

Pharmacogenetic Recommendations From the FDA				
	Medication	Gene	Risk	Action
Testing Required	Carbamazepine (and possibly oxcarbazepine)	HLA-B*1502	Stevens-Johnson syndrome (SJS)	In patients of Asian descent, test is required before starting carbamazepine and recommended (but not required) before oxcarbazepine; a positive result in this population means they are 80 times more likely to develop SJS on carbamazepine and 30 times more likely on oxcarbazepine
	Pimozide	2D6	Arrhythmias	Test is required before dosing pimozide above 4 mg/day (or 0.05 mg/kg/day in children) because of risk of arrhythmias; in poor metabolizers, wait 14 days between dose adjustments
Testing Recommended ¹	Thioridazine	2D6	Arrhythmias	Contraindicated in poor metabolizers
	Citalopram	2C19	Arrhythmias	Max dose of 20 mg/day in poor metabolizers
	Deutetrabenazine	2D6	Arrhythmias	Max dose 18 mg BID in poor metabolizers (must be divided BID)
	Valbenazine	2D6	Arrhythmias	Lower the dose by 50% and divide it twice a day in poor metabolizers
Adjust Dose if Testing Results Are Known	Atomoxetine, clozapine, perphenazine, venlafaxine, vortioxetine, and various tricyclics (amitriptyline, clomipramine, desipramine, doxepin, imipramine, nortriptyline, protriptyline, trimipramine)	2D6	Various	Lower the dose by 50% in poor metabolizers; for clozapine and tricyclics, adjust based on serum levels; for venlafaxine, keep in mind that the active metabolite (desvenlafaxine) will be low in poor metabolizers and high in rapid metabolizers
	Aripiprazole, brexpiprazole, iloperidone	2D6, 3A4	Various	Lower the dose by 50% in poor metabolizers at either enzyme, or by 75% if both enzymes are poor
	Flibanserin	3A4	Syncope	Lower the dose in poor metabolizers

¹In these cases, the FDA does not require the test but does require dose adjustment if the test was done and an abnormality found (a slightly inconsistent recommendation). Sources: www.cpicpgx.org/genes-drugs; www.fda.gov/drugs/science-and-research-drugs/table-pharmacogenomic-biomarkers-drug-labeling

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 With **John Nurnberger, MD, PhD**
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