Pharmacogenomic Testing

Mental health is personal. Your treatment should be too.

What Is Pharmacogenomic Testing (PGx)?

Pharmacogenomics is the study of how your DNA may affect your response to medications. This kind of testing uses information about a person's genetic makeup to help inform health care providers' medication selection and dosage.

Pharmacogenomic tests provide genetic information that is unique to each patient. For example, research indicates that genetic variations may explain up to 42% of the differences in how people respond to antidepressants.

It's important to remember that **lifestyle factors** like smoking and diet, and interactions with other medications, **can also impact treatment effectiveness.**

Why PGx Matters for Mental Health

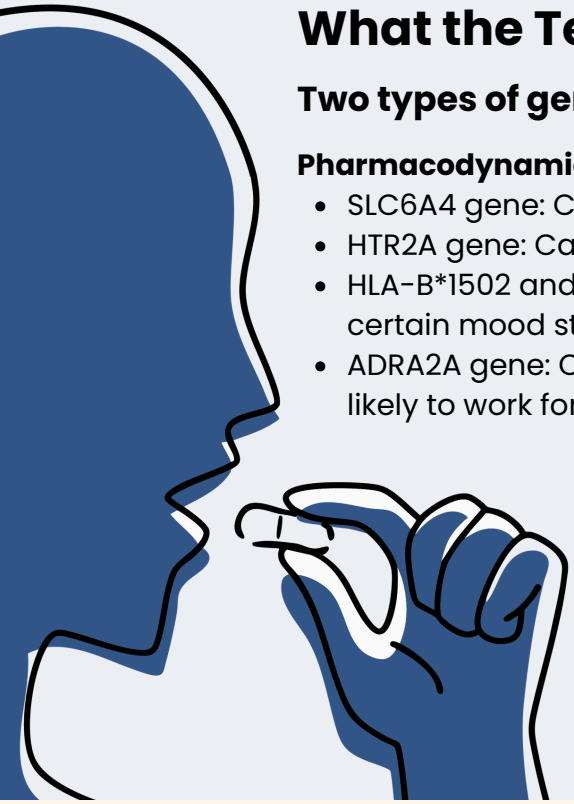
Finding the mental health medication that works best for you can often mean months of trial and error. Less than 40% of people achieve remission from depression on their first medication.

Pharmacogenomic testing may help when:

- You've tried mental health **medications that didn't work.**
- You've had **bad side effects.**
- **You haven't found relief** after multiple medication attempts.

In a study of nearly 2,000 people with a history of treatment for Major Depressive Disorder (MDD), those who underwent pharmacogenomic testing were **more likely to achieve remission** over 24 weeks of treatment compared to those who did not receive pharmacogenomic testing, and less likely to be prescribed medications with predicted gene-drug interactions.

Another large study showed **significantly reduced general and psychiatric hospitalizations** among people with MDD following pharmacogenomic testing, especially when patients were switched to medications with no or moderate gene-drug interactions.



What the Test Looks For

Two types of genetic clues:

Pharmacodynamic factors (how your body reacts to medication)

- SLC6A4 gene: Can show if SSRIs may be less likely to work.
- HTR2A gene: Can signal the risk of side effects for certain SSRI medications.
- HLA-B*1502 and HLA-A*3101 genes: Can predict dangerous skin reactions for certain mood stabilizer medications.
- ADRA2A gene: Can help determine if certain stimulant medications may be less likely to work for you.

Pharmacokinetic factors (how your body breaks down medication)

- Whether your body breaks down medications too fast or too slowly. This can help determine changes in the dose you may need, or if you should consider switching medications.
- The impact that smoking cigarettes or marijuana has on how your body processes certain medications.

How Testing Works

- Testing is often considered after you've tried other medications.
- It must be ordered by a doctor or licensed provider.
- A cheek swab is taken and sent to a lab.
- Results are sent to your clinician to review with you.

Thinking About Getting Tested?

- **Keep notes** on what medications you've tried and how they worked
- **Talk to your mental health provider** about whether it's right for you - scan the QR code for tools to start a conversation
- **Ask your insurance** what's covered and what your costs might be
- **Financial assistance is available** for eligible patients to help cover out-of-pocket expenses

Click here for tools to start a conversation

Sources

- Tansey KE, Guipponi M, Hu X, et al. Contribution of common genetic variants to antidepressant response. *Biol Psychiatry*. 2013.
- Rush AJ, Trivedi MH, Wisniewski SR, et al. Acute and longer-term outcomes in depressed outpatients requiring one or several treatment steps: a STAR*D report. *Am J Psychiatry*. 2006.
- Oslin DW, Lynch KG, Shih M, et al. Effect of pharmacogenomic testing for drug-gene interactions on medication selection and remission of symptoms in major depressive disorder: The PRIME Care trial. *JAMA*. 2022.
- Del Tredici AL, Johnson HL, DeHart B, et al. Real-world impact of pharmacogenomic testing on medication use and healthcare resource utilization in patients with major depressive disorder. *J Clin Psychopharmacol*. 2025.

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