beyond the Basics)	http://www.uptodate.com/contents/tremor-beyond-the-basics?source=search_result&search=essential+tremor&selectedTitle=12~31
Website	University of Calgary Movement clinic website (especially resources tab)	https://cumming.ucalgary.ca/departments/dcns/programs/movement-disorders
Handbook	Essential Tremor Patient Handbook	http://www.essentialtremor.org/wp-content/uploads/2013/06/patienthandbook02142013-final1.pdf
Handout	Patient Info Essential Tremor	http://patient.info/health/essential-tremor