

Rasagiline (“Azilect”) & Selegiline (“Eldepryl”)

How they work: These meds slow the body’s breakdown of levodopa. Some studies suggest that rasagiline & selegiline may slow down the progression of PD, but other studies have not supported this.

Side Effects:

- **Minimal.** However, they can cause harmful increases in blood pressure if you eat very large amounts of food containing tyramine, such as processed meats and some aged cheeses, or are taking certain antidepressants or pain meds.

Entacapone (Comtan)

How it works: Slows the body’s breakdown of levodopa and only works when taken with carbidopa-levodopa.

Side Effects:

- Can turn urine orange, and rarely can cause diarrhea.
- Can worsen the side effects of carbidopa-levodopa.

Stalevo (“Entacapone +Levodopa”)

How it works: Combination of entacapone and levodopa in 1 pill. Reduces the amount of pills taken

Side Effects: same as entacapone.

Amantadine

How it works: This medication reduces dyskinesia and can reduce symptoms of PD in some patients

Side Effects:

- **Confusion:** can cause or worsen confusion in patients with advanced PD
- **Hallucinations:** can cause or worsen hallucinations in patients with advanced PD
- **Lower Extremity Edema**

Trihexyphenidyl (“Artane”)

How it works: Trihexphenidyl is used to treat tremor in PD

Side Effects:

This medication can cause or worsen the following problems in older patients: confusion, lightheadedness upon standing, urinary retention, dry eyes, hallucinations

**Parkinson’s Disease Research
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What causes Parkinson's disease?

Parkinson's disease (PD) is a progressive movement disorder caused by a reduction of specific neurons that produce a chemical called dopamine. It is required for parts of the brain that control movement and coordination. Many of the treatments for PD are aimed at replacing or prolonging dopamine activity.

Carbidopa-Levodopa ("Sinemet")

How it works: Levodopa is converted into dopamine in your brain. Carbidopa stops the breakdown of levodopa in blood so that it can get into the brain. It comes in several forms, including immediate release ("IR") and long acting ("CR" or "SA").

Side Effects

- **Nausea:** It's ok to take your carbidopa-levodopa with a small snack like crackers. It should not be taken with meals, because it competes with protein for absorption, so it's best to wait an hour before and after meals.
- **Wearing off:** after several years of treatment with carbidopa-levodopa, the medicine can wear off sooner. This can result in the need for frequent dosing.
- **Dyskinesia:** Patients often develop "wiggly" or swaying movements after taking carbidopa-levodopa for many years.
- **Lightheadedness:** carbidopa-levodopa can lower your blood pressure and cause lightheadedness when you stand up quickly.
- **Hallucinations:** carbidopa-levodopa can cause or worsen hallucinations in people with advanced PD

Duopa

How it works: Continuous infusion of carbidopa/levodopa through a PEG tube inserted into the stomach. Eliminates need to take pills, steady state of symptom control, alternative to deep brain stimulation surgery.

Side Effects: abdominal pain, procedure pain, nausea, infection

Rytary

How it works: extended-release carbidopa and levodopa treatment that stays in the blood for a longer time. It is in capsule form and contains both immediate-release and extended-release beads. Used for significant on-off times or dyskinesia, frequent Sinemet dosing, morning off symptoms.

Side Effects: Nausea, lightheadedness, hallucinations and delusions

Parcopa

How it works: orally-dissolving form of carbidopa-levodopa. It comes as a tablet to be placed under the tongue. It is useful in situations where patients cannot swallow

Side Effects: Same as carbidopa-levodopa

Apomorphine ("Apokyn")

How it works: Dopamine Agonist injected under the skin and provides a rapid-onset (about 10 mins) that can help "rescue" from sudden off times and severe freezing.

Side Effects: Nausea/vomiting, low blood pressure

Ropinirole ("Requip") & Pramipexole ("Mirapex")

How they work: These are called "dopamine agonists" because they activate the part of the brain that starts the signal to get moving. Agonists *act like* dopamine.

Side Effects:

Common:

- Mild **stomach upset** and **sleepiness**. These tend to go away after a few weeks, and can often be avoided by starting at a low dose and increasing slowly.

Less Common:

- **"Sleep attacks:"** when sleep comes on very suddenly.
- **Impulse control disorder:** some patients develop compulsive behaviors like gambling, porn addiction, or overeating.
- **Hallucinations and confusion:** in patients with advanced PD

Rotigotine ("Neupro Patch")

How it works: Dopamine Agonist but the medication is released slowly through an easy patch system that only needs to be applied once a day.

Side Effects:

Common

- Insomnia, nausea, vomiting, reaction at application site (burning, itching, redness, skin rash, swelling, soreness)

Less Common:

- Dizziness, increased or decreased blood pressure