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Your doctor or pharmacist will use your PHASER test results, plus other factors, to choose the type and dose of medicine for you.

***How do I use my PHASER test results?***

Many people often see more than one doctor. Please make sure to mention or share your test results with all healthcare professionals (including your pharmacist) each time you are prescribed a new medication. If you have questions or concerns about your PHASER test results, you should discuss these with your doctor or pharmacist.

***Do my PHASER test results affect my insurance policy?***

A Federal law called the Genetic Non-discrimination Act (GINA) generally makes it illegal for health insurance companies to use any type of genetic test result in decisions about your insurance policy. This federal law doesn't restrict use of the results by other types of insurers, such as life, disability, or long-term care insurance companies in policy decisions.

For more information, please visit the following sites:

- PHASER Website: <https://www.cancer.va.gov/phaser.asp>
- National Human Genome Research Institute, National Institutes of Health: [www.genome.gov/FAQ/Pharmacogenomics](http://www.genome.gov/FAQ/Pharmacogenomics)
- Centers for Disease Control & Prevention: [www.cdc.gov/genomics/disease/pharma.htm](http://www.cdc.gov/genomics/disease/pharma.htm)
- Food and Drug Administration: [www.fda.gov/drugs/science-research-drugs/pharmacogenomics-overview-genomics-and-targeted-therapy-group](http://www.fda.gov/drugs/science-research-drugs/pharmacogenomics-overview-genomics-and-targeted-therapy-group)



PHASER Program

V.2 2019-12-20

# PHASER Program

*"Pharmacogenomic (PGx) Testing for Veterans"*

## Understanding your Pharmacogenomics (PGx) Test Results



VA U.S. Department of Veterans Affairs



## PHASER

### “Pharmacogenomic Testing for Veterans”

#### What is Pharmacogenomics (PGx)?

- Pharmacogenomics uses information from a person’s genes to help predict their response to medications.
- Genes are made of DNA, which are molecules found in our tissue and blood.
- Genes provide instructions for making proteins, which carries out certain jobs for the body.
- We all have some differences in our DNA that can change how a protein is made or carries out its job. These small differences are called variants and may be found in genes that can influence your responses to medications.

#### Gene differences that may influence responses to medications.

- The PHASER PGx test looks at a small number of genes that are important for how your body responds to certain medicines. Scientists are still working to find other genes that are important in this function.

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- The PHASER test provides information regarding proteins that process, transport, or are the target of medications.
- Along with other medical information, the information from your PGx test may help your doctor or pharmacist make better decisions about which medication and dose is best for you.

#### The PHASER PGx Test Result

##### Test Details

Gene	Genotype	Phenotype
CYP2C19	*2/*17	Intermediate Metabolizer
CYP2C9	*1/*1	Normal Metabolizer
CYP2D6	*2/*2	Normal Metabolizer
CYP3A5	*3/*3	Poor Metabolizer
DPYD	Activity Score: 2	Normal Metabolizer
SLCO1B1	*1/*1	Normal Function
TPMT	*1/*1	Normal Metabolizer
VKORC1	-1639G>A G/A	Intermediate Warfarin Sensitivity

- Your PHASER test report shows the table of your actual results for each gene tested. This is called a *genotype* (see sample table above) and shows what variants were detected in each gene (if any).
- Your PHASER test result will also provide a *phenotype* or description of what each result means for the function of a protein. You will often see terms like “poor”, “normal”, or intermediate” metabolizer because some variants will affect how fast a protein can break down a medication.

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- Your PHASER test results are not relevant to every medication. Please talk with your doctor or pharmacist about which medications are affected by your test result. They can look at the list of medications you are taking to see which (if any) are impacted by the genes covered by the PHASER test.
- The PHASER test results do not provide information related to diseases that you are affected with or may be at risk for, like cancer or heart disease, for example.
- Your PHASER test results will not change over time. Thus, you do not need to be re-tested for these genes. However, new genes or variants may be discovered in the future and another test may be considered.

#### How will my doctor or pharmacist use my PHASER test results?

- Your PHASER test results do not provide all the information your healthcare provider needs to predict how your body will respond to certain medications.
- Things such as your age, organ function, weight, health, lifestyle choices, other medications, and diet influence how your body will respond to medications.

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