



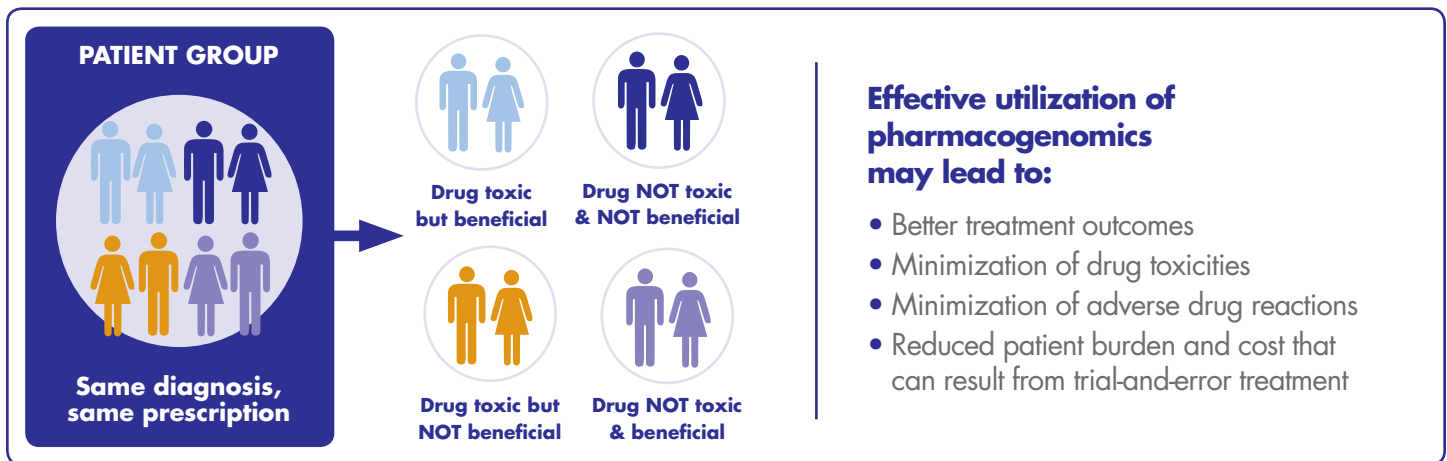


VARIABILITY IN DRUG EFFICACY AND DRUG SAFETY IS A LEADING CHALLENGE IN CURRENT CLINICAL PRACTICE




	82% of American adults take at least one medication, and 29% take 5 or more ¹		\$3.5 billion is spent on extra medical costs for adverse drug events annually ³
	700,000 emergency department visits and 117,000 hospitalizations are due to adverse drug events annually ²		At least 40% of costs for adverse drug events (in nonhospital settings) are estimated to be preventable ³

Help predict a patient's medical and pharmaceutical response

Pharmacogenomics is an important tool in helping to understand how patients metabolize medications based on their DNA, and it is a pillar in the personalized medicine movement.



Using a patient's DNA sample and an accompanying list of current medications, the pharmacogenomics test report indicates guidance levels based on a patient's genotype:

	Medication has potentially reduced efficacy or increased toxicity, or the patient has an increased risk for the indicated condition
	Guidelines exist for adjusting dosage or increased vigilance, or the patient has a moderate risk for the indicated condition
	Medication can be prescribed according to standard regimens, or the patient's risk for the indicated condition is not increased

Many FDA-approved drugs include pharmacogenomic information in their labeling and specify actions to be taken based on the biomarker information. Following is a selection⁴:

Cardiology	Psychiatry			Pain Management	
Carvedilol	Aripiprazole	Desipramine	Imipramine	Pimozide	Celecoxib
Clopidogrel	Atomoxetine	Diazepam	Modafinil	Protriptyline	Codeine
Metoprolol	Chlordiazepoxide	Doxepin	Nefazodone	Risperidone	Tramadol
Prasugrel	Citalopram	Fluoxetine	Nortriptyline	Thioridazine	
Propafenone	Clomipramine	Fluvoxamine	Paroxetine	Trimipramine	
Propranolol	Clozapine	lloperidone	Perphenazine	Venlafaxine	
Ticagrelor					

ADVANCED PHARMACOGENOMICS TESTING PANEL

		Genes Tested	Alleles Tested
		Cardiology	Apolipoprotein E
CYP2B6	*1, *6, *9		
CYP2C19	*1, *2, *3, *4, *4B, *6, *7, *8, *9, *10, *17		
CYP2C9	*1, *2, *3, *4, *5, *6, *8, *11, *27		
CYP2D6	*1, *2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41, *5 (gene deletion), XN (gene duplication)		
CYP3A4	*1, *1B, *2, *3, *12, *17, *22		
CYP3A5	*1, *2, *3, *3C, *6, *7, *8, *9		
Factor II	20210G>A		
Factor V Leiden	1691G>A		
MTHFR	1298A>C, 677C>T		
SLCO1B1	521T>C, 388A>G		
VKORC1	-1639G>A		
Pain Management	COMT		Val158Met
	CYP1A2	*1A, *1C, *1D, *1F, *1K, *1L, *1V, *1W	
	CYP2C19	*1, *2, *3, *4, *4B, *6, *7, *8, *9, *10, *17	
	CYP2C9	*1, *2, *3, *4, *5, *6, *8, *11, *27	
	CYP2D6	*1, *2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41, *5 (gene deletion), XN (gene duplication)	
	OPRM1	A118G	
	Psychiatry	ANKK1/DRD	*A1, *A2 (aka Taq1A)
COMT		Val158Met	
CYP1A2		*1A, *1C, *1D, *1F, *1K, *1L, *1V, *1W	
CYP2C19		*1, *2, *3, *4, *4B, *6, *7, *8, *9, *10, *17	
CYP2C9		*1, *2, *3, *4, *5, *6, *8, *11, *27	
CYP2D6		*1, *2, *3, *4, *4M, *6, *7, *8, *9, *10, *12, *14A, *14B, *17, *29, *35, *41, *5 (gene deletion), XN (gene duplication)	
OPRM1		A118G	

PHARMACOGENOMICS TESTING PROCESS

THE PROCESS	The DNA collection procedure is simple and requires only an in-office buccal (cheek) swab with our sample collection kit. UPS will pick up your patient samples and deliver them directly to our lab (labels and instructions are included in each kit). Dedicated account services are always available to answer questions and manage requests.
THE TURNAROUND TIME	7 to 10 days
THE REPORT	Upon completion of DNA extraction and evaluation at our advanced laboratory facility, a comprehensive report is generated and uploaded to a secure portal with dedicated physician log-in and downloading capabilities. Physician-to-physician consultation is also available with our Medical Director or our Genetic Counselor. Monograph is available upon request.

Talk to your representative or visit our web site for our full catalog of genetic testing solutions.

Personalized Genetic Medicine // Inherited Genetic Disorders // Women's Genetic Health

ABOUT PREMIER GENOMICS

Premier Genomics is committed to advancing the field of personalized genetic medicine by offering cutting-edge genetic screening services to help practitioners and their patients in pursuit of tailored treatment and optimized, personalized health care. We work together with patients and their insurance providers to help ensure that access to these important genetic tests does not cause patients financial hardship.



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 CLIA-accredited, CAP-certified clinical laboratory

References: **1.** Patterns of medication use in the United States, 2006: a report from the Slone Survey. Boston, MA: Slone Epidemiology Center at Boston University. <http://www.bu.edu/slone/files/2012/11/SloneSurveyReport2006.pdf>. Accessed January 2, 2016. **2.** Budnitz DS, Pollock DA, Weidenbach KN, Mendelsohn AB, Schroeder TJ, Annest JL. National surveillance of emergency department visits for outpatient adverse drug events. *JAMA*. 2006;296(15):1858-1866. **3.** Institute of Medicine. Preventing medication errors. Washington, DC: National Academies Press; 2006. <https://iom.nationalacademies.org/~media/Files/Report%20Files/2006/Preventing-Medication-Errors-Quality-Chasm-Series/medicationerrorsnew.pdf>. Accessed January 2, 2016. **4.** Table of pharmacogenomic biomarkers in drug labeling. US Food and Drug Administration website. <http://www.fda.gov/drugs/scienceresearch/researchareas/pharmacogenetics/ucm083378.htm>. Updated May 20, 2015. Accessed January 2, 2016.