

## PGx Report - Neurology

Type: Drugs Prescribed for the Treatment of ADHD, Related Drugs

Drug Class	Generic	Primary Mechanism Involved	Other Mechanisms Involved	Used As Directed	May Have Decreased Efficacy	May Have Increased Toxicity
Anti ADHD Stimulants						
Amphetamine	<a href="#">Dextroamphetamine</a>	Renal Excretion, CYP2D6	DBH, GLYAT	●		
	<a href="#">Levoamphetamine</a>	Renal Excretion, CYP2D6	FMO3	●		
NDRI	<a href="#">Dexmethylphenidate</a>	CYP2D6	Renal Excretion	●		
Psychostimulant	<a href="#">Lisdexamfetamine</a>	Hydrolysis	CYP2D6, Renal Excretion	●		
	<a href="#">Methylphenidate</a>	CYP2D6	Renal Excretion, SLC6A2, SLC6A3, SLC6A4, DRD3	●		
Anti ADHD Non-stimulants						
NERI	<a href="#">Atomoxetine</a>	CYP2D6	CYP2C19, CYP3A4, CYP3A5, SLC6A2	●		
Central alpha-2 Adrenergic Agonist	<a href="#">Clonidine</a>	CYP2D6	CYP1A2, CYP3A4, CYP3A5	●		
Antidepressants	<a href="#">Bupropion</a>	CYP2B6	CYP3A4, CYP2D6, CYP1A2, CYP3A5	●		
	<a href="#">Imipramine</a>	CYP1A2, CYP2D6	CYP2C19, CYP3A4, CYP3A5	●		
	<a href="#">Desipramine</a>	CYP2D6	CYP1A2, CYP2C19	●		
	<a href="#">Reboxetine</a>	CYP3A4	CYP3A5	●		
Wakefulness-promoting agent	<a href="#">Modafinil</a>	Hydrolysis, CYP2D6	CYP1A2, CYP3A4, CYP2B6, CYP3A5	●		
	<a href="#">Armodafinil</a>	CYP3A4	CYP3A5	●		
Anti-insomnia						
Melatonin Receptor Agonist	<a href="#">Ramelteon</a>	CYP1A2	CYP2C19, CYP3A4, CYP3A5	●		
Abbreviations: ADHD, Attention deficit hyperactivity disorder; NERI; norepinephrine reuptake inhibitor, NDRI, norepinephrine-dopamine reuptake inhibitor.						

## PGx Report - Neurology

Type: Drugs Prescribed for the Treatment of Epilepsy

Drug Class	Generic	Primary Mechanism Involved	Other Mechanisms Involved	Used As Directed	May Have Decreased Efficacy	May Have Increased Toxicity
Antiepileptic						
Barbiturates	<a href="#">Phenobarbital</a>	CYP2C19	ABCB1	●		
Carbamates	<a href="#">Felbamate</a>	CYP3A4	CYP3A5	●		
Carboxamides	<a href="#">Carbamazepine</a>	CYP3A4	CYP2B6, CYP1A2, CYP3A5, ABCB1, HLA-B*1502, HLA-A*3101, ABCC2	●		
Fatty acids	<a href="#">Tiagabine</a>	CYP3A4	CYP3A5, CYP1A2, CYP2D6, CYP2C19	●		
Fructose derivatives	<a href="#">Topiramate</a>	Renal Excretion	CYPs, UGTs	●		
GABA analogs	<a href="#">Gabapentin</a>	Renal Excretion		●		
	<a href="#">Pregabalin</a>	Renal Excretion		●		
Hydantoin	<a href="#">Phenytoin</a>	CYP2C19	CYP2C9, CYP3A4, CYP3A5, CYP2D6, ABCB1, HLA-B*1502	●		
	<a href="#">Mephenytoin</a>	CYP2C19	CYP2C9, CYP2B6, CYP1A2, CYP2D6	●		
Oxazolinediones	<a href="#">Trimethadione</a>	CYP2C9	CYP3A4, CYP3A5	●		
	<a href="#">Paramethadione</a>	CYP2C9		●		
Pyrimidinedione	<a href="#">Primidone</a>	CYP2C9	CYP2C19	●		
Pyrrolidines	<a href="#">Brivaracetam</a>	CYP2C19, CYP2C9	CYP3A4, CYP3A5, CYP2B6	●		
	<a href="#">Levetiracetam</a>	Renal Excretion		●		
	<a href="#">Seletracetam</a>	Renal Excretion		●		
Succinimides	<a href="#">Ethosuximide</a>	CYP3A4	CYP3A5	●		
Sulfonamides	<a href="#">Zonisamide</a>	CYP3A4	CYP2C19, CYP3A5	●		
Other	<a href="#">Lacosamide</a>	CYP2C9	CYP2C19, CYP3A4	●		
	<a href="#">Perampanel</a>	CYP3A4	CYP3A5	●		
Abbreviations: GABA, gamma-aminobutyric acid.						

## PGx Report - Neurology

Type: Anxiolytic, Hypnotic, Sedative, Anticonvulsant, Muscle Relaxants

Drug Class	Generic	Primary Mechanism Involved	Other Mechanisms Involved	Used As Directed	May Have Decreased Efficacy	May Have Increased Toxicity
Anxiolytic, Hypnotic, Sedative, Anticonvulsant, and Muscle Relaxant						
Benzodiazepine Short-acting	<a href="#">Midazolam</a>	CYP3A4	CYP3A5	✔		
	<a href="#">Triazolam</a>	CYP3A4	CYP3A5	✔		
	<a href="#">Brotizolam</a>	CYP3A4	CYP3A5	✔		
Benzodiazepine Intermediate-acting	<a href="#">Alprazolam</a>	CYP3A4	CYP3A5	✔		
	<a href="#">Bromazepam</a>	CYP1A2	CYP2D6	✔		
	<a href="#">Clobazam</a>	CYP2C19	CYP3A4, CYP3A5, CYP2B6	✔		
	<a href="#">Flunitrazepam</a>	CYP2C19	CYP2C9, CYP3A4, CYP3A5	✔		
	<a href="#">Estazolam</a>	CYP3A4	CYP3A5	✔		
	<a href="#">Clonazepam</a>	CYP3A4	CYP2C19, CYP3A5	✔		
	<a href="#">Quazepam</a>	CYP3A4	CYP2C19, CYP3A5	✔		
	<a href="#">Lormetazepam</a>	CYP3A4	CYP3A5	✔		
	<a href="#">Nitrazepam</a>	CYP3A4	CYP3A5	✔		
	<a href="#">Temazepam</a>	CYP2C19	CYP3A4, CYP3A5	✔		
Benzodiazepine Long-acting	<a href="#">Diazepam</a>	CYP2C19, CYP3A4	CYP3A5, CYP2B6, CYP1A2	✔		
	<a href="#">Clorazepate</a>	CYP3A4	CYP3A5	✔		
	<a href="#">Chlordiazepoxide</a>	CYP3A4	CYP3A5	✔		
	<a href="#">Flurazepam</a>	CYP3A4	CYP3A5	✔		
	<a href="#">Nordazepam</a>	CYP3A4	CYP3A5	✔		
Nonbenzodiazepine hypnotic	<a href="#">Zolpidem</a>	CYP3A4	CYP3A5, CYP1A2, CYP2D6	✔		
	<a href="#">Zaleplon</a>	AOX1, CYP3A4	CYP3A5	✔		
	<a href="#">Zopiclone</a>	CYP3A4	CYP2C9, CYP3A5	✔		
	<a href="#">Eszopiclone</a>	CYP3A4	CYP3A5	✔		

## PGx Report - Neurology

Type: Drugs Prescribed for the Treatment of Alzheimer's and Parkinson's, Related Drugs

Drug Class	Generic	Primary Mechanism Involved	Other Mechanisms Involved	Used As Directed	May Have Decreased Efficacy	May Have Increased Toxicity
Anti-Alzheimer disease						
Acetylcholinesterase inhibitor	<a href="#">Tacrine</a>	CYP1A2	CYP2D6	✔		
	<a href="#">Donepezil</a>	CYP2D6	CYP3A4, CYP3A5	✔		
	<a href="#">Galantamine</a>	CYP2D6	CYP3A4, CYP3A5	✔		
NMDA receptor antagonist	<a href="#">Memantine</a>	Renal Excretion	UGTs	✔		
Anti-Parkinson disease						
Inhibitor of MAO-B	<a href="#">Selegiline</a>	CYP2B6	CYP2C9, CYP3A4, CYP3A5	✔		
	<a href="#">Rasagiline</a>	CYP1A2		✔		
Dopamine receptor agonists	<a href="#">Bromocriptine</a>	CYP3A4	CYP3A5	✔		
	<a href="#">Pramipexole</a>	Renal Excretion	DRD3	✔		
	<a href="#">Ropinirole</a>	CYP1A2	UGTs, Renal Excretion	✔		
Anticholinergics - Antimuscarinics	<a href="#">Diphenhydramine</a>	CYP2D6	CYP3A4, CYP3A5	✔		
Anti-hyperkinetic movement	<a href="#">Tetrabenazine</a>	CYP2D6	CYP1A2	✔		
Anti-amyotrophic lateral sclerosis drug	<a href="#">Riluzole</a>	CYP1A2		✔		

Abbreviations: NMDA, N-methyl-D-aspartate; COMT, Catechol-O-methyltransferase.