

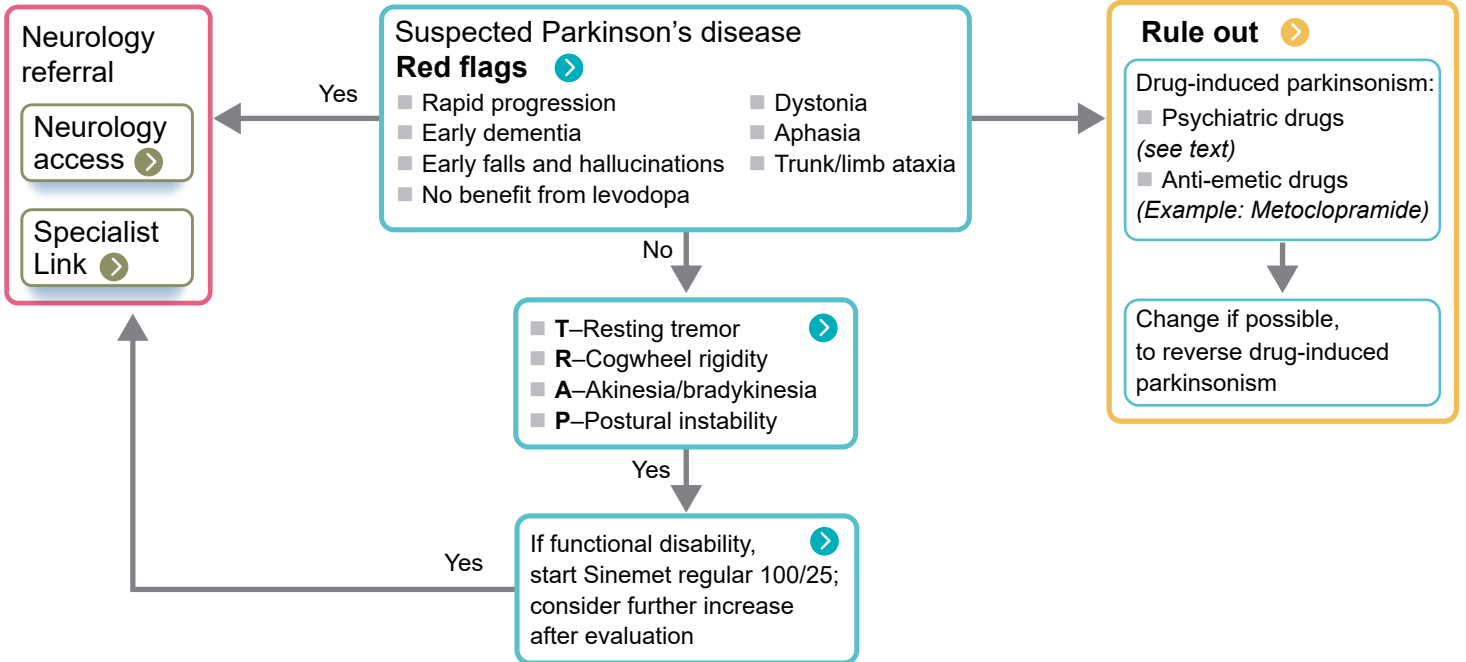
Primary care pathway: Parkinson's disease

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EXPANDED DETAILS

Parkinson's disease (PD) and Essential tremor (ET) 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 PD is clinical. Where there is functional impairment, treatment can produce significant benefit and may be initiated without a neurology referral.

Parkinson's disease is characterized by tremor AT REST (not while holding objects), cogwheel rigidity, bradykinesia (slowness) and balance difficulty (postural instability). Patients complain of unilateral onset of tremor while their hand is at rest, small handwriting in comparison to the past (micrographia), decreased facial expression, soft voice (hypophonia), and stiffness resulting in slow movement (bradykinesia). Over years, these signs and symptoms spread to become bilateral.

The mnemonic **TRAP** is often used as a reminder of the cardinal features of idiopathic PD, consisting of:

resting Tremor,
cogwheel Rigidity,
Akinesia or bradykinesia, and
Postural instability.

Other "non-motor" symptoms, present at early stages of the disease include decreased olfaction, depression and anxiety, balance difficulty, constipation, bladder dysfunction and seeming "acting out of dreams" while in bed at night (REM sleep behavior disorder).

Drug induced parkinsonism should be excluded. Common culprit drugs include **metoclopramide** (used to treat nausea) as well as a variety of antipsychotic medications (haloperidol, olanzapine, aripiprazole, pimozide and risperidone). Assistance from psychiatry will be needed in changing antipsychotic medications to medications such as quetiapine or clozapine.

If there is sufficient functional impairment of daily activities in idiopathic Parkinson's disease, medical treatment is indicated. Of all the drugs available to treat PD, levodopa has the greatest efficacy with the fewest side effects so is the drug of choice. Levodopa comes in multiple formulations but Sinemet regular 100/25 (levodopa/carbidopa), yellow in colour, (not Sinemet CR) should be used. Patients with PD show dramatic benefit to adequate doses of levodopa, which improves tremor and bradykinesia, gait and facial expression. Section 4 describes an example titration schedule for this medication.

There are a number of similar neurodegenerative syndromes to PD which in the initial stages can appear as PD; however, as the years pass, certain signs and symptoms emerge that alert the clinician to an alternate diagnosis. In the early stages, it is difficult to distinguish PD from these other syndromes. However, the presence of early dementia, falling and hallucinations, as well as lack of a significant benefit to levodopa, should warn the clinician that another diagnosis (Lewy Body dementia, progressive supranuclear palsy, multiple systems atrophy) may be entertained. Patients with these other conditions often benefit from levodopa, but not as much as those with PD; a trial of levodopa remains worthwhile in these patients.



Comparison of tremor in ET and PD

Essential tremor	Parkinson's disease
<ul style="list-style-type: none"> • Tremor present with holding objects or performing tasks • Head/voice tremor • Bilateral onset of tremor, usually hands • ETOH responsive (1-2 drinks wine/beer) • No cogwheel rigidity • Writing large and shaky • Tremor better with walking • Positive family history 	<ul style="list-style-type: none"> • Tremor present at rest • Chin tremor • Unilateral onset of tremor/bradykinesia • ETOH unresponsive • Cogwheel rigidity • Small handwriting (micrographia) • Tremor emerges with walking with reduced arm swing; stooped, shuffling gait • Often, no clear family history

Checklist to guide your in-clinic review with PD symptoms

<input type="checkbox"/> Signs of PD
<input type="checkbox"/> No signs of essential tremor
<input type="checkbox"/> Rule out drug induced parkinsonism: metoclopramide for nausea ; antipsychotics: haloperidol, pimozide, risperidone, olanzapine, aripiprazole
<input type="checkbox"/> No red flags suggestive of another parkinsonian condition other than Parkinson's Disease (rapid progression of disability; early dementia, falls, hallucinations, no benefit from levodopa)
<input type="checkbox"/> If there is significant functional impairment, start levodopa (Sinemet)

If a patient with suspected Parkinson's disease needs and wishes medical treatment (and there are no red flags or evidence of drug induced parkinsonism), then levodopa should be initiated. The formulation of choice is Sinemet regular 100/25 (yellow tablet). Initiate treatment in t.i.d. dosing with meals starting with ½ tablet t.i.d. and increasing over to 1 tablet t.i.d.. At this point, evaluate the patient again - if the patient is better, it may be best to leave the medication at this dose. Other patients will benefit from a further increase to 2 tablets t.i.d., which remains a modest dose.

Starting Sinemet 100/25

Week	Breakfast	Lunch	Supper
1	0.5	0.5	0.5
2	1	1	1 EVALUATE
3	1.5	1.5	1.5
4	2	2	2

Potential side effects of levodopa are primarily limited to nausea (usual mild and transient), and mild postural hypotension. Persistent nausea may be treated by taking the levodopa with meals or a small snack or starting domperidone 10 mg 1/2 hour prior to each dose of levodopa and not exceeding 10 mg t.i.d.. Domperidone may prolong the QT interval, a risk to consider, but can provide significant benefit to refractory nausea.



Common errors in starting levodopa include scheduling the medication doses too far apart (i.e., 6 a.m. and 6 p.m.) or staying at a low dose of medication (1 tablet t.i.d.) despite progression of symptoms and signs. PD is a progressive neurodegenerative condition and medications will need to be increased over time, depending on individual patient needs.



BACKGROUND

About this pathway

- The pathway is intended to provide evidence-based guidance to support primary care and specialty care providers in caring for adult patients with Parkinson's disease within the medical home. Neurology tele-advice is available via [Specialist Link](#).

Authors and conflict of interest declaration

- This pathway was developed by leveraging the collective knowledge, experience and expertise of many individuals. For more information, please email info@calgaryareapcns.ca.

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. This pathway was developed in January 2017 and was most recently updated in May 2024. The next scheduled review is May, 2026. We welcome feedback at any time. Please email comments to info@calgaryareapcns.ca with "Parkinson's Disease Pathway" in the subject line.

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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 telephone advice connects family physicians, nurse practitioners and specialists in real time via a tele-advice line. Family physicians, nurse practitioners and specialists can request non-urgent advice from a neurologist, at specialistlink.ca or by calling 403-910-2551. This service is available from 8 a.m. to 5 p.m. Monday to Friday (excluding statutory holidays). Calls are returned within two (2) hours.
- Non-urgent neurology electronic advice is available across the province via Alberta Netcare eReferral eConsult (responses are received within five calendar days). View the [eReferral Learning Centre](#) for more information.

Resources	Location
Parkinson's info	http://www.parkinson.org
Referral form for community accessible rehab program	http://www.albertahealthservices.ca/frm-104014.pdf
U of C Department of Clinical Neurosciences Movement Disorders Clinic	https://cumming.ucalgary.ca/departments/dcns/programs/movement-disorders
News Archive – Parkinson's Association of Alberta	https://parkinsonassociation.ca/
Health professional support	http://www.uptodate.com/
Parkinson's info	http://www.parkinson.ca/

PATIENT RESOURCES

Information

Resource type	Resource name	Location
Patient education	Parkinson disease symptoms and diagnosis (Beyond the Basics) - UpToDate®	https://www.uptodate.com/contents/parkinson-disease-symptoms-and-diagnosis-beyond-the-basics
Website	Parkinson's Alberta	http://www.parkinsonalberta.ca/
Website	Parkinson's Disease Foundation	http://www.pdf.org/
Website	The Michael J. Fox Foundation for Parkinson's Research	http://www.michaeljfox.org/

