

Metabolism and CYP450 Drug Interactions for Psychiatric Medications

Bolded enzymes are major/strong and non-bolded enzymes are minor unless otherwise noted: m = moderate

Medications used in depression

	Medication	Metabolized by or Substrate of	Induces	Inhibits
SSRI	Citalopram	3A4, 2C19, 2D6	None known	1A2, 2B6, 2C19, 2D6
	Escitalopram	2C19, 3A4, 2D6	None known	1A2, 2C9, 2C19, 2D6, 2E1, 3A
	Fluoxetine	2C9, 2D6, 1A2, 2B6, 2C19, 2E1, 3A4	None known	2D6, 2C19 (m), 1A2, 2B6, 2C9
	Fluvoxamine	1A2, 2D6	None known	1A2, 2C19, 2B6, 2C9, 2D6, 3A4
	Paroxetine	2D6	None known	2D6, 2B6 (m), 1A2, 2C9, 2C19, 3A4
	Sertraline	2D6, 2B6, 2C9, 2C19, 3A4	None known	2B6 (m), 2C19 (m), 2D6 (m), 3A4 (m), 1A2, 2C8, 2C9
SNRI	Desvenlafaxine	3A4	3A4 (m)	2D6
	Duloxetine	1A2, 2D6	None known	2D6 (m)
	Levomilnacipran	3A4, 2C8, 2C19, 2D6, P-glycoprotein	None known	None known
	Venlafaxine	2D6, 3A4, 2C9, 2C19	None known	2B6, 2D6, 3A4
TCA	Amitriptyline	2D6, 1A2, 2B6, 2C9, 2C19, 3A4	None known	1A2, 2C9, 2C19, 2D6, 2E1
	Desipramine	2D6, 1A2	None known	2A6 (m), 2B6 (m), 2D6 (m), 3A4 (m), 2E1
	Doxepin	2D6, 1A2, 2C19, 3A4	None known	None
	Imipramine	2C19, 2D6, 1A2, 2B6, 3A4	None known	2D6 (m), 1A2, 2C19, 2E1
	Nortriptyline	2D6, 1A2, 2C19, 3A4	None known	2D6, 2E1
Other	Bupropion	2B6, 1A2, 2A6, 2C9, 2D6, 2E1, 3A4	None known	2D6
	Mirtazapine	1A2, 2D6, 3A4, 2C9	None known	1A2, 3A4
	Nefazodone	2D6, 3A4	P-glycoprotein	3A4, 1A2, 2B6, 2C8, 2D6
	Trazodone	3A4, 2D6	P-glycoprotein	3A4
	Vilazodone	3A4, 2C19, 2D6	2C19	2C8, 2D6
	Vortioxetine	2D6, 3A4, 2A6, 2B6, 2C8, 2C9, 2C19	None known	None known

Medications used in bipolar disorder

	Medication	Metabolized by or Substrate of	Induces	Inhibits
mood stabilizer	Lithium	None known	None known	None known
Anticonvulsants	Carbamazepine	3A4, 2C8	1A2, 2B6, 2C8, 2C9, 2C19, 3A4, P-glycoprotein	None known
	Lamotrigine	None known	None known	None known
	Oxcarbazepine	None known	3A4	2C19 (dose dependent)
	Topiramate	None known	3A4	2C19
	Valproic acid/derivatives	2A6, 2B6, 2C19, 2C9, 2E1	2A6 (m)	2C9

Medications used in psychosis

	Medication	Metabolized by or Substrate of	Induces	Inhibits
Typical	Chlorpromazine	2D6, 1A2, 3A4	None known	2D6 (m), 2E1
	Fluphenazine	2D6	None known	1A2, 2C9, 2D6, 2E1
	Loxapine	1A2, 3A4, 2D6	None known	P-glycoprotein
	Haloperidol	2D6, 3A4, 1A2	None known	2D6 (m), 3A4 (m)
	Perphenazine	2D6, 1A2, 2C19, 2C9, 3A4	None known	1A2, 2D6
	Thiothixene	1A2	None known	2D6
	Trifluoperazine	1A2	None known	None known
Atypical	Aripiprazole	2D6, 3A4	None known	None known
	Asenapine	1A2, 2D6, 3A4	None known	2D6
	Clozapine	1A2, 2A6, 2C19, 2C9, 2D6, 3A4	None known	2D6 (m), 1A2, 2C9, 2C19, 2E1, 3A4
	Iloperidone	2D6, 3A4	None known	3A4 (m)
	Lurasidone	3A4	None known	3A4
	Olanzapine	1A2, 2D6	None known	1A2, 2C9, 2C19, 2D6, 3A4
	Quetiapine	3A4, 2D6	None known	None known
	Risperidone	2D6, 3A4, P-glycoprotein	None known	2D6, 3A4
Ziprasidone	1A2, 3A4	None known	2D6, 3A4	

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References:

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Medications used in anxiety and insomnia

	Medication	Metabolized by or Substrate of	Induces	Inhibits
BZD	Alprazolam	3A4	None known	None known
	Chlordiazepoxide	3A4	None known	None known
	Clonazepam	3A4	None known	None known
	Diazepam	2C19, 3A4, 1A2, 2B6, 2C9	None known	2C19, 3A4
	Lorazepam	None	None known	None known
Hypnotic	Eszopiclone	3A4, 2E1	None known	None known
	Zaleplon	3A4	None known	None known
	Zolpidem	3A4, 1A2, 2C19, 2C9, 2D6	None known	None known
Other	Buspirone	3A4, 2D6	None known	None known
	Gabapentin	None known	None known	None known
	Pregabalin	None known	None known	None known
	Gamma hydroxybutyrate	None known	None known	None known

Medications used in ADHD

	Medication	Metabolized by or Substrate of	Induces	Inhibits
Stimulant	Amphetamine	2D6	None known	2D6
	Dextroamphetamine	2D6	None known	None known
	Lisdexamfetamine	None	None known	None known
	Methylphenidate	2D6	None known	None known
Other	Armodafinil	3A4	3A4	2C19 (m)
	Atomoxetine	2D6, 2C19	None known	None known
	Clonidine	None known	None known	None known
	Guanfacine	3A4	None known	None known
	Modafinil	3A4	1A2, 2B6, 3A4	2C19, 1A2, 2A6, 2C9, 2E1, 3A4

Medications used in Detoxification

	Medication	Metabolized by or Substrate of	Induces	Inhibits
Opioids	Buprenorphine	3A4	None known	1A2, 2A6, 2C19, 2D6
	Fentanyl	3A4	None known	3A4
	Hydrocodone	2D6, 3A4	None known	None known
	Hydromorphone	None known	None known	None known
	Methadone	2B6, 3A4, 2C9, 2C19	None known	2D6 (m), 3A4
	Morphine	2D6, P-glycoprotein	None known	None known
	Oxycodone	3A4, 2D6	None known	None known
	Oxymorphone	None known	None known	None known
	Tapentadol	2C9, 2D6	None known	None known
Other	Tramadol	2D6, 3A4, 2B6	None known	None known
	Caffeine	1A2, 2C9, 2D6, 2E1, 3A4	None known	1A2
	Dronabinol	2C9, 3A4	None known	None known
	Nicotine	2A6, 1A2, 2B6, 2C9, 2C19, 2D6, 2E1, 3A4	2A1, 2A2, 2B1, 2B2, 2E1	2A6, 2E1
	Phenobarbital	2C19, 2C9, 2E1	1A2, 2A6, 2B6, 2C8, 2C9, P-glycoprotein	None known
Tobacco	2E1	1A1, 1A2, UDP-glucuronosyltransferase, 2E1	None known	

Medications used for EPS

	Medication	Metabolized by or Substrate of	Induces	Inhibits
	Benzotropine	3A4, 1A2, 2C19, 2C9, 2D6	None known	None known
	Bromocriptine	3A4	None known	1A2, 3A4
	Diphenhydramine	2D6, 1A2, 2C9, 2C19	None known	2D6 (m)
	Hydroxyzine	None known	None known	2D6
	Propranolol	1A2, 2D6, 2C19, 3A4	None known	1A2, 2D6, P-glycoprotein
	Trihexyphenidyl	None known	None known	None known

References: