

PD & Medication: Medications Commonly Used to Treat PD

Until there is a cure for Parkinson disease (PD), medications will remain important for treating PD symptoms. Drugs can help manage or reduce symptoms like slowness, rigidity and tremor. No two people have exactly the same experience with PD. Drug regimes need to be “fit” to treat your symptoms. Finding the best medication(s), timing and dose may take some time. As symptoms change, drugs, timing and dose will change.

Symptoms of PD appear when the levels of a chemical in your brain, called dopamine, are low. For reasons we don’t understand, in PD the cells producing dopamine don’t function properly. With too little dopamine, movements don’t happen the way they did before. They are slower, there may be a tremor and coordination may be “off”.

Drugs used in PD are primarily aimed to work on the dopamine system in the brain. They work mainly to improve problems with movement. Most drugs work in one of the following ways:

- increase the amount of dopamine in the brain
- stimulate parts of the brain influenced by dopamine
- prevent the breakdown of dopamine before it can be used in the brain

Levodopa

Levodopa is the “gold standard” for treating PD symptoms. It is the most effective treatment for the motor symptoms of PD. It works by replacing the dopamine in the brain. Levodopa is always combined with either carbidopa or benserazide which help the levodopa get into the brain where it is changed into dopamine. Levodopa may be used alone or in combination with other PD drugs.

Levodopa formulations available in Canada include:

- levodopa/carbidopa (*Sinemet*) - most common brand name form of levodopa
- levodopa/benserazide (*Prolopa*)
- levodopa/carbidopa with entacapone (*Stalevo*)

Many drug plans will cover generic brands only. For most people, generic substitutions for brand name drugs work well. Occasionally, people respond better to the brand name drug. Your doctor will be able to appeal to your drug plan for coverage if you respond better to the name brand levodopa.

Possible side effects:

- nausea or vomiting
- low blood pressure
- hallucinations (seeing, hearing, feeling and smelling things that aren’t there)
- sleep problems - sleepiness
- over time, involuntary movements (dyskinesia), less reliable or unpredictable response

If you experience nausea with levodopa, taking your pills with food can sometimes help to reduce feelings of sickness. Sometimes the nausea will go away after you get used to taking the drug. For some people, protein seems to interfere with the way levodopa works. The protein may affect how well the

drug is absorbed by the body. If this is true for you, you may benefit from taking your medication 30 minutes before a meal.

Dopamine Agonists

Dopamine agonists mimic the effects of dopamine. They essentially trick the brain into responding as if there was dopamine in the brain. Dopamine agonists may be used as the first medication to treat PD symptoms or in combination with other PD drugs.

Dopamine agonists available in Canada include:

- ropinirole (*Requip*)
- pramipexole (*Mirapex*)
- bromocriptine (*Parlodel*) - less commonly used than the others
- rotigotine (*Neupro transdermal patch*)

Possible side effects:

- sleepiness, including sudden onset of sleepiness
- impulsive behaviours including uncontrolled eating, compulsive gambling, hyper-sexuality, excessive shopping – CONTACT YOUR DOCTOR IF YOU EXPERIENCE ANY OF THESE, OR SIMILAR BEHAVIOURS
- leg swelling
- hallucinations (seeing, hearing, feeling and smelling things that aren't there)
- involuntary movements (dyskinesia)

Catechol-O-Methyltransferase (COMT) Inhibitors

COMT inhibitors block an enzyme that breaks down levodopa before it can be turned into dopamine. This allows more dopamine to be available to be used by the brain. COMT inhibitors alone do not help PD – they must be used with levodopa. They help levodopa work more smoothly. They can be added if your dose of levodopa is not working for long enough (end-of-dose deterioration) or the effect 'wears off' before your next dose is due.

COMT inhibitors available in Canada include:

- entacapone (*Comtan*)
- in combination entacapone/levodopa/carbidopa (*Stalevo*)

Possible side effects:

- nausea
- sleepiness
- light-headedness
- hallucinations (seeing, hearing, feeling and smelling things that aren't there)
- involuntary movements (dyskinesia)

Monoamine-Oxidase-B (MAO-B) Inhibitors

MAO-B inhibitors block an enzyme that breaks down dopamine in your brain. This leaves more dopamine available for your brain to use. MAO-B inhibitors may be used to control symptoms in early PD or in combination with other PD drugs.

MAO-B inhibitors available in Canada include:

- selegiline (*Eldepryl*)
- rasagiline (*Azilect*)

Possible side effects:

- interactions with other medications, particularly antidepressants and decongestants
- headaches
- nausea
- hallucinations (seeing, hearing, feeling and smelling things that aren't there)
- involuntary movements (dyskinesia)
- flu-like symptoms

Levodopa/carbidopa Intestinal Gel (Duodopa)

Health Canada just approved this method of administering levodopa/carbidopa into the body. Instead of taking a pill, a tube is surgically placed into the small intestine. A pump attached to the tube then delivers the drug, in the form of a gel, into the small intestine. People with more advanced PD who are having trouble with managing PD symptoms and side effects with oral drugs may benefit from this form of drug delivery. Duodopa is currently available, in a limited fashion, in Edmonton and Calgary through the Movement Disorders Programs.

Amantadine

This drug is used primarily to help reduce involuntary movements (dyskinesia) that may be a side effect of levodopa (it is also an antiviral drug used to treat the flu). Amantadine (*Symmetrel*) alone does not help PD symptoms.

Possible side effects:

- dry mouth
- dizziness
- nausea
- insomnia
- purplish discolouration of the skin and swelling of the legs

Anticholinergics

These drugs may be used to help correct the imbalance of the chemical acetylcholine in the brain resulting from a decrease of dopamine. They may help with slowness, tremors and rigidity.

Anticholinergics available in Canada include:

- trihexyphenidyl (*Artane*)
- benztropine (*Cogentin*)

Possible side effects:

- dry mouth
- confusion, changes in memory, thinking, concentration
- constipation
- urine retention
- blurred vision