genesight®

Genetic testing can tell you what your patients can't.

The GeneSight® test provides information about your patient that may help you avoid multiple medication trials.

The GeneSight Psychotropic test is a pharmacogenomic test that analyzes clinically important genetic variations which may impact how your patient metabolizes and responds to certain medications used to treat mental health conditions. The test is a powerful tool to augment your knowledge, experience and passion for your patients.

Tens of thousands of clinicians have ordered the GeneSight test for

2 MILLION
patients and counting

7 clinical studies published in peer-reviewed journals support the GeneSight test's effectiveness.

GeneSight Psychotropic is the only psychiatric pharmacogenomic test backed by such extensive research.

In a post-hoc analysis of data from the GUIDED study, the GeneSight Psychotropic test was found to significantly improve clinical outcomes in patients taking medications with gene-drug interactions compared to treatment as usual.[1]

- Remission
- Response
- Symptom Improvement

For more information on GeneSight studies, visit **GeneSight.com/clinical-studies**

A Comprehensive Report, Personalized for your Patient.

The GeneSight® Psychotropic report provides information about which medications may require dose adjustments, be less likely to work, or have an increased risk of side effects based on your patient's genetic information.

GeneSight® Psychotropic
Pharmacogenomic Test

genesight

Patient, Sample
Date of Birth: MM/DD/YYYY
Clinician: Sample Clinician

Order Number: 0000000
Report Date: MM/DD/YYYY
Reference: 000000

Questions about report interpretation?
Contact our Medical Information team:
855.891.9415 | medinfo@genesight.com

Antidepressants

Non-Smokers — Smoking is defined as the daily inhalation of burning plant material (cigarettes, marijuana), and **excludes** vaping and e-cigarettes. This is used to determine medication results.

Use as Directed		Moderate Gene-drug Interaction		Significant Gene-drug Interaction	
desipramine (Norpramin®)		**venlafaxine** (Effexor®)	1	**bupropion** (Wellbutrin®)	2
desvenlafaxine (Pristiq®)		**selegiline** (Emsam®)	3	**amitriptyline** (Elavil®)	3
levomilnacipran (Fetzima®)		**fluoxetine** (Prozac®)	1,4	**paroxetine** (Paxil®)	4,6
nortriptyline (Pamelor®)		**clomipramine** (Anafranil®)	1,7	**escitalopram** (Lexapro®)	1,4,6
trazodone (Desyrel®)		**fluvoxamine** (Luvox®)	4,7	**sertraline** (Zoloft®)	1,4,6
vilazodone (Viibryd®)				**imipramine** (Tofranil®)	1,6,7
vortioxetine (Trintellix®)				**citalopram** (Celexa®)	1,4,6,8
duloxetine (Cymbalta®)	7			**doxepin** (Sinequan®)	1,6,7,8
mirtazapine (Remeron®)	7				

Clinical Considerations

1: Serum level may be too high, lower doses may be required.
2: Serum level may be too low, higher doses may be required.
3: Difficult to predict dose adjustments due to conflicting variations in metabolism.
4: Genotype may impact drug mechanism of action and result in moderately reduced efficacy.
6: Use of this drug may increase risk of side effects.
7: Smoking status changes the results of this medication. **See next section labeled Smokers for smoking results.**
8: FDA label identifies a potential gene-drug interaction for this medication.

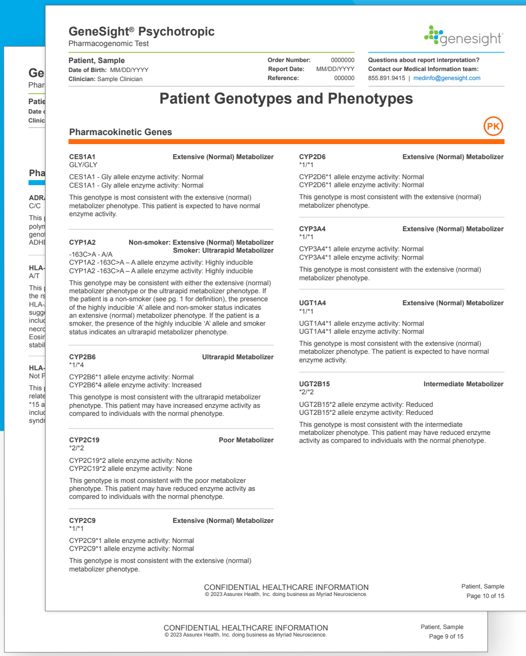
All psychotropic medications require clinical monitoring. Medications should not be changed based solely on the test results. The results of this test are intended to supplement other clinical information considered by a healthcare provider within the context of a comprehensive medical evaluation.
This report is not intended to imply that the drugs listed are approved for the same indications or that they are comparable in safety or efficacy. The brand name is shown for illustrative purposes only; other brand names may be available. The prescribing physician should review the prescribing information for the drug(s) being considered and make treatment decisions based on the patient's individual needs, the characteristics of the drug prescribed, and the risk and safety information provided in the drug's labeling. Propranolol and oxcarbazepine prescribed for neuropsychiatric disorders might be considered off-label. Please consult their respective FDA drug labels for specific guidelines regarding their use.

The GeneSight Psychotropic test interpretations are based on a thorough review of published peer-reviewed literature, internal research, and FDA label information when applicable. The clinical validity and utility of the GeneSight Psychotropic test have been evaluated for patients with major depressive disorder who failed at least one psychotropic medication in multiple clinical studies.

CONFIDENTIAL HEALTHCARE INFORMATION

Patient, Sample
Page 1 of 15

The report categorizes medications into three color-coded categories and applies clinical considerations to explain the rationale for a medication's classification. This information can be used to help inform treatment decisions.



GeneSight® Psychotropic
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Patient Genotypes and Phenotypes

Pharmacokinetic Genes

PK

CES1A1 — **Extensive (Normal) Metabolizer**
GLY/GLY

CES1A1 - Gly allele enzyme activity: Normal
CES1A1 - Gly allele enzyme activity: Normal

This genotype is most consistent with the extensive (normal) metabolizer phenotype. This patient is expected to have normal enzyme activity.

CYP1A2 — **Non-smoker: Extensive (Normal) Metabolizer**
Smoker: Ultrarapid Metabolizer
-163C>A - A/A
CYP1A2 -163C>A – A allele enzyme activity: Highly inducible
CYP1A2 -163C>A – A allele enzyme activity: Highly inducible

This genotype may be consistent with either the extensive (normal) metabolizer phenotype or the ultrarapid metabolizer phenotype. If the patient is a non-smoker (see pg. 1 for definition), the presence of the highly inducible 'A' allele and non-smoker status indicates an extensive (normal) metabolizer phenotype. If the patient is a smoker, the presence of the highly inducible 'A' allele and smoker status indicates an ultrarapid metabolizer phenotype.

CYP2B6 — **Ultrarapid Metabolizer**
*1/*4

CYP2B6*1 allele enzyme activity: Normal
CYP2B6*4 allele enzyme activity: Increased

This genotype is most consistent with the ultrarapid metabolizer phenotype. This patient may have increased enzyme activity as compared to individuals with the normal phenotype.

CYP2C19 — **Poor Metabolizer**
*2/*2

CYP2C19*2 allele enzyme activity: None
CYP2C19*2 allele enzyme activity: None

This genotype is most consistent with the poor metabolizer phenotype. This patient may have reduced enzyme activity as compared to individuals with the normal phenotype.

CYP2C9 — **Extensive (Normal) Metabolizer**
*1/*1

CYP2C9*1 allele enzyme activity: Normal
CYP2C9*1 allele enzyme activity: Normal

This genotype is most consistent with the extensive (normal) metabolizer phenotype.

CYP2D6 — **Extensive (Normal) Metabolizer**
*1/*1

CYP2D6*1 allele enzyme activity: Normal
CYP2D6*1 allele enzyme activity: Normal

This genotype is most consistent with the extensive (normal) metabolizer phenotype.

CYP3A4 — **Extensive (Normal) Metabolizer**
*1/*1

CYP3A4*1 allele enzyme activity: Normal
CYP3A4*1 allele enzyme activity: Normal

This genotype is most consistent with the extensive (normal) metabolizer phenotype.

UGT1A4 — **Extensive (Normal) Metabolizer**
*1/*1

UGT1A4*1 allele enzyme activity: Normal
UGT1A4*1 allele enzyme activity: Normal

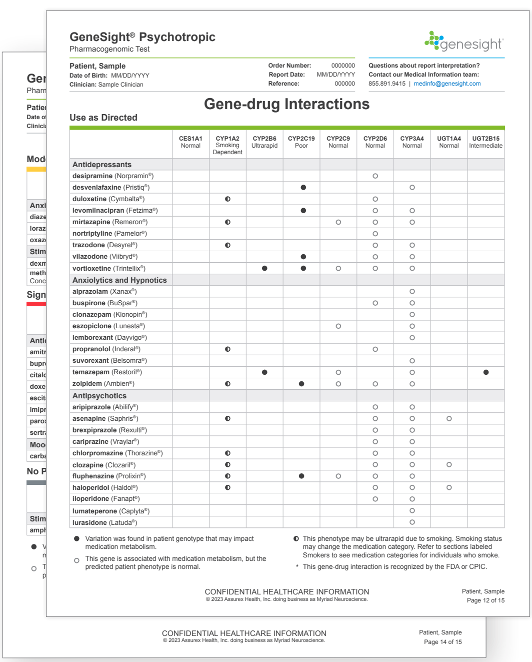
This genotype is most consistent with the extensive (normal) metabolizer phenotype. The patient is expected to have normal enzyme activity.

UGT2B15 — **Intermediate Metabolizer**
*2/*2

UGT2B15*2 allele enzyme activity: Reduced
UGT2B15*2 allele enzyme activity: Reduced

This genotype is most consistent with the intermediate metabolizer phenotype. This patient may have reduced enzyme activity as compared to individuals with the normal phenotype.

Genotype/phenotype information is provided for 5 pharmacodynamic and 9 pharmacokinetic genes. COMT is also included for informational purposes.



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Gene-drug Interactions

Use as Directed

	CES1A1 Normal	CYP1A2 Smoking Dependent	CYP2B6 Ultrarapid	CYP2C19 Poor	CYP2C9 Normal	CYP2D6 Normal	CYP3A4 Normal	UGT1A4 Normal	UGT2B15 Intermediate
Antidepressants									
desipramine (Norpramin®)						○			
desvenlafaxine (Pristiq®)				●			○		
duloxetine (Cymbalta®)		◐				○			
levomilnacipran (Fetzima®)				●		○	○		
mirtazapine (Remeron®)		◐			○	○	○		
nortriptyline (Pamelor®)						○			
trazodone (Desyrel®)		◐				○	○		
vilazodone (Viibryd®)				●		○	○		
vortioxetine (Trintellix®)			●	●	○	○	○		
Anxiolytics and Hypnotics									
alprazolam (Xanax®)							○		
buspirone (BuSpar®)						○	○		
clonazepam (Klonopin®)							○		
eszopiclone (Lunesta®)					○		○		
lemborexant (Dayvigo®)							○		
propranolol (Inderal®)		◐				○			
suvorexant (Belsomra®)							○		
temazepam (Restoril®)			●		○		○		●
zolpidem (Ambien®)		◐		●	○	○	○		
Antipsychotics									
aripiprazole (Abilify®)						○	○		
asenapine (Saphris®)		◐				○	○	○	
brexpiprazole (Rexulti®)						○	○		
cariprazine (Vraylar®)						○	○		
chlorpromazine (Thorazine®)		◐				○	○		
clozapine (Clozaril®)		◐				○	○	○	
fluphenazine (Prolixin®)		◐		●	○	○	○		
haloperidol (Haldol®)		◐				○	○	○	
iloperidone (Fanapt®)						○	○		
lumateperone (Caplyta®)							○		
lurasidone (Latuda®)							○		

● Variation was found in patient genotype that may impact medication metabolism.

○ This gene is associated with medication metabolism, but the predicted patient phenotype is normal.

◐ This phenotype may be ultrarapid due to smoking. Smoking status may change the medication category. Refer to sections labeled Smokers to see medication categories for individuals who smoke.

* This gene-drug interaction is recognized by the FDA or CPIC.

The gene-drug interaction chart provides information on which pharmacokinetic genes are involved in the metabolism of each medication.

Cost shouldn't be a barrier to the GeneSight® test.

We will bill your patient's insurance for the cost of the GeneSight test:

- Medicare (Part B) Covered Tests - $0 out of pocket cost for your patient
- Medicare Advantage Covered Tests – your patient may be expected to cover a portion of the cost (typically $330 or less) and the GeneSight Promise applies
- Medicaid – typically, your patient will have a $0 out of pocket cost
- Commercial or Other Insurance – plans vary, but your patient may be expected to cover a portion of the cost (typically $330 or less) and the GeneSight Promise applies

If your patient doesn't have insurance, please contact our Customer Service team to find out how we can help.

We also offer a payment plan and a financial assistance program to help patients with their out of pocket cost. Learn more about these programs at **GeneSight.com/cost**

The GeneSight Promise

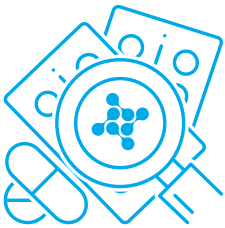
We do our best to make the GeneSight test affordable for your patients. We promise that if your patient's cost could be more than $330, we will contact them before we process their test.

Over **95%** of patients pay **$330** or less

Who Can Benefit from the GeneSight test?

Fewer than 50% of patients with depression respond to their first prescribed medication and with each failed medication trial, their treatment intolerance increases.[2]

Consider offering the GeneSight test to:



- New patients with a previous medication failure
- Patients who are experiencing lower than desired medication response
- Patients who are currently experiencing unwanted side effects
- Elderly patients and patients with liver damage

The GeneSight test delivers genetic insights that may inform your treatment plan and potentially shorten your patients' road to recovery.

The GeneSight Psychotropic test can provide information that your patients can't.

To order the GeneSight test or request additional information, contact your sales representative or email **isrteam@genesight.com**

Customer Service
866.757.9204
info@genesight.com

Medical Information
855.891.9415
medinfo@genesight.

Visit **GeneSight.com** to learn more.

Not all patients who receive the GeneSight test will have improved outcomes. The GeneSight test is intended to supplement a clinician's comprehensive medical assessment.

1. Thase ME, et al. 2019 J Clin Psychiatry
2. Rush AJ, et al. 2006 Am J Psychiatry

Myriad genetics

GSPS.003.237