



Patient Case Study

**SUBOPTIMAL
SSRI RESPONSE**

**How the GeneSight
test provided key
insights to better
inform a medication
switch following a
patient's suboptimal
SSRI response**

 genesight®

Why use the GeneSight® Psychotropic test?

The GeneSight test delivers clinically actionable insights to help improve outcomes for many types of patients, from those early in their treatment journeys to those with more complex histories.

In this case study, **the clinician was treating a patient wary of switching mental health medications.** The patient had previously **failed an antidepressant due to side effects** and was experiencing a **poor response on her current treatment.** The clinician ordered the GeneSight test to help **inform the next steps** in her treatment journey.



Adapted from a real patient case:

Severe major depressive disorder with two prior medication trials



Actor
portrayal

Patient Information

Age: 48 **Race:** White **Sex:** Female

Past medical history: N/A

Social history: N/A

Family history: Father with bipolar disorder, mother with chronic pain

Smoking status: Non-smoker

Clinical Presentation

Target psychiatric symptoms:

Sadness, hopelessness, high anxiety, trauma memories

Primary psychiatric diagnosis:

Major depressive disorder (severe)

Other diagnoses:

Generalized anxiety disorder, social phobia, ADHD, chronic pain

Treatment History

Previous medication trials:

- Wellbutrin®
- Lexapro®

Medication list at the time of GeneSight testing:

- Lexapro 20 mg daily

Treatment changes being considered prior to GeneSight® testing:

- Discontinuing Lexapro
- Switching to another SSRI

Optimizing a treatment plan with the GeneSight® test

Patient report

At the time of testing, the patient had already trialed two antidepressants, Wellbutrin® and Lexapro®. The patient had previously failed Wellbutrin due to side effects, including increased anxiety, and she was experiencing a poor response on Lexapro.

The clinician was considering switching the patient from Lexapro to a different SSRI but decided to first order the GeneSight test to obtain objective insights that could help inform their treatment decision. The clinician and patient both agreed that objective insights would help the patient feel more comfortable trying a new medication.

Patient's medication adjustments after GeneSight testing

Discontinued after testing

Prescribed or adjusted after testing

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

Clinical Considerations

- 1: Serum level may be too high, lower 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.

Selected page from the patient's GeneSight report is displayed. ▲

Interested in viewing the patient's full report, including pharmacodynamic and pharmacokinetic findings?

Scan the QR code



How GeneSight® results informed treatment decisions

By looking at variations in the patient's pharmacodynamic and pharmacokinetic genes, the GeneSight test revealed critical information about certain mental health medications:

- Patient has the L/S genotype for the SLC6A4 promoter polymorphism, **which is predictive of a moderately reduced response to certain SSRIs** (Clinical Consideration 4), including Paxil®, Zoloft®, Lexapro®, and Celexa®
- Patient has the G/G genotype for HTR2A, **which is predictive of an increased likelihood of side effects when taking Paxil** (Clinical Consideration 6)
- **Patient is a CYP2C19 poor metabolizer**, which may lead to significantly reduced metabolism (Clinical Consideration 1), as well as an increased risk of side effects for certain antidepressants, including Lexapro, Celexa, and Zoloft (Clinical Consideration 6)
- Patient is also a **CYP2B6 intermediate metabolizer**, which may lead to decreased metabolism of certain medications including Wellbutrin® (Clinical Consideration 1)

As part of a comprehensive medical assessment, GeneSight results helped the **clinician decide to discontinue Lexapro and opt for initiating Cymbalta® 20 mg daily**. The patient did not have genetic variations expected to impact outcomes with Cymbalta, and Cymbalta is known to help alleviate neuropathic pain.

After this treatment change, **the patient experienced improvement in sadness, motivation, social engagement and anxiety, and she agreed to begin therapy.**



Insights from the GeneSight test helped this patient's clinician adjust her treatment plan to:

- Avoid potential for reduced efficacy with SSRIs
- Decrease the risk of side effects
- Improve patient outcomes

Interested in learning more about the GeneSight test? Scan the QR code or visit genesight.com today.

