Neuro.Wiki

Anti-Parkinsonian Medications

Anti-parkinsonian medications by class — formulation, dosing, indications, and side effects. Verify doses before prescribing.

Motor symptoms

Drug	Formulation	Initial dosage	Maximum dose	Indications / precautions	Side effects
Dopamine					
Levodopa/Carbidopa	**Sinemet** tab (10/100, 25/100, 25/250); **Parcopa** ODT; **Sinemet CR** (25/100, 50/200); **Rytary** ER caps (23.75/95 – 61.25/245)	25/100 ½ tab TID	8 tabs 25/250 per day (200 mg carbidopa)	Take 30 min before food Sudden interruption → hyperpyrexia & delirium Caution in arrhythmia	**Common dopaminergic effects:** falling asleep during ADLs, impulse-control disorders, hallucination/confusion, dyskinesia, nausea, dizziness, constipation, orthostatic hypotension, anxiety
Levodopa (inhaled) (Inbrija)	**Inbrija** inhalation powder 42 mg caps	84 mg (2 caps) per "off" episode	84 mg up to 5×/day	Intermittent rescue for "off" episodes Caution in asthma/COPD	Cough, URI, discolored sputum, nausea + dopaminergic effects
MAO-B inhibitors					
Selegiline	**Eldepryl** / **Carbex** tab (5 mg); **Zelapar** ODT (1.25 mg)	5 mg BID (tab); 1.25 mg daily (ODT)	5 mg BID; 1.25 mg daily	Adjunct to levodopa (long "off" periods)	Dopaminergic effects (as Sinemet)
Rasagiline	**Azilect** tab (0.5, 1 mg)	0.5 mg daily	1 mg daily	Adjunct to levodopa or monotherapy	Dopaminergic effects (as Sinemet)
Safinamide	**Xadago** tab (50, 100 mg)	50 mg daily	100 mg daily	Adjunct to levodopa/carbidopa for "off" periods only	Dopaminergic effects (as Sinemet); may cause/worsen dyskinesia
COMT inhibitors					
Entacapone	**Comtan** tab (200 mg)	200 mg with each dose of levodopa	8 tabs per day	Adjunct to levodopa (long "off" periods)	Dopaminergic effects (as Sinemet) **+ diarrhea – abdominal pain – orange-colored urine**
Opicapone (Ongentys)	**Ongentys** caps (25, 50 mg)	50 mg once daily at bedtime	50 mg/day	Once-daily adjunct for "off" episodes; no food 1 h before to 1 h after the dose	Dyskinesia, constipation; **less orange urine/diarrhea than entacapone**
Tolcapone (Tasmar)	**Tasmar** tab (100, 200 mg)	100 mg TID	600 mg/day	Boxed warning: fatal hepatotoxicity — monitor LFTs; reserve for refractory "off"	Diarrhea, dyskinesia, hallucination, orange urine
Adenosine A2A antagonist					
Istradefylline (Nourianz)	**Nourianz** tab (20, 40 mg)	20 mg daily	40 mg daily	Adjunct to levodopa/carbidopa for "off" episodes; max 20 mg/day with strong CYP3A4 inhibitors; use 40 mg in heavy smokers (≥20/day); avoid strong CYP3A4 inducers	Dyskinesia, dizziness, hallucination, insomnia, nausea
Dopamine agonists					
Apomorphine	**Apokyn** solution 30 mg/3 mL (10 mg/mL) with multi-use injector	0.2 mL (2 mg) SC test dose, then PRN for "off" episodes (doses ≥2 h apart)	0.6 mL (6 mg)/dose; ≤5 doses/day	Pretreat antiemetic trimethobenzamide 300 mg TID starting 3 days prior; contraindicated with 5-HT3 antagonists (ondansetron) — severe hypotension	Dopaminergic effects (as Sinemet) **+ hallucinations (14%) – impulse-control disorders – dyskinesia (24%) – angina/MI (4%) – QTc prolongation – priapism**
Bromocriptine	**Parlodel** tab (2.5, 5 mg)	1.25 mg BID with meals	—	Titrate q14–28 days; avoid in valvular heart disease	Dopaminergic effects (as Sinemet)
Pramipexole	**Mirapex** tab (0.125, 0.25, 0.5, 0.75, 1, 1.5 mg); **Mirapex ER** (0.375, 0.75, 1.5, 2.25, 3, 3.75, 4.5 mg)	0.125 mg TID (IR); 0.375 mg daily (ER)	4.5 mg/day	—	Dopaminergic effects (as Sinemet)
Ropinirole	**Requip** tab (0.25, 0.5, 1, 2, 3, 4, 5 mg); **Requip XL** (2, 4, 6, 8, 12 mg)	0.25 mg TID (IR); 2 mg daily (XL)	24 mg/day	Binds to melanin (longer duration in patients with darker skin)	Dopaminergic effects (as Sinemet) **+ nausea – dizziness – leg edema**
Rotigotine	**Neupro** patches (1, 2, 3, 4, 6, 8 mg/24h)	2 mg patch daily	Early PD 6 mg/24h; advanced 8 mg/24h	Avoid in sulfite-allergic patients	Dopaminergic effects (as Sinemet) **+ application-site reactions**

Drug	Formulation	Initial dosage	Maximum dose	Indications / precautions	Side effects
Anticholinergics					
Benztropine	**Cogentin** tab (0.5, 1, 2 mg)	0.5–1 mg QHS	6 mg/day	Tremor-predominant PD; avoid in elderly / cognitive impairment	Confusion, hallucination, dry mouth, blurred vision, urinary retention
Trihexyphenidyl (**Artane**)	Tab 2, 5 mg; soln 2 mg/5 mL	1 mg/day	6–10 mg/day	Tremor-predominant PD; avoid in elderly / cognitive impairment	Anticholinergic effects (as benztropine)
Other					
Amantadine	**Symmetrel** tab (100 mg)	100 mg BID	400 mg/day (supervised)	Caution in seizures, renal failure, CHF; reduce in renal impairment; do not stop abruptly	Suicidal ideation, lowers seizure threshold, confusion, hallucination, nausea, dizziness, insomnia, dry mouth, peripheral edema, livedo reticularis
Amantadine ER	**Gocovri** caps (68.5, 137 mg)	137 mg QHS ×1 wk then 274 mg QHS	274 mg/day	Dyskinesia + "off" episodes; contraindicated in ESRD (CrCl <15); ↓dose in renal impairment	Same as amantadine
Carbidopa/Levodopa/Entacapone	**Stalevo** tab (12.5/50/200, 18.75/75/200, 25/100/200, 31.25/125/200, 37.5/150/200, 50/200/200)	As Sinemet	8 tabs/day (Stalevo 200: 6/day)	Combines levodopa + carbidopa + COMT inhibitor in one tablet	As Sinemet + entacapone effects

Key interactions & cautions

- **All dopaminergics:** impulse-control disorders (gambling, hypersexuality, spending), sudden sleep onset during ADLs (driving), confusion, hallucination. Abrupt discontinuation → NMS.
- **MAO-B inhibitors:** serotonin syndrome with opioids (meperidine, methadone, tramadol), SNRIs, TCAs, cyclobenzaprine, stimulants, or St John's wort; hypertensive crisis with other MAOIs/linezolid; psychosis with dextromethorphan.
- **Entacapone:** can't combine with non-selective MAOIs; caution with epinephrine/norepinephrine/dopamine; microscopic colitis → diarrhea in ~10% (onset ~4 wks).
- **Rotigotine:** no meal interaction, no hepatic/renal adjustment; rotate sites (not same spot within 14 days); press 30 s on application.
- **RLS terms:** tolerance (needs ↑ dose), rebound (worsening at end of dose), augmentation (overall worsening — only with dopaminergics; manage with a ≥3-month dopaminergic holiday).

Non-motor manifestations

Symptom	Drug of choice	Maximum dose	Side effects	Notes
Neurogenic orthostatic hypotension	**Droxidopa** (Northera 100/200/300 mg)	600 mg TID	Boxed: supine hypertension; nausea, dizziness	Synthetic NE precursor; start 100 mg TID, titrate q24–48 h; last dose ≥3 h before bed; may exacerbate ischemic heart disease
Psychosis (hallucinations/delusions)	**Pimavanserin** (Nuplazid 34 mg cap / 10 mg tab)	34 mg daily (↓10 mg with strong CYP3A4 inhibitor)	Peripheral edema, confusion, QT prolongation	Only FDA-approved drug for PD psychosis (5-HT2A inverse agonist)
	Clozapine (Clozaril)	—	Agranulocytosis (REMS/ANC monitoring), seizures, myocarditis	Most evidence-based; does not worsen motor function
	Quetiapine (Seroquel 25/50/100)	—	Sedation, QT prolongation, orthostasis	Off-label; commonly used first for convenience
Dementia	**Rivastigmine** (Exelon cap 1.5–6 mg; patch 4.6/9.5/13.3)	6 mg BID	Nausea, anorexia, weight loss	Only FDA-approved cholinesterase inhibitor for PD dementia
	Donepezil (Aricept 5/10/23 mg)	10 mg daily	Bradycardia, heart block, N/V/D, worsens GERD/PUD, asthma/COPD	Off-label in PDD (Alzheimer's-indicated); start 5 mg QHS ×4 wk
REM behavior disorder	**Clonazepam** (0.5–2 mg QHS); **melatonin** (3–6 mg QHS)	—	—	—
RLS / PLM	**Dopamine agonists** (pramipexole, ropinirole, rotigotine); opioids, gabapentin, clonazepam	—	—	—
Drooling	**Glycopyrrolate** (Robinul 1–2 mg); ipratropium spray; clonidine; modafinil; botox	2 mg TID	Anticholinergic effects	Glycopyrrolate is anti-muscarinic, doesn't cross BBB