Gene2Rx

Pharmacogenetics Report

Report Information

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Date of Report: June 22, 2025

Data Source: 23andMe

Report Version: v2.0

About This Report

This report contains pharmacogenetic alleles and implications for drug response for the genetic data submitted. Both the genotypes presented and implicated medications are predictions based on the submitted data and published pharmacogenetics literature. This is not a clinical report and the data contained here in no way should be used as clinical guidance.

The information presented in this report is based on allele mappings and therapeutic implications developed by the Clinical Pharmacogenomics Implementation Consortium (CPIC®) and the US Food and Drug administration (FDA). Gene2Rx is not affiliated with CPIC or the FDA in any way. The contents of this page have not been endorsed by CPIC or the FDA and are the sole responsibility of Gene2Rx.

This report includes information about how your pharmacogenetics may influence your response to all medications with FDA and CPIC guidance. If you do not see your medication listed here, there is currently no prescription guidance based on pharmacogenetics published by either the FDA or CPIC.

The implications of taking medication for which you may have an atypical response are based on probabilities. You may or may not experience any side effects or altered efficaciousness. Consult your healthcare provider before making any changes to your healthcare.

The quality of uploaded data is not verified and may contain errors that result in alterations to your pharmacogenetic report. Genotyping panels (such as those used by direct to consumer genetics services) offer an incomplete representation of an individual's genetics. You may harbor additional genetic variation that can affect drug response.

⚠ **Disclaimer:** Do not alter your medication dose or stop your medication without first consulting your healthcare provider.

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Pharmacogenetics Summary

This table contains the specific variants identified in each of the genes assessed for your Gene2Rx report. These genes are important for modulating response to medications and have been determined to be clinically actionable for some medications.

	GENE	GENOTYPE	PHENOTYPE
✓	ABCG2	rs2231142G/rs2231142G	Normal Function
✓	ADH1B	rs1229984C/rs1229984C	Normal Function
↓	AKT1	rs2494732C/rs2494732T	Decreased Function
✓	ALDH2	rs671G/rs671G	Normal Function
✓	BCHE	Reference/Reference	Normal Metabolizer
↑	CHRNA5	rs16969968A/rs16969968A	Increased Risk
↓	COMT	rs4680A/rs4680G	Intermediate Function
↑	CYP1A2	*1/*30	Rapid Metabolizer
✓	CYP2A6	*1/*1	Normal Metabolizer
✓	CYP2B6	*1/*1	Normal Metabolizer
↓	CYP2C19	*1/*2	Intermediate Metabolizer
↓	CYP2C9	*1/*2	Intermediate Metabolizer
✕	CYP2D6	*4/*4	Poor Metabolizer
↓	CYP3A5	*1/*3	Intermediate Metabolizer
↓	CYP4F2	*1/*3	Intermediate Metabolizer
✓	DPYD	Reference/Reference	Normal Metabolizer
✓	FAAH	rs324420C/rs324420C	Normal Function
✓	IFNL3	rs12979860C/rs12979860C	Favorable Response Genotype
✓	NUDT15	*1/*1	Normal Metabolizer
↓	SLCO1B1	*17/*1A	Decreased Function
✓	TPMT	*1/*1	Normal Function
↓	UGT1A1	*1/*28+*60+*80	Intermediate Metabolizer
↓	VKORC1	-1639A/-1639G	Decreased Expression

Legend

Symbols in the Gene Summary table represent the predicted function of the gene. A non-normal allele does not necessarily lead to a change in drug response.

- ✓ Normal function
- ↓ Decreased function
- ↑ Increased function
- ✕ Severely decreased or no function
- ? Unknown function

Drugs with Potential Atypical Response

Based on your genetics, you may have an atypical response to medications listed in this section.

Therapeutic Guidance Legend

- Normal therapeutic guidance
- Alternate dosing recommended
- Alternate drug recommended

Antiarrhythmics

	GENERIC NAME	BRAND NAMES	GENE	YOUR GENE PHENOTYPE	IMPLICATION	SOURCE
⚠	Propafenone	Rythmol SR	CYP2D6	✕ Poor Metabolizer	Results in higher systemic concentrations and higher adverse reaction risk (arrhythmia). Avoid use in poor metabolizers taking a CYP3A4 inhibitor.	FDA

Anticonvulsants

	GENERIC NAME	BRAND NAMES	GENE	YOUR GENE PHENOTYPE	IMPLICATION	SOURCE
⚠	Brivaracetam	Briviact	CYP2C19	↓ Intermediate Metabolizer	Results in higher systemic concentrations and higher adverse reaction risk.	FDA
⚠	Clobazam	Onfi, Frisium	CYP2C19	↓ Intermediate Metabolizer	Results in higher systemic active metabolite concentrations. Poor metabolism results in higher adverse reaction risk. Dosage adjustment is recommended. Refer to FDA labeling for specific dosing recommendations.	FDA
⚠	Fosphenytoin	Cerebyx	CYP2C9	↓ Intermediate Metabolizer	**CPIC**: *Implication:* Slightly reduced fosphenytoin metabolism; however, this does not appear to translate into increased side effects. *Therapeutic recommendation:* No adjustments needed from typical dosing strategies. Subsequent doses should be adjusted according to therapeutic drug monitoring, response, and side effects. An HLA-B*15:02 negative test does not eliminate the risk of phenytoin-induced SJS/TEN, and patients should be carefully monitored according to standard practice. **FDA**: May result in higher systemic concentrations and higher adverse reaction risk (central nervous system toxicity). Consider starting at the lower end of the dosage range and monitor serum concentrations. Refer to FDA labeling for specific dosing recommendations. Carriers of CYP2C9*3 alleles may be at increased risk of severe cutaneous adverse reactions. Consider avoiding fosphenytoin as an alternative to carbamazepine in patients who are CYP2C9*3 carriers. Genotyping is not a substitute for clinical vigilance and patient management.	CPIC, FDA
⚠	Phenytoin	Dilantin	CYP2C9	↓ Intermediate Metabolizer	**CPIC**: *Implication:* Slightly reduced phenytoin metabolism; however, this does not appear to translate into increased side effects. *Therapeutic recommendation:* No adjustments needed from typical dosing strategies. Subsequent doses should be adjusted according to therapeutic drug monitoring, response, and side effects. An HLA-B*15:02 negative test does not eliminate the risk of phenytoin-induced SJS/TEN, and patients should be carefully monitored according to standard practice. **FDA**: May result in higher systemic concentrations and higher adverse reaction risk (central nervous system toxicity). Refer to FDA labeling for specific dosing recommendations. Carriers of CYP2C9*3 alleles may be at increased risk of severe cutaneous adverse reactions. Consider avoiding phenytoin as an alternative to carbamazepine in patients who are CYP2C9*3 carriers. Genotyping is not a substitute for clinical vigilance and patient management.	CPIC, FDA

Antidepressants - SNRI

	GENERIC NAME	BRAND NAMES	GENE	YOUR GENE PHENOTYPE	IMPLICATION	SOURCE
⚠	Venlafaxine	Effexor XR	CYP2D6	✕ Poor Metabolizer	**CPIC**: *Implication:* Decreased metabolism of venlafaxine to the active metabolite O-desmethylvenlafaxine and greatly decreased O-desmethylvenlafaxine:venlafaxine ratio compared with normal and intermediate metabolizers. Although the clinical impact is unclear, poor metabolizer status has been associated with adverse effects. *Therapeutic recommendation:* Consider a clinically appropriate alternative antidepressant not predominantly metabolized by CYP2D6. **FDA**: Alters systemic parent drug and metabolite concentrations. Consider dosage reductions.	CPIC, FDA

Antidepressants - SSRI

	GENERIC NAME	BRAND NAMES	GENE	YOUR GENE PHENOTYPE	IMPLICATION	SOURCE
⚠	Citalopram	Celexa, Cipralex, Lexapro	CYP2C19	↓ Intermediate Metabolizer	**CPIC**: *Implication:* Reduced metabolism when compared with CYP2C19 normal metabolizers. Higher plasma concentrations may increase the probability of side effects. *Therapeutic recommendation:* Initiate therapy with recommended starting dose. Consider a slower titration schedule and lower maintenance dose than normal metabolizers. **FDA**: No FDA guidance for your genotype	CPIC, FDA
⚠	Escitalopram	Lexapro	CYP2C19	↓ Intermediate Metabolizer	*Implication:* Reduced metabolism when compared with CYP2C19 normal metabolizers. Higher plasma concentrations may increase the probability of side effects. *Therapeutic recommendation:* Initiate therapy with recommended starting dose. Consider a slower titration schedule and lower maintenance dose than normal metabolizers.	CPIC
⚠	Fluvoxamine	Luvox	CYP2D6	✕ Poor Metabolizer	*Implication:* Greatly reduced metabolism of fluvoxamine to less active compounds compared with normal metabolizers. Higher plasma concentrations may increase the probability of side effects. *Therapeutic recommendation:* Consider a 25–50% lower starting dose and slower titration schedule as compared with normal metabolizers or consider a clinically appropriate alternative antidepressant not predominantly metabolized by CYP2D6.	CPIC
⚠	Paroxetine	Paxil, Seroxat	CYP2D6	✕ Poor Metabolizer	*Implication:* Greatly reduced metabolism compared with CYP2D6 normal metabolizers. Higher plasma concentrations may increase the probability of side effects. *Therapeutic recommendation:* Consider a 50% reduction in recommended starting dose, slower titration schedule, and a 50% lower maintenance dose as compared with normal metabolizers.	CPIC
⚠	Vortioxetine	Trintellix, Brintellix	CYP2D6	✕ Poor Metabolizer	**CPIC**: *Implication:* Greatly reduced metabolism of vortioxetine to inactive compounds compared with normal metabolizers. Higher plasma concentrations may increase the probability of side effects. *Therapeutic recommendation:* Initiate 50% of starting dose (e.g., 5 mg) and titrate to the maximum recommended dose of 10 mg or consider a clinically appropriate alternative antidepressant not predominantly metabolized by CYP2D6. **FDA**: Results in higher systemic concentrations. The maximum recommended dose is 10 mg.	CPIC, FDA

Antidepressants - TCA

	GENERIC NAME	BRAND NAMES	GENE	YOUR GENE PHENOTYPE	IMPLICATION	SOURCE
⚠	Amitriptyline	Elavil	CYP2C19	↓ Intermediate Metabolizer	*Implication:* Reduced metabolism of tertiary amines compared to normal metabolizers. *Therapeutic recommendation:* Initiate therapy with recommended starting dose.	CPIC

	GENERIC NAME	BRAND NAMES	GENE	YOUR GENE PHENOTYPE	IMPLICATION	SOURCE
			CYP2D6	Poor Metabolizer	*Implication:* Greatly reduced metabolism of TCAs to less active compounds compared to normal metabolizers. Higher plasma concentrations of active drug will increase the probability of side effects. *Therapeutic recommendation:* Avoid tricyclic use due to potential for side effects. Consider alternative drug not metabolized by CYP2D6. If a TCA is warranted, consider 50% reduction of recommended starting dose.g Utilize therapeutic drug monitoring to guide dose adjustments.	CPIC
⚠	Clomipramine	Anafranil	CYP2C19	Intermediate Metabolizer	*Implication:* Reduced metabolism of tertiary amines compared to normal metabolizers. *Therapeutic recommendation:* Initiate therapy with recommended starting dose.	CPIC
			CYP2D6	Poor Metabolizer	*Implication:* Greatly reduced metabolism of TCAs to less active compounds compared to normal metabolizers. Higher plasma concentrations of active drug will increase the probability of side effects. *Therapeutic recommendation:* Avoid tricyclic use due to potential for side effects. Consider alternative drug not metabolized by CYP2D6. If a TCA is warranted, consider 50% reduction of recommended starting dose.g Utilize therapeutic drug monitoring to guide dose adjustments.	CPIC
⚠	Desipramine	Norpramin	CYP2D6	Poor Metabolizer	*Implication:* Greatly reduced metabolism of TCAs to less active compounds compared to normal metabolizers. Higher plasma concentrations of active drug will increase the probability of side effects. *Therapeutic recommendation:* Avoid tricyclic use due to potential for side effects. Consider alternative drug not metabolized by CYP2D6. If a TCA is warranted, consider 50% reduction of recommended starting dose.g Utilize therapeutic drug monitoring to guide dose adjustments.	CPIC
⚠	Doxepin	Sinequan, Quitaxon, Aponal	CYP2C19	Intermediate Metabolizer	*Implication:* Reduced metabolism of tertiary amines compared to normal metabolizers. *Therapeutic recommendation:* Initiate therapy with recommended starting dose.	CPIC
			CYP2D6	Poor Metabolizer	*Implication:* Greatly reduced metabolism of TCAs to less active compounds compared to normal metabolizers. Higher plasma concentrations of active drug will increase the probability of side effects. *Therapeutic recommendation:* Avoid tricyclic use due to potential for side effects. Consider alternative drug not metabolized by CYP2D6. If a TCA is warranted, consider 50% reduction of recommended starting dose.g Utilize therapeutic drug monitoring to guide dose adjustments.	CPIC
⚠	Imipramine	Tofranil	CYP2C19	Intermediate Metabolizer	*Implication:* Reduced metabolism of tertiary amines compared to normal metabolizers. *Therapeutic recommendation:* Initiate therapy with recommended starting dose.	CPIC
			CYP2D6	Poor Metabolizer	*Implication:* Greatly reduced metabolism of TCAs to less active compounds compared to normal metabolizers. Higher plasma concentrations of active drug will increase the probability of side effects. *Therapeutic recommendation:* Avoid tricyclic use due to potential for side effects. Consider alternative drug not metabolized by CYP2D6. If a TCA is warranted, consider 50% reduction of recommended starting dose.g Utilize therapeutic drug monitoring to guide dose adjustments.	CPIC
⚠	Nortriptyline	Pamelor	CYP2D6	Poor Metabolizer	*Implication:* Greatly reduced metabolism of TCAs to less active compounds compared to normal metabolizers. Higher plasma concentrations of active drug will increase the probability of side effects. *Therapeutic recommendation:* Avoid tricyclic use due to potential for side effects. Consider alternative drug not metabolized by CYP2D6. If a TCA is warranted, consider 50% reduction of recommended starting dose.g Utilize therapeutic drug monitoring to guide dose adjustments.	CPIC
⚠	Trimipramine	Surmontil	CYP2C19	Intermediate Metabolizer	*Implication:* Reduced metabolism of tertiary amines compared to normal metabolizers. *Therapeutic recommendation:* Initiate therapy with recommended starting dose.	CPIC

GENERIC NAME	BRAND NAMES	GENE	YOUR GENE PHENOTYPE	IMPLICATION	SOURCE
		CYP2D6	Poor Metabolizer	*Implication:* Greatly reduced metabolism of TCAs to less active compounds compared to normal metabolizers. Higher plasma concentrations of active drug will increase the probability of side effects. *Therapeutic recommendation:* Avoid tricyclic use due to potential for side effects. Consider alternative drug not metabolized by CYP2D6. If a TCA is warranted, consider 50% reduction of recommended starting dose.g Utilize therapeutic drug monitoring to guide dose adjustments.	CPIC

Antiemetics

	GENERIC NAME	BRAND NAMES	GENE	YOUR GENE PHENOTYPE	IMPLICATION	SOURCE
⚠	Dronabinol	Syndros	CYP2C9	Intermediate Metabolizer	May result in higher systemic concentrations and higher adverse reaction risk. Monitor for adverse reactions.	FDA
⚠	Metoclopramide	Reglan	CYP2D6	Poor Metabolizer	Results in higher systemic concentrations and higher adverse reaction risk. The recommended dosage is lower. Refer to FDA labeling for specific dosing recommendations.	FDA

Antifungal

	GENERIC NAME	BRAND NAMES	GENE	YOUR GENE PHENOTYPE	IMPLICATION	SOURCE
⚠	Voriconazole	Vorizyme	CYP2C19	Intermediate Metabolizer	**CPIC**: *Implication:* Higher dose-adjusted trough concentrations of voriconazole compared to normal metabolizers. *Therapeutic recommendation:* Initiate therapy with recommended standard of care dosing. **FDA**: Results in higher systemic concentrations and may result in higher adverse reaction risk.	CPIC, FDA

Antihistimines

	GENERIC NAME	BRAND NAMES	GENE	YOUR GENE PHENOTYPE	IMPLICATION	SOURCE
⚠	Meclizine	Antivert	CYP2D6	Poor Metabolizer	May affect systemic concentrations. Monitor for adverse reactions and clinical effect.	FDA

Antipsychotics

	GENERIC NAME	BRAND NAMES	GENE	YOUR GENE PHENOTYPE	IMPLICATION	SOURCE
⚠	Aripiprazole Lauroxil	Aristada	CYP2D6	✕ Poor Metabolizer	Results in higher systemic concentrations. Dosage adjustment is recommended. Refer to FDA labeling for specific dosing recommendations.	FDA
⚠	Aripiprazole	Abilify	CYP2D6	✕ Poor Metabolizer	Results in higher systemic concentrations and higher adverse reaction risk. Dosage adjustment is recommended. Refer to FDA labeling for specific dosing recommendations.	FDA
⚠	Brexpiprazole	Rexulti	CYP2D6	✕ Poor Metabolizer	Results in higher systemic concentrations. Dosage adjustment is recommended. Refer to FDA labeling for specific dosing recommendations.	FDA
⚠	Clozapine	Clozaril	CYP2D6	✕ Poor Metabolizer	Results in higher systemic concentrations. Dosage reductions may be necessary.	FDA
⚠	Iloperidone	Fanapt	CYP2D6	✕ Poor Metabolizer	Results in higher systemic concentrations and higher adverse reaction risk (QT prolongation). Reduce dosage by 50%.	FDA
⚠	Perphenazine	Trilafon	CYP2D6	✕ Poor Metabolizer	Results in higher systemic concentrations and higher adverse reaction risk.	FDA
⚠	Pimozide	Orap	CYP2D6	✕ Poor Metabolizer	Results in higher systemic concentrations. Dosages should not exceed 0.05 mg/kg in children or 4 mg/day in adults who are poor metabolizers and dosages should not be increased earlier than 14 days.	FDA

Beta Blockers

	GENERIC NAME	BRAND NAMES	GENE	YOUR GENE PHENOTYPE	IMPLICATION	SOURCE
⚠	Carvedilol	Coreg, Coreg CR	CYP2D6	✕ Poor Metabolizer	Results in higher systemic concentrations and higher adverse reaction risk (dizziness).	FDA

Blood Thinners

	GENERIC NAME	BRAND NAMES	GENE	YOUR GENE PHENOTYPE	IMPLICATION	SOURCE
!	Clopidogrel	Plavix	CYP2C19	↓ Intermediate Metabolizer	**CPIC**: *Implication:* Reduced clopidogrel active metabolite formation; increased on-treatment platelet reactivity; increased risk for adverse cardiac and cerebrovascular events *Therapeutic recommendation:* Avoid standard dose (75 mg) clopidogrel if possible. Use prasugrel or ticagrelor at standard dose if no contraindication **FDA**: Results in lower systemic active metabolite concentrations, lower antiplatelet response, and may result in higher cardiovascular risk. Consider use of another platelet P2Y12 inhibitor.	CPIC, FDA
⚠	Warfarin	Coumadin	CYP2C9	↓ Intermediate Metabolizer	**CPIC**: *Implication:* Decreased warfarin metabolism compared to normal metabolizers *Therapeutic recommendation:* Follow pharmacogenomic dosing guidelines for optimal starting dose **FDA**: Alters systemic concentrations and dosage requirements. Select initial dosage, taking into account clinical and genetic factors. Monitor and adjust dosages based on INR.	CPIC, FDA
			CYP4F2	↓ Intermediate Metabolizer	**CPIC**: *Implication:* Decreased vitamin K metabolism *Therapeutic recommendation:* Follow pharmacogenomic dosing guidelines for optimal starting dose **FDA**: May affect dosage requirements. Monitor and adjust doses based on INR.	CPIC, FDA
			VKORC1	↓ Decreased expression	**CPIC**: *Implication:* Increased warfarin sensitivity *Therapeutic recommendation:* Follow pharmacogenomic dosing guidelines for optimal starting dose **FDA**: Alters dosage requirements. Select initial dosage, taking into account clinical and genetic factors. Monitor and adjust dosages based on INR.	CPIC, FDA

Cardiomyopathy

	GENERIC NAME	BRAND NAMES	GENE	YOUR GENE PHENOTYPE	IMPLICATION	SOURCE
⚠	Mavacamten	Camzyos	CYP2C19	Intermediate Metabolizer	Results in higher systemic concentrations and may have higher adverse reaction risk (heart failure). Dosage is based on individual response. The dose titration and monitoring schedule accounts for differences due to CYP2C19 genetic variation, so adjustments based on CYP2C19 genotype are not necessary. Refer to FDA labeling for specific dosing recommendations and monitoring.	FDA

Chemotherapies

	GENERIC NAME	BRAND NAMES	GENE	YOUR GENE PHENOTYPE	IMPLICATION	SOURCE
⚠	Gefitinib	Iressa	CYP2D6	Poor Metabolizer	Results in higher systemic concentrations and higher adverse reaction risk. Monitor for adverse reactions.	FDA

Cholesterol Medications

	GENERIC NAME	BRAND NAMES	GENE	YOUR GENE PHENOTYPE	IMPLICATION	SOURCE
⚠	Atorvastatin	Lipitor	SLCO1B1	Decreased Function	*Implication:* Increased atorvastatin exposure as compared with normal function, which may translate to increased myopathy risk. *Therapeutic recommendation:* Prescribe ≤40 mg as a starting dose and adjust doses of atorvastatin based on disease-specific guidelines. Prescriber should be aware of possible increased risk for myopathy especially for the 40-mg dose. If dose >40 mg is needed for desired efficacy, consider combination therapy (i.e., atorvastatin plus nonstatin guideline-directed medical therapy).	CPIC
⚠	Fluvastatin	Lescol	CYP2C9	Intermediate Metabolizer	*Implication:* Increased fluvastatin exposure compared with normal metabolizer, which may increase myopathy risk. *Therapeutic recommendation:* Prescribe ≤40 mg per day as a starting dose and adjust doses of fluvastatin based on disease-specific guidelines. If dose >40 mg is needed for desired efficacy, consider an alternative statin or combination therapy (i.e., fluvastatin plus nonstatin guideline-directed medical therapy).	CPIC
			SLCO1B1	Decreased Function	*Implication:* Increased fluvastatin exposure as compared with normal function; typical myopathy risk with doses ≤40 mg *Therapeutic recommendation:* Prescribe desired starting dose and adjust doses of fluvastatin based on disease-specific guidelines. Prescriber should be aware of possible increased risk for myopathy especially for doses >40 mg per day.	CPIC
!	Lovastatin	Mevacor	SLCO1B1	Decreased Function	*Implication:* Increased lovastatin acid exposure as compared with normal function, which may translate to increased myopathy risk *Therapeutic recommendation:* Consider prescribing a lower-risk alternative such as atorvastatin (10–20 mg), pravastatin (40 mg), or rosuvastatin (5–10 mg). If lovastatin is warranted, limit the dose to ≤20 mg/day to reduce the risk of muscle-related side effects.	CPIC
⚠	Pitavastatin	Livalo	SLCO1B1	Decreased Function	*Implication:* Increased pitavastatin exposure as compared with normal function, which may translate to increased myopathy risk *Therapeutic recommendation:* Prescribe ≤2 mg as a starting dose and adjust doses of pitavastatin based on disease-specific guidelines. Be aware of possible increased risk for muscle-related side effects, especially for doses >1 mg. If dose >2 mg is needed for desired efficacy, consider switching to a lower-risk alternative such as atorvastatin (10–20 mg), pravastatin (40 mg), or rosuvastatin (5–10 mg), or using combination therapy (e.g., pitavastatin plus nonstatin guideline-directed medical therapy).	CPIC
⚠	Pravastatin	Pravachol	SLCO1B1	Decreased Function	*Implication:* Increased pravastatin exposure compared with normal function; typical myopathy risk with doses ≤40 mg *Therapeutic recommendation:* Prescribe desired starting dose and adjust doses of pravastatin based on disease-specific guidelines. Prescriber should be aware of possible increased risk for myopathy especially with doses >40 mg per day.	CPIC
⚠	Simvastatin	Zocor	SLCO1B1	Decreased Function	**CPIC**: *Implication:* Increased simvastatin acid exposure compared with normal function; increased risk of muscle side effects (myopathy) *Therapeutic recommendation:* Prescribe an alternative statin depending on desired potency. Low-risk options: atorvastatin 10–20 mg, pitavastatin 1 mg, pravastatin 40 mg, rosuvastatin 5–10 mg. Moderate-risk options: fluvastatin 80 mg, pitavastatin 2 mg, pravastatin 80 mg. High-risk options (use with caution): lovastatin 40–80 mg, pitavastatin 4 mg, simvastatin 20–40 mg. If simvastatin is used, limit dose to <20 mg/day. **FDA**: Results in higher systemic concentrations and higher adverse reaction risk (myopathy). The risk of adverse reaction (myopathy) is higher for patients on 80 mg than for those on lower doses.	CPIC, FDA

Drugs Used In Addictive Disorders

	GENERIC NAME	BRAND NAMES	GENE	YOUR GENE PHENOTYPE	IMPLICATION	SOURCE
⚠	Lofexidine	Lucemyra	CYP2D6	✕ Poor Metabolizer	Results in higher systemic concentrations and higher adverse reaction risk. Monitor for orthostatic hypotension and bradycardia.	FDA

Estrogen Modulators

	GENERIC NAME	BRAND NAMES	GENE	YOUR GENE PHENOTYPE	IMPLICATION	SOURCE
⚠	Tamoxifen	Nolvadex, Soltamox	CYP2D6	✕ Poor Metabolizer	*Implication:* Lower endoxifen concentrations compared to normal metabolizers; higher risk of breast cancer recurrence, event-free and recurrence-free survival compared to normal metabolizers. *Therapeutic recommendation:* Recommend alternative hormonal therapy such as an aromatase inhibitor for postmenopausal women or aromatase inhibitor along with ovarian function suppression in premenopausal women given that these approaches are superior to tamoxifen regardless of CYP2D6 genotype and based on knowledge that CYP2D6 poor metabolizers switched from tamoxifen to anastrozole do not have an increased risk of recurrence. Note, higher dose tamoxifen (40 mg/day) increases but does not normalize endoxifen concentrations and can be considered if there are contraindications to aromatase inhibitor therapy.	CPIC

Gaucher's Disease Treatments

	GENERIC NAME	BRAND NAMES	GENE	YOUR GENE PHENOTYPE	IMPLICATION	SOURCE
⚠	Eliglustat	Cerdelga	CYP2D6	✕ Poor Metabolizer	Alters systemic concentrations, effectiveness, and adverse reaction risk (QT prolongation). Coadministration with strong CYP3A inhibitors is contraindicated in intermediate and poor CYP2D6 metabolizers. Refer to FDA labeling for specific dosing recommendations.	FDA

Immunosuppressants

	GENERIC NAME	BRAND NAMES	GENE	YOUR GENE PHENOTYPE	IMPLICATION	SOURCE
⚠	Siponimod	Mayzent	CYP2C9	↓ Intermediate Metabolizer	Results in higher systemic concentrations. Adjust dosage based on genotype. Refer to FDA labeling for specific dosing recommendations.	FDA
⚠	Tacrolimus	Prograf	CYP3A5	↓ Intermediate Metabolizer	**CPIC**: *Implication:* Lower dose-adjusted trough concentrations of tacrolimus and decreased chance of achieving target tacrolimus concentrations *Therapeutic recommendation:* Increase starting dose 1.5 to 2 times recommended starting dose. Total starting dose should not exceed 0.3mg/kg/day. Use therapeutic drug monitoring to guide dose adjustments **FDA**: Results in higher systemic concentrations. Adjust dosage based on genotype. Refer to FDA labeling for specific dosing recommendations.	CPIC, FDA

Involuntary Movement Reducers

	GENERIC NAME	BRAND NAMES	GENE	YOUR GENE PHENOTYPE	IMPLICATION	SOURCE
⚠	Deutetrabenazine	Austedo	CYP2D6	Poor Metabolizer	Results in higher systemic concentrations and adverse reaction risk (QT prolongation). The maximum recommended dosage should not exceed 36 mg (maximum single dose of 18 mg).	FDA
⚠	Tetrabenazine	Xenazine	CYP2D6	Poor Metabolizer	Results in higher systemic concentrations. The maximum recommended single dose is 25 mg and should not exceed 50 mg/day.	FDA
⚠	Valbenazine	Ingrezza	CYP2D6	Poor Metabolizer	Results in higher systemic active metabolite concentrations and higher adverse reaction risk (QT prolongation). Dosage reductions may be necessary.	FDA

Pain Management

	GENERIC NAME	BRAND NAMES	GENE	YOUR GENE PHENOTYPE	IMPLICATION	SOURCE
⚠	Codeine	Tylenol 3	CYP2D6	Poor Metabolizer	**CPIC**: *Implication:* Greatly reduced morphine formation leading to diminished analgesia. *Therapeutic recommendation:* Avoid codeine use because of possibility of diminished analgesia. If opioid use is warranted, consider a non-tramadol opioid. **FDA**: Results in lower systemic active metabolite concentrations and may result in reduced efficacy.	CPIC, FDA
⚠	Meloxicam	Mobic	CYP2C9	Intermediate Metabolizer	**CPIC**: *Implication:* Mildly reduced metabolism *Therapeutic recommendation:* Initiate therapy with recommended starting dose. In accordance with the meloxicam prescribing information, use the lowest effective dosage for the shortest duration consistent with individual patient treatment goals. **FDA**: No FDA guidance for this phenotype	CPIC, FDA
⚠	Oliceridine	Olinvyk	CYP2D6	Poor Metabolizer	Results in higher systemic concentrations and higher adverse reaction risk (respiratory depression and sedation). May require less frequent dosing.	FDA
⚠	Piroxicam	Feldene	CYP2C9	Intermediate Metabolizer	**CPIC**: *Implication:* Mildly reduced metabolism *Therapeutic recommendation:* Initiate therapy with recommended starting dose. In accordance with the prescribing information, use the lowest effective dosage for the shortest duration consistent with individual patient treatment goals. **FDA**: Results in higher systemic concentrations.	CPIC, FDA
⚠	Pitolisant	Wakix	CYP2D6	Poor Metabolizer	Results in higher systemic concentrations. Use lowest recommended starting dosage. Refer to FDA labeling for specific dosing recommendations.	FDA
⚠	Tramadol	Ultram, ConZip	CYP2D6	Poor Metabolizer	*Implication:* Greatly reduced O-desmethyltramadol (active metabolite) formation leading to diminished analgesia. *Therapeutic recommendation:* Avoid tramadol use because of possibility of diminished analgesia. If opioid use is warranted, consider a non-codeine opioid.	CPIC

Proton Pump Inhibitors

	GENERIC NAME	BRAND NAMES	GENE	YOUR GENE PHENOTYPE	IMPLICATION	SOURCE
⚠	Dexlansoprazole	Dexilant	CYP2C19	Intermediate Metabolizer	*Implication:* Increased plasma concentration of PPI compared with CYP2C19 normal metabolizers; increased chance of efficacy and potentially toxicity *Therapeutic recommendation:* Initiate standard starting daily dose. For chronic therapy (>12 weeks) and efficacy achieved, consider 50% reduction in daily dose and monitor for continued efficacy.	CPIC
⚠	Lansoprazole	Prevacid	CYP2C19	Intermediate Metabolizer	*Implication:* Increased plasma concentration of PPI compared with CYP2C19 normal metabolizers; increased chance of efficacy and potentially toxicity *Therapeutic recommendation:* Initiate standard starting daily dose. For chronic therapy (>12 weeks) and efficacy achieved, consider 50% reduction in daily dose and monitor for continued efficacy.	CPIC
⚠	Omeprazole	Prilosec, Losec	CYP2C19	Intermediate Metabolizer	*Implication:* Increased plasma concentration of PPI compared with CYP2C19 normal metabolizers; increased chance of efficacy and potentially toxicity *Therapeutic recommendation:* Initiate standard starting daily dose. For chronic therapy (>12 weeks) and efficacy achieved, consider 50% reduction in daily dose and monitor for continued efficacy.	CPIC
⚠	Pantoprazole	Protonix	CYP2C19	Intermediate Metabolizer	**CPIC**: *Implication:* Increased plasma concentration of PPI compared with CYP2C19 normal metabolizers; increased chance of efficacy and potentially toxicity *Therapeutic recommendation:* Initiate standard starting daily dose. For chronic therapy (>12 weeks) and efficacy achieved, consider 50% reduction in daily dose and monitor for continued efficacy. **FDA**: No FDA guidance for your genotype	CPIC, FDA

Psychostimulants

	GENERIC NAME	BRAND NAMES	GENE	YOUR GENE PHENOTYPE	IMPLICATION	SOURCE
⚠	Amphetamine	Adzenys ER	CYP2D6	Poor Metabolizer	May affect systemic concentrations and adverse reaction risk. Consider lower starting dosage or use alternative agent.	FDA
⚠	Atomoxetine	Strattera	CYP2D6	Poor Metabolizer	**CPIC**: *Implication:* Significantly decreased metabolism of atomoxetine may result in higher concentrations as compared to non- poor metabolizers. This may increase the occurrence of treatment-emergent side effects, but also a greater improvement of ADHD symptoms as compared with non- poor metabolizers in those who tolerate treatment. Poor metabolizer status is associated with lower final dose requirements as compared to non- poor metabolizers. *Therapeutic recommendation:* Initiate with a dose of 40 mg/day and if no clinical response and in the absence of adverse events after 2 weeks increase dose to 80 mg/day. If response is inadequate after 2 weeks consider obtaining a plasma concentration 2-4 h after dosing. If concentration is <200 ng/ml, consider a proportional dose increase to achieve a concentration to approach 400 ng/ml.e,f If unacceptable side effects are present at any time, consider a reduction in dose. **FDA**: Results in higher systemic concentrations and higher adverse reaction risk. Adjust titration interval and increase dosage if tolerated. Refer to FDA labeling for specific dosing recommendations.	CPIC, FDA

Saliva Production Stimulators

	GENERIC NAME	BRAND NAMES	GENE	YOUR GENE PHENOTYPE	IMPLICATION	SOURCE
⚠	Cevimeline	Evoxac	CYP2D6	Poor Metabolizer	May result in higher adverse reaction risk. Use with caution.	FDA

Urologicals

	GENERIC NAME	BRAND NAMES	GENE	YOUR GENE PHENOTYPE	IMPLICATION	SOURCE
⚠	Tolterodine	Detrol	CYP2D6	✕ Poor Metabolizer	Results in higher systemic concentrations and higher adverse reaction risk (QT prolongation).	FDA

Other Substances

	GENERIC NAME	BRAND NAMES	GENE	YOUR GENE PHENOTYPE	IMPLICATION	SOURCE
⚠	LSD	Acid	CYP2D6	Poor Metabolizer	*Implication:* Reduced CYP2D6-mediated clearance → ↑ LSD half-life & AUC; prolonged and intensified effects with higher anxiety/"bad trip" risk *Therapeutic recommendation:* Consider starting at 50% of standard LSD dose and titrate slowly with close psychological monitoring.	Gene2Rx
⚠	MDMA		COMT	Intermediate Function	*Implication:* Intermediate COMT activity yields average MDMA pharmacodynamics with expected cognitive and cardiovascular responses *Therapeutic recommendation:* Use standard MDMA dosing; monitor for any unexpected cognitive or cardiovascular effects	Gene2Rx
			CYP2D6	Poor Metabolizer	*Implication:* Severely reduced MDMA clearance causes 3 to 3.5-fold higher exposure and high risk of hyperthermia and neurotoxicity *Therapeutic recommendation:* Reduce dose to 25% of standard or consider avoiding MDMA; perform intensive monitoring of vital signs.	Gene2Rx
⚠	THC	Cannabis, Marijuana	AKT1	Decreased Function	*Implication:* Reduced AKT1 activity may increase dopamine response to THC, raising risk of psychotic-like symptoms and anxiety. *Therapeutic recommendation:* Some research suggests that carriers of this variant may have a moderately higher risk of psychotic-like effects from THC. However these findings are not conclusive. Consider starting at a lower dose and monitoring for psychotic-like effects or avoiding THC altogether.	Gene2Rx
			COMT	Intermediate Function	*Implication:* Moderate COMT activity yields average dopamine degradation and typical psychotropic response. *Therapeutic recommendation:* Typical response to THC expected based on your genotype.	Gene2Rx
			CYP2C9	Intermediate Metabolizer	*Implication:* Slightly reduced 11-hydroxylation leads to modestly higher THC concentrations and a minor prolongation of effect. *Therapeutic recommendation:* Initiate at standard doses but monitor for moderately increased sedation or psychotropic intensity.	Gene2Rx
			FAAH	Normal Function	*Implication:* Standard hydrolysis of endocannabinoids; baseline cannabinoid receptor activation and THC response are typical. *Therapeutic recommendation:* THC effects are expected to align with population norms.	Gene2Rx
⚠	Caffeine	Coffee, Tea	CYP1A2	Rapid Metabolizer	*Implication:* Faster than normal clearance; may consume more caffeine to maintain effect. *Therapeutic recommendation:* You clear caffeine faster than average, which may shorten its duration of action. You may need more frequent servings to maintain the desired effect. Space your servings to prevent withdrawal symptoms.	Gene2Rx
⚠	Nicotine	Cigarettes	CHRNA5	Increased Risk	*Implication:* Variant may enhance receptor sensitivity to nicotine, producing stronger reward signals and increasing craving intensity. Higher cigarettes-per-day, increased risk of dependence, delayed cessation. *Therapeutic recommendation:* Nicotine may elicit heightened reward and craving. Monitor consumption and consider limiting dose frequency.	Gene2Rx
			COMT	Intermediate Function	*Implication:* Moderately reduced COMT activity results in higher dopamine levels after nicotine, enhancing reward and reducing withdrawal severity. *Therapeutic recommendation:* You may experience stronger reward and milder withdrawal; monitor craving intensity.	Gene2Rx
			CYP2A6	Normal Metabolizer	*Implication:* Nicotine clearance rate is typical, yielding standard plasma concentrations and exposure duration. *Therapeutic recommendation:* Typical response to nicotine.	Gene2Rx

Drugs with Typical Response

Based on your genetics, you are likely to respond normally to medications listed in this section.

Anesthetics

GENERIC NAME	BRAND NAMES	GENE	YOUR GENE PHENOTYPE	IMPLICATION	SOURCE
Mivacurium	Mivacron	BCHE	Normal Metabolizer	Normal BCHE activity and expected metabolism of mivacurium.	FDA
Succinylcholine	Quelicin, Anectine	BCHE	Normal Metabolizer	Normal BCHE activity and expected metabolism of succinylcholine.	FDA

Antidepressants - SSRI

GENERIC NAME	BRAND NAMES	GENE	YOUR GENE PHENOTYPE	IMPLICATION	SOURCE
Sertraline	Zoloft	CYP2B6	Normal Metabolizer	*Implication:* Normal metabolism of sertraline to less active compounds. *Therapeutic recommendation:* Initiate therapy with recommended starting dose.	CPIC
		CYP2C19	Intermediate Metabolizer	*Implication:* Reduced metabolism of sertraline to less active compounds when compared with CYP2C19 normal metabolizers. *Therapeutic recommendation:* Initiate therapy with recommended starting dose. Consider a slower titration schedule and lower maintenance dose than CYP2C19 normal metabolizers.	CPIC

Antidiabetics

GENERIC NAME	BRAND NAMES	GENE	YOUR GENE PHENOTYPE	IMPLICATION	SOURCE
Nateglinide	Starlix	CYP2C9	Intermediate Metabolizer	No FDA guidance for this phenotype	FDA

Antiemetics

GENERIC NAME	BRAND NAMES	GENE	YOUR GENE PHENOTYPE	IMPLICATION	SOURCE
Ondansetron	Zofran	CYP2D6	Poor Metabolizer	*Implication:* Very limited data available for CYP2D6 poor metabolizers *Therapeutic recommendation:* Insufficient evidence demonstrating clinical impact based on CYP2D6 genotype. Initiate therapy with recommended starting dose.	CPIC
Tropisetron	Navoban	CYP2D6	Poor Metabolizer	*Implication:* Very limited data available for CYP2D6 poor metabolizers *Therapeutic recommendation:* Insufficient evidence demonstrating clinical impact based on CYP2D6 genotype. Initiate therapy with recommended starting dose.	CPIC

Antiretrovirals

	GENERIC NAME	BRAND NAMES	GENE	YOUR GENE PHENOTYPE	IMPLICATION	SOURCE
✓	Atazanavir	Reyataz, Evotaz, Others	UGT1A1	↓ Intermediate Metabolizer	*Implication:* Somewhat decreased UGT1A1 activity; low likelihood of bilirubin-related discontinuation of atazanavir. *Therapeutic recommendation:* There is no need to avoid prescribing of atazanavir based on UGT1A1 genetic test result. Inform the patient that some patients stop atazanavir because of jaundice (yellow eyes and skin), but that this patient's genotype makes this unlikely	CPIC
✓	Efavirenz	Sustiva	CYP2B6	✓ Normal Metabolizer	**CPIC**: *Implication:* Normal efavirenz metabolism *Therapeutic recommendation:* Initiate efavirenz with standard dosing (600 mg/day) **FDA**: No FDA guidance for your genotype	CPIC, FDA

Antivirals

	GENERIC NAME	BRAND NAMES	GENE	YOUR GENE PHENOTYPE	IMPLICATION	SOURCE
✓	Peginterferon Alfa-2A	Pegasys	IFNL3	✓ Favorable response genotype	*Implication:* Approximately 70% chance for sustained virologic response (SVR) after 48 weeks of treatment. Consider implications before initiating PEG-IFN alpha and RBV containing regimens. *Therapeutic recommendation:* Approximately 90% chance for SVR after 24-48 weeks of treatment. Approximately 80-90% of patients are eligible for shortened therapy (24-28 weeks vs. 48 weeks)d. Weighs in favor of using PEG-IFN alpha and RBV containing regimens.	CPIC
✓	Peginterferon Alfa-2B	PegIntron	IFNL3	✓ Favorable response genotype	*Implication:* Approximately 70% chance for sustained virologic response (SVR) after 48 weeks of treatment. Consider implications before initiating PEG-IFN alpha and RBV containing regimens. *Therapeutic recommendation:* Approximately 90% chance for SVR after 24-48 weeks of treatment. Approximately 80-90% of patients are eligible for shortened therapy (24-28 weeks vs. 48 weeks)d. Weighs in favor of using PEG-IFN alpha and RBV containing regimens.	CPIC
✓	Ribavirin	Copegus, Rebetol, Virazole	IFNL3	✓ Favorable response genotype	*Implication:* Approximately 70% chance for sustained virologic response (SVR) after 48 weeks of treatment. Consider implications before initiating PEG-IFN alpha and RBV containing regimens. *Therapeutic recommendation:* Approximately 90% chance for SVR after 24-48 weeks of treatment. Approximately 80-90% of patients are eligible for shortened therapy (24-28 weeks vs. 48 weeks)d. Weighs in favor of using PEG-IFN alpha and RBV containing regimens.	CPIC

Beta Blockers

	GENERIC NAME	BRAND NAMES	GENE	YOUR GENE PHENOTYPE	IMPLICATION	SOURCE
✓	Metoprolol	Lopressor, Toprol XL	CYP2D6	✗ Poor Metabolizer	*Implication:* None *Therapeutic recommendation:* None	CPIC

Chemotherapies

	GENERIC NAME	BRAND NAMES	GENE	YOUR GENE PHENOTYPE	IMPLICATION	SOURCE
✓	Belinostat	Beleodaq	UGT1A1	Intermediate Metabolizer	No FDA guidance for your genotype	FDA
✓	Belzutifan	Welireg	CYP2C19	Intermediate Metabolizer	No FDA guidance for this phenotype	FDA
✓	Capecitabine	Xeloda, Xitabin, Kapetral	DPYD	Normal Metabolizer	**CPIC**: *Implication:* Normal DPD activity and "normal" risk for fluoropyrimidine toxicity *Therapeutic recommendation:* Based on genotype, there is no indication to change dose or therapy. Use label-recommended dosage and administration **FDA**: No FDA guidance for your genotype	CPIC, FDA
✓	Erdafitinib	Balversa	CYP2C9	Intermediate Metabolizer	No FDA guidance for your genotype	FDA
✓	Fluorouracil	Adrucil, Carac	DPYD	Normal Metabolizer	**CPIC**: *Implication:* Normal DPD activity and "normal" risk for fluoropyrimidine toxicity *Therapeutic recommendation:* Based on genotype, there is no indication to change dose or therapy. Use label-recommended dosage and administration **FDA**: No FDA guidance for your genotype	CPIC, FDA
✓	Irinotecan	Camptosar, Onivyde	UGT1A1	Intermediate Metabolizer	No FDA guidance for your genotype	FDA
✓	Nilotinib	Tasigna	UGT1A1	Intermediate Metabolizer	No FDA guidance for your genotype	FDA
✓	Pazopanib	Votrient	UGT1A1	Intermediate Metabolizer	No FDA guidance for your genotype	FDA
✓	Sacituzumab Govitecan-Hziy	Trodelvy	UGT1A1	Intermediate Metabolizer	No FDA guidance for this phenotype	FDA
✓	Thioguanine	Lanvis, Tabloid	NUDT15	Normal Metabolizer	**CPIC**: *Implication:* Normal risk of thiopurine-related leukopenia, neutropenia, myelosuppression *Therapeutic recommendation:* Start with normal starting dose (40-60 mg/day). Adjust doses of thioguanine and of other myelosuppressive therapy without any special emphasis on thioguanine. Allow 2 weeks to reach steady-state after each dose adjustment. **FDA**: No FDA guidance for your genotype	CPIC, FDA
			TPMT	Normal Function	**CPIC**: *Implication:* Lower concentrations of TGN metabolites, but note that TGN after thioguanine are 5-10X higher than TGN after mercaptopurine or azathioprine. Normal risk of thiopurine-related leukopenia, neutropenia, myelosuppression. *Therapeutic recommendation:* Start with normal starting dose (e.g. 40-60 mg/m2/day) and adjust doses of thioguanine and of other myelosuppressive therapy without any special emphasis on thioguanine. Allow 2 weeks to reach steady-state after each dose adjustment. **FDA**: No FDA guidance for your genotype	CPIC, FDA

Cholesterol Medications

	GENERIC NAME	BRAND NAMES	GENE	YOUR GENE PHENOTYPE	IMPLICATION	SOURCE
✓	Rosuvastatin	Crestor	ABCG2	Normal Function	*Implication:* Typical myopathy risk and rosuvastatin exposure. *Therapeutic recommendation:* Prescribe desired starting dose and adjust doses of rosuvastatin based on disease-specific and population-specific guidelines.	CPIC
			SLCO1B1	Decreased Function	*Implication:* Increased rosuvastatin exposure as compared with normal function; typical myopathy risk with doses ≤20 mg *Therapeutic recommendation:* Prescribe desired starting dose and adjust doses of rosuvastatin based on disease-specific and population-specific guidelines. Prescriber should be aware of possible increased risk for myopathy especially for doses >20 mg.	CPIC

Female Sexual Health

	GENERIC NAME	BRAND NAMES	GENE	YOUR GENE PHENOTYPE	IMPLICATION	SOURCE
	Flibanserin	Addyi	CYP2C19	Intermediate Metabolizer	No FDA guidance for your genotype	FDA

Immunosuppressants

	GENERIC NAME	BRAND NAMES	GENE	YOUR GENE PHENOTYPE	IMPLICATION	SOURCE
	Abrocitinib	Cibinqo	CYP2C19	Intermediate Metabolizer	No FDA guidance for this phenotype	FDA
	Azathioprine	Imuran	NUDT15	Normal Metabolizer	**CPIC**: *Implication:* Normal risk of thiopurine-related leukopenia, neutropenia, myelosuppression *Therapeutic recommendation:* Start with normal starting dose (e.g., 2-3 mg/kg/day) and adjust doses of azathioprine based on disease-specific guidelines. Allow 2 weeks to reach steady state after each dose adjustment. **FDA**: No FDA guidance for your genotype	CPIC, FDA
			TPMT	Normal Function	**CPIC**: *Implication:* Lower concentrations of TGN metabolites, higher meTIMP, this is the "normal" pattern. Normal risk of thiopurine-related leukopenia, neutropenia, myelosuppression. *Therapeutic recommendation:* Start with normal starting dose (e.g., 2-3 mg/kg/day) and adjust doses of azathioprine based on disease-specific guidelines. Allow 2 weeks to reach steady state after each dose adjustment. **FDA**: No FDA guidance for your genotype	CPIC, FDA
	Mercaptopurine	Purinethol	NUDT15	Normal Metabolizer	**CPIC**: *Implication:* Normal risk of thiopurine-related leukopenia, neutropenia, myelosuppression *Therapeutic recommendation:* Start with normal starting dose (e.g., 75 mg/m2/day or 1.5 mg/kg/day) and adjust doses of mercaptopurine (and of any other myelosuppressive therapy) without any special emphasis on mercaptopurine compared to other agents. Allow at least 2 weeks to reach steady-state after each dose adjustment. **FDA**: No FDA guidance for your genotype	CPIC, FDA
			TPMT	Normal Function	**CPIC**: *Implication:* Lower concentrations of TGN metabolites, higher meTIMP, this is the "normal" pattern. Normal risk of thiopurine-related leukopenia, neutropenia, myelosuppression. *Therapeutic recommendation:* Start with normal starting dose (e.g., 75 mg/m2/day or 1.5 mg/kg/day) and adjust doses of mercaptopurine (and of any other myelosuppressive therapy) without any special emphasis on mercaptopurine compared to other agents. Allow at least 2 weeks to reach steady-state after each dose adjustment. **FDA**: No FDA guidance for your genotype	CPIC, FDA

Pain Management

	GENERIC NAME	BRAND NAMES	GENE	YOUR GENE PHENOTYPE	IMPLICATION	SOURCE
✓	Carisoprodol	Soma	CYP2C19	Intermediate Metabolizer	No FDA guidance for this phenotype	FDA
✓	Celecoxib	Celebrex	CYP2C9	Intermediate Metabolizer	**CPIC**: *Implication:* Mildly reduced metabolism *Therapeutic recommendation:* Initiate therapy with recommended starting dose. In accordance with the prescribing information, use the lowest effective dosage for the shortest duration consistent with individual patient treatment goals. **FDA**: No FDA guidance for your genotype	CPIC, FDA
✓	Flurbiprofen	Ansaid, Ocufen, Strepfen	CYP2C9	Intermediate Metabolizer	**CPIC**: *Implication:* Mildly reduced metabolism *Therapeutic recommendation:* Initiate therapy with recommended starting dose. In accordance with the prescribing information, use the lowest effective dosage for the shortest duration consistent with individual patient treatment goals. **FDA**: No FDA guidance for your genotype	CPIC, FDA
✓	Ibuprofen	Advil	CYP2C9	Intermediate Metabolizer	*Implication:* Mildly reduced metabolism *Therapeutic recommendation:* Initiate therapy with recommended starting dose. In accordance with the prescribing information, use the lowest effective dosage for the shortest duration consistent with individual patient treatment goals.	CPIC
✓	Lornoxicam	Xefo	CYP2C9	Intermediate Metabolizer	*Implication:* Mildly reduced metabolism *Therapeutic recommendation:* Initiate therapy with recommended starting dose. In accordance with the prescribing information, use the lowest effective dosage for the shortest duration consistent with individual patient treatment goals.	CPIC
✓	Tenoxicam	Mobiflex	CYP2C9	Intermediate Metabolizer	*Implication:* Mildly reduced metabolism *Therapeutic recommendation:* Initiate therapy with recommended starting dose. In accordance with the prescribing information, use the lowest effective dosage for the shortest duration consistent with individual patient treatment goals.	CPIC

Other Substances

	GENERIC NAME	BRAND NAMES	GENE	YOUR GENE PHENOTYPE	IMPLICATION	SOURCE
✓	Alcohol		ADH1B	✓ Normal Function	*Implication:* Homozygous Arg48 (G/G) genotype yields standard ethanol metabolism and acetaldehyde accumulation, resulting in average flushing and dependence risk. *Therapeutic recommendation:* Follow standard guidelines for alcohol consumption.	Gene2Rx
			ALDH2	✓ Normal Function	*Implication:* Typical flushing, hangover, addiction risk *Therapeutic recommendation:* Standard advice on safe drinking limits.	Gene2Rx
✓	KETAMINE	Ketalar	CYP2B6	✓ Normal Metabolizer	*Implication:* Expected ketamine metabolism and duration of effect *Therapeutic recommendation:* Initiate with standard ketamine doses per clinical practice.	Gene2Rx

Frequently Asked Questions

What do I do now?
If you find that you may have an atypical response to a medication you take or are considering taking, it is important that you first consult with your healthcare provider or a genetic counselor before making any changes.

Should I change medications or dosage based on my report?
No! Do not alter your medication dosage or stop taking your medication without first consulting your healthcare provider.

Why shouldn't I change my medication based on this report?
Direct-to-consumer data is not clinical grade, so anything included in the report should be used as a conversation starter with your healthcare provider to seek the appropriate clinical laboratory test.

Are these expert annotations?
Yes, The Clinical Pharmacogenetics Implementation Consortium (CPIC®) and the US Food and Drug Administration (FDA) have evaluated all pharmacogenetic associations presented in this report and believe there is sufficient scientific evidence to provide clinical guidance.

More questions?
Contact us at contact@gene2rx.com.