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Parkinson's Disease in Primary Care: A Practical Canadian Primer

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Executive Summary

Parkinson's disease (PD) is a progressive neurodegenerative disorder that is increasingly encountered in Canadian primary care. National surveillance data estimate that over 110,000 Canadians are living with Parkinsonism, with incidence rising steadily as the population ages.[1] Approximately 80% of new diagnoses occur after the age of 65 years, making PD highly relevant to geriatric-focused primary care practice. For family physicians, PD represents not only a diagnostic challenge but also a longitudinal care responsibility that intersects with multimorbidity, polypharmacy, fall risk, and caregiver burden.

The diagnosis of PD remains clinical. It requires recognition of Parkinsonism, defined as bradykinesia in combination with rest tremor and/or rigidity, and on an assessment of whether the clinical features support idiopathic PD versus alternative etiologies such as drug-induced, vascular, or atypical Parkinsonism.[2] In primary care, a structured approach that incorporates a focused history, bedside motor examination, and screening for non-motor symptoms can significantly improve diagnostic accuracy.[3]

Management begins with patient education, early initiation of exercise, and symptom-guided pharmacotherapy. Levodopa remains the most effective treatment for motor symptoms and should not be delayed once functional impairment emerges.[4] Primary care clinicians are well positioned to initiate therapy, monitor therapeutic response, and coordinate multidisciplinary care, particularly in regions where access to neurology is limited.

Epidemiology and Clinical Relevance

PD represents one of the fastest growing neurological conditions globally, and Canada reflects this trend. Data from the Canadian Chronic Disease Surveillance System demonstrate a steady increase in the number of individuals living

with Parkinsonism over the past decade, driven largely by demographic shifts and improved survival.[1] While PD accounts for the majority of these cases, the category of Parkinsonism also includes vascular, drug-induced, and atypical syndromes, adding to the diagnostic complexity faced in primary care.

For clinicians, the significance of PD extends beyond its prevalence to its impact. Patients frequently present with subtle early symptoms that may be attributed to aging, stress, or comorbid conditions. As the disease progresses, it affects mobility, cognition, mood, and autonomic function, requiring a comprehensive and longitudinal care approach. Primary care clinicians are uniquely positioned to identify early changes, initiate appropriate investigations, and provide continuity of care as the disease progresses.

Diagnosis: A Clinical Framework

Confirming Parkinsonism

The first step in diagnosing PD is confirming the presence of Parkinsonism (**Figure 1**). According to the Movement Disorder Society clinical diagnostic criteria, Parkinsonism is defined by bradykinesia in combination with either rest tremor or rigidity.[2] Bradykinesia is more than slowness; it is characterized by a progressive reduction in speed or amplitude during repetitive movements.

In clinical practice, this can be assessed using simple bedside manoeuvres. Finger tapping is particularly useful, as patients with PD demonstrate a clear decrement in amplitude over successive taps. Rapid alternating movements and heel tapping can provide additional confirmation. Rigidity may be appreciated as increased resistance to passive movement and may have a cogwheel quality. When present, rest tremor is typically asymmetric and most evident when the affected limb is relaxed.

Gait assessment also provides valuable information. Patients may exhibit reduced arm swing, a stooped posture, shuffling steps, and difficulty with turning. Taken together, these findings support the diagnosis of Parkinsonism and guide further evaluation.

Clinical History

A detailed history is essential for distinguishing PD from other causes of Parkinsonism. Patients often report subtle functional changes that precede development of obvious motor symptoms, such as difficulty with fine motor tasks including buttoning clothing, changes in handwriting (micrographia), or reduced dexterity.

Non-motor symptoms frequently precede the onset of motor features and can provide important diagnostic clues. Common early manifestations include constipation, reduced sense of smell, REM sleep behaviour disorder, and mood changes such as depression or anxiety.[5] Identifying these features can increase diagnostic confidence and support earlier recognition.

A thorough medication history is particularly important. Dopamine receptor–blocking agents, including antipsychotics and certain antiemetics such as metoclopramide, can cause drug-induced Parkinsonism. Although this condition may mimic PD, it often presents with more symmetric symptoms and may improve after discontinuation of the offending agent.[6]

Differential Diagnosis

Distinguishing idiopathic PD from other causes of Parkinsonism is a critical task in primary care (**Table 1**).

Atypical Parkinsonian syndromes, such as progressive supranuclear palsy and multiple system atrophy, should be considered when red flags are present. These include early falls, rapid disease progression, prominent autonomic dysfunction, oculomotor abnormalities, and poor response to levodopa.[7] These features warrant early referral to a specialist.

Vascular Parkinsonism typically presents with lower-body predominance, gait instability, and a history of cerebrovascular disease. Tremor is less common, and response to levodopa is often limited.[8]

Essential tremor is another common mimic. Unlike PD, essential tremor is primarily an action tremor, often bilateral, and not associated with bradykinesia or rigidity.[9]

Role of Imaging

PD remains a clinical diagnosis, and routine neuroimaging is not required.[4] However, imaging may be useful in selected cases where diagnostic uncertainty exists or alternative pathology is suspected.

Dopamine transporter imaging (DaT-SPECT) can help differentiate degenerative Parkinsonism from conditions such as essential tremor or drug-induced Parkinsonism. However, it does not reliably distinguish PD from atypical Parkinsonian syndromes and is not widely accessible across

Stepwise approach to diagnosis and early management of Parkinson's disease in primary care.

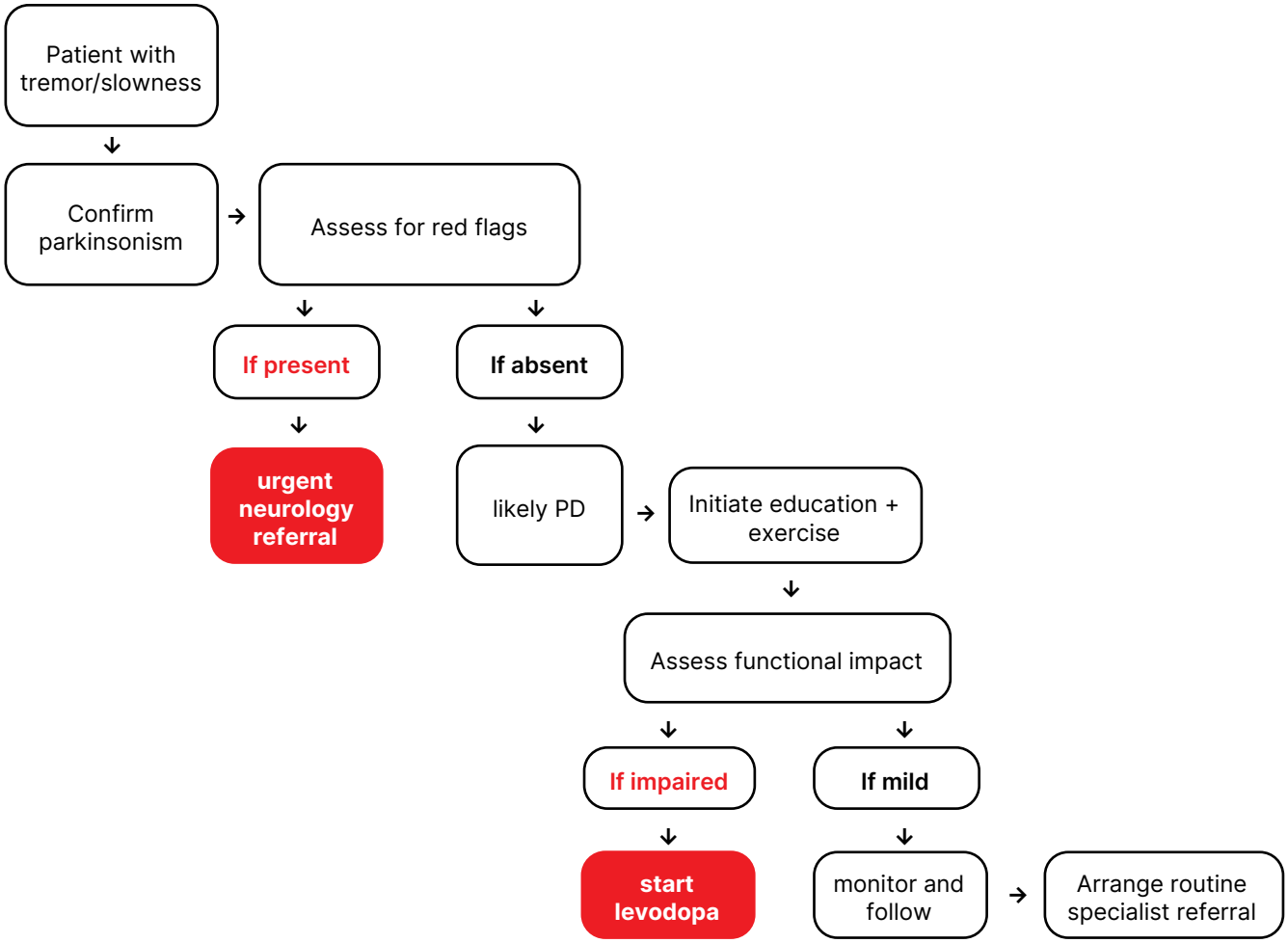

Figure 1. Primary Care Approach to Suspected Parkinson's Disease; *courtesy of Dilpriya K. Mangat, MD, FRCPC, MBA.*

Feature	Parkinson Disease	Atypical Parkinsonism	Drug-Induced	Vascular	Essential Tremor
Onset	Asymmetric	Often rapid/symmetric	Symmetric	Lower-body	Bilateral
Tremor	Rest tremor	Often absent	Variable	Rare	Action tremor
Bradykinesia	Present with decrement	Present + atypical signs	Present	Present	Absent
Gait	Late instability	Early falls	Variable	Early gait disorder	Usually normal
Levodopa response	Good	Poor	Variable	Poor	None

Table 1. Key Clinical Features in the Differential Diagnosis of Parkinsonism; *courtesy of Dilpriya K. Mangat, MD, FRCPC, MBA.*

Canada.[10] As such, clinical judgment remains the cornerstone of diagnosis in most settings.

Non-Motor Symptoms

Non-motor symptoms are a hallmark of PD and contribute significantly to patient morbidity. These symptoms often precede motor manifestations and may include sleep disturbances, mood disorders, cognitive impairment, and autonomic dysfunction.[5]

Primary care clinicians should routinely screen for these non-motor symptoms. A cognitive assessment can be performed using the Montreal Cognitive Assessment (MoCA), which has demonstrated utility in detecting early cognitive impairment in PD.[11] The Non-Motor Symptoms Questionnaire (NMSQuest) provides a practical tool for identifying a broad range of non-motor symptoms,[12] while the SCOPA-AUT questionnaire can help assess autonomic dysfunction.[13]

Recognizing and managing non-motor symptoms is essential, as these features often have a greater impact on quality of life than motor symptoms alone.

Initial Management in Primary Care

Education and Counselling

Effective management begins with patient education. Patients should understand that PD is a chronic, progressive condition with variable progression. Counselling should address medication adherence, fall prevention, driving safety, and the importance of maintaining physical activity.

A critical safety point is that dopaminergic medications should not be stopped abruptly, as this can lead to severe clinical deterioration and potentially life-threatening complications.[4]

Exercise and Rehabilitation

Exercise is a cornerstone of PD management and should be initiated early. Evidence supports improvements in motor function, balance, and overall disease severity with regular physical activity.[4]

Referral to physiotherapy, occupational therapy, and speech-language pathology should occur early in the disease course. These interventions help maintain function, reduce fall risk, and support communication and swallowing difficulties.

Pharmacotherapy

Levodopa remains the most effective treatment for motor symptoms and should not be delayed once symptoms interfere with daily function.[4] Evidence from the PD MED trial demonstrated that levodopa provides superior long-term quality-of-life outcomes compared to levodopa-sparing strategies.[14]

Treatment is typically initiated at a low dose and titrated gradually based on clinical response. Common side effects include nausea, orthostatic hypotension, hallucinations, and dyskinesias. These risks are particularly relevant in older adults and require careful monitoring.

Dopamine agonists may be considered in selected patients but are associated with higher rates of adverse effects, including hallucinations, sleep disturbances, and impulse control disorders. Their use should be approached with caution, especially in patients over 70 years of age.[4] See **Table 2** for a summary of pharmacologic management options for Parkinson's disease in primary care.

Motor Fluctuations and Medication-Related Complications

As PD progresses and dopaminergic therapy continues, many patients develop motor fluctuations and treatment-related complications. These are important for primary care clinicians to recognize, as they directly impact function, safety, and quality of life.[4,15]

Dyskinesias are involuntary, non-purposeful movements that may range from mild (e.g., subtle ankle or finger movements) to severe generalized writhing. They are most commonly associated with peak levodopa levels and are therefore often referred to as "peak-dose dyskinesias." While not always distressing to patients, dyskinesias may interfere with function or increase fall risk in more advanced disease.[4]

Motor fluctuations are commonly described using "on-off" terminology. During "on" periods, patients experience adequate symptom control and improved mobility. During "off" periods, motor symptoms re-emerge, often with reduced mobility and functional impairment. A common pattern is "wearing off," where symptoms return before the next scheduled medication dose, reflecting a shortening duration of levodopa's effect over time.[14,15]

Medication/Class	Mechanism	Role in Care	Starting Dose	Key Adverse Effects	Clinical Notes
Levodopa/Carbidopa (Sinemet®) **or Levodopa/ Benserazide** (Prolopa®)	Converted to dopamine in the brain	First-line for motor symptoms	½ tablet (100/25) TID	Dyskinesia, nausea, orthostasis, hallucinations	Most effective therapy; do not delay when function impacted; protein may reduce absorption
Dopamine Agonists (Pramipexole, Ropinirole, Rotigotine)	Mimics dopamine activity	Alternative or adjunct	Pramipexole 0.125 mg TID	Sleep attacks, hallucinations, edema, impulse control disorders	Use cautiously in older adults (>70); monitor behaviour changes
Amantadine	Enhances dopamine release, NMDA antagonist	Early symptoms or dyskinesia management	100 mg daily	Confusion, hallucinations, edema, livedo reticularis	Useful for dyskinesia reduction; caution in cognitive impairment
COMT Inhibitors (Entacapone)	Inhibits peripheral levodopa breakdown	Adjunct for wearing-off	Given with levodopa doses	Dyskinesia, diarrhea	Extends levodopa effect; used when response shortens
Levodopa/Carbidopa/ Entacapone (Stalevo®)	Combined levodopa + COMT inhibition	Wearing-off management	Equivalent levodopa dose	Dyskinesia	Simplifies regimen in fluctuating patients
Levodopa Intestinal Gel (Duodopa®)	Continuous intestinal levodopa delivery	Advanced PD	Specialist initiated	Device complications, dyskinesia	Not primary care initiated
MAO-B Inhibitors (Rasagiline, Selegiline)	Reduces dopamine breakdown	Mild symptoms or adjunct	Rasagiline 0.5–1 mg daily	Dyskinesia, insomnia	Watch drug interactions (SSRIs, sympathomimetics)
Anticholinergics (Trihexyphenidyl)	Reduces cholinergic activity	Tremor-predominant PD (younger patients)	Low dose titration	Confusion, delirium, dry mouth	Avoid in older adults
Domperidone *(supportive)*	Peripheral dopamine blockade	Treat levodopa-induced nausea	10 mg TID PRN	QT prolongation	Use cautiously; avoid high doses

Table 2. Pharmacologic Management of Parkinson's Disease in Primary Care; *courtesy of Dilpriya Mangat, MD, FRCPC, MBA*.

Abbreviations: COMT: catechol-O-methyltransferase; **NMDA:** N-methyl-D-aspartate; **PD:** Parkinson's disease; **PRN:** as needed; **SSRIs:** selective serotonin reuptake inhibitors; **TID:** three times a day

Recognition of these patterns in primary care is important, as they often signal the need for medication adjustment or specialist input.[4]

Referral and Multidisciplinary Care

Referral to a neurologist or movement disorders specialist is indicated when there is diagnostic uncertainty, the presence of red flags, or a suboptimal response to therapy. Early referral is particularly important in cases of atypical presentation or rapid disease progression.[7]

Primary care clinicians should also facilitate access to multidisciplinary care. Allied health professionals play a critical role in maintaining function and quality of life. Community resources, including Parkinson Canada, provide valuable support for patients and caregivers.

Conclusion

PD is a common and complex condition that requires a thoughtful and structured approach in primary care. Early recognition of Parkinsonism, careful differentiation from alternative diagnoses, and timely initiation of treatment can significantly improve patient outcomes. Primary care clinicians play a central role in managing both motor and non-motor symptoms, coordinating care, and supporting patients and families throughout the disease trajectory.

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D.M.: NexCerebrum Brain Health and Memory Wellness: Founder and CEO

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