Your CYP2D6 Genetic Test Results and What They Mean

CYP2D6: Normal Metabolizer

Pharmacogenomic Testing Overview

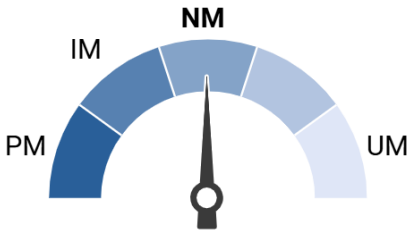
Pharmacogenomic (PGx) testing looks at how your genes affect your response to certain medications. Genes are pieces of DNA that provide instructions to make our bodies look and work as they do. Some genes affect the way medications work in the body. When comparing a group of people, there can be slight differences in the structure of each person's genes. These differences can affect how people respond to medications.

Some gene differences might make it harder for the body to get rid of some medications. This means that the usual dose of the medication may cause unexpected side effects. Some gene differences can cause the body to use up a medication too fast. This means that normal doses will not work as well, and the person may need higher doses. Some gene differences will not let certain medications work in the body at all. This means a different medication may work better. Some gene differences increase your chances of side effects to medications. This means that you may need to avoid certain medications.

This gene test may have been part of a panel of genes or a single gene test. The results and affected medications described below may not be relevant to your current care, but could be in the future.

About the CYP2D6 Gene

The test we did was for a gene called Cytochrome P450 2D6 (abbreviated CYP2D6). This gene makes an enzyme that breaks down, or metabolizes, medications in the body. Breaking down a medication can either make it stop working or activate it to make it work as intended. It is common to have slight variations in the CYP2D6 gene that affect how the enzyme works. Depending on these variations, people are considered Poor (PM), Intermediate (IM), Normal (NM), or Ultrarapid Metabolizers (UM).



Your CYP2D6 result puts you in the normal metabolizer group. In people who are normal metabolizers, the CYP2D6 enzyme has normal activity. People who are normal metabolizers break down medications at a normal rate and often need standard doses of a medication. About 85% of our patients are normal metabolizers. Your healthcare providers can use your test results to help decide what medications and what dose may be the best for you.

The following are medications metabolized by the CYP2D6 enzyme:

ADHD: amphetamine, atomoxetine
Antidepressants: amitriptyline, clomipramine, desipramine, doxepin, fluoxetine, fluvoxamine, imipramine, nortriptyline, paroxetine, trimipramine, venlafaxine, vortioxetine
Antipsychotics: aripiprazole, haloperidol, perphenazine, pimozide, risperidone, thioridazine, zuclopenthixol
Pain medications: codeine, hydrocodone, oxycodone, and tramadol
Other medications: ondansetron (used to treat nausea/vomiting), metoclopramide (used to treat nausea/vomiting), metoprolol (used to treat high blood pressure), eliglustat (used in Gaucher disease)

Do not make any adjustments to your medications without first speaking to your healthcare provider.

Medications can affect how other medications work by changing how well the CYP2D6 enzyme works. This is important when someone is on multiple medications at the same time. Because your genes stay the same even as you age, it is important for you to share this result with your other doctors and pharmacists outside Children's Mercy. This result may affect how doctors prescribe medications throughout your life.

More Information

- Research continues to be done on what medications are affected by genetic test results. For more details about which medications are broken down by CYP2D6, please go to www.clinpgx.org.
- If you have questions about your pharmacogenetic test results or specific treatment options, discuss them with your healthcare provider or call 816-601-3360 to schedule an appointment at the Children's Mercy GOLDILOKs Clinic.

- If interested in volunteering for pharmacogenetic research, please contact the Children's Mercy Research Institute at pharmacogeneticsresearch@cmh.edu.

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