

PGx Recommendations by CYP2D6 Genotype

SSRI	Gene	Phenotype	Implication	Therapeutic Recommendation
Citalopram	CYP2C19	Ultra-rapid metabolizer	Increase probability of drug failure due to lower plasma levels	Select alternative drug not predominantly metabolized by CYP2C19
		Normal metabolizer	Normal metabolism	Initiate therapy with recommended starting dose
		Intermediate metabolizer	Reduced metabolism compared to normal metabolizers	Initiate therapy with recommended starting dose
		Poor metabolizer	Increase the probability of side effects due to higher plasma levels	Consider a 50% reduction of recommended starting dose or select alternative drug not predominantly metabolized by CYP2C19
Fluoxetine	N/A	N/A	The evidence surrounding pharmacogenomic factors in fluoxetine use is considered preliminary at this point	
Fluvoxamine	CYP2D6	Ultra-rapid metabolizer	No data available for fluvoxamine	No recommendation for fluvoxamine due to lack of evidence
		Normal metabolizer	Normal metabolism	Initiate therapy with recommended starting dose
		Intermediate metabolizer	Higher plasma concentrations may increase the probability of side effects	Initiate therapy with recommended starting dose
		Poor metabolizer	Increase the probability of side effects due to higher plasma levels	Select alternative drug not predominantly metabolized by CYP2D6, if use is warranted consider a 50% reduction of initial dose
Paroxetine	CYP2D6	Ultra-rapid metabolizer	Increase probability of drug failure due to lower plasma levels	Select alternative drug not predominantly metabolized by CYP2D6
		Normal metabolizer	Normal metabolism	Initiate therapy with recommended starting dose
		Intermediate metabolizer	Higher plasma concentrations may increase the probability of side effects	Initiate therapy with recommended starting dose
		Poor metabolizer	Increase the probability of side effects due to higher plasma levels	Select alternative drug not predominantly metabolized by CYP2D6, if use is warranted consider a 50% reduction of initial dose
Sertraline	CYP2C19	Ultra-rapid metabolizer	May lead to lower plasma levels but this data is not well established yet	Initiate therapy with recommended starting dose. If treatment fails, consider alternative drug not predominantly metabolized by CYP2C19
		Normal metabolizer	Normal metabolism	Initiate therapy with recommended starting dose
		Intermediate metabolizer	Reduced metabolism compared to normal metabolizers.	Initiate therapy with recommended starting dose
		Poor metabolizer	Increase the probability of side effects due to higher plasma levels	Consider a 50% reduction of recommended starting dose or select alternative drug not predominantly metabolized by CYP2C19
Escitalopram	CYP2C19	Ultra-rapid metabolizer	Increase probability of pharmacotherapy failure due to lower plasma levels	Select alternative drug not predominantly metabolized by CYP2C19
		Normal metabolizer	Normal metabolism	Initiate therapy with recommended starting dose
		Intermediate metabolizer	Reduced metabolism compared to normal metabolizers.	Initiate therapy with recommended starting dose
		Poor metabolizer	Increase the probability of side effects due to higher plasma levels	Consider a 50% reduction of recommended starting dose or select alternative drug not predominantly metabolized by CYP2C19

Pediatric SSRI PGx Cheat Sheet

SSRI Use in Pediatric/Adolescent Depression

Medication	FDA Approval in Pediatrics	Recommend by:		
		AAP	GLAD-PC	TCMAP
Citalopram		✓	✓ ⁺⁺	✓
Fluoxetine	✓	✓	✓ ⁺	✓
Fluvoxamine		✓		
Paroxetine		✓		
Sertraline		✓	✓ ⁺⁺	✓
Escitalopram	✓*	✓	✓ ⁺⁺	

*≥ 12 years old; + first line; ++ second line

AAP: American Academy of Pediatrics; GLAD-PC: Guidelines for Adolescent Depression in Primary Care; TCCP: Texas Children’s Medication Algorithm Project

AFP Questions to Guide Initiation of Pharmacotherapy

Is the depression of moderate to severe severity?
Has there been a prior episode of depression?
Has the patient been treated for depression with medication in the past?
Is there a family history of depression?
Is there a family history of depression with significant response to medication?
Have environmental stressors been modified with no associated improvements in mood?
Has evidence-based psychotherapy (i.e., cognitive behavior therapy, interpersonal therapy) been attempted without success?

General SSRI Information

Medication	Starting Dose, mg/d	Increments, mg	Effective Dose, mg	Maximum Dose
Citalopram	10	10	20	60
Fluoxetine	10	10-20	20	60
Fluvoxamine	50 ⁺	50	150	300
Paroxetine	10	10	20	60
Sertraline	25	12.5-25	50	200
Escitalopram	5	5	10	20

Per AAP Depression Guidelines and GLAD-PC

⁺GLAD-PC update suggests a starting dose of 25 mg

