



PHARMACOGENOMICS

**AEON**  
GLOBAL HEALTH

Know better. Live better.



# PHARMACOGENOMICS

## The promise of personalized medicine


Adverse drug events (ADEs) are a serious health issue in the United States. About 82% of American adults take at least one medication while 29% take five or more. ADEs lead to 700,000 emergency room visits, 120,000 hospitalizations and 100,000 deaths in the US each year. This results in over \$30 billion in additional spend annually.<sup>1</sup>

Pharmacogenomics studies have shown that more than 50% of the patient population are dosing ineffectively due at least in part to a genetic mismatch between the patient's metabolism and the medication. Recent genetic research has helped to create a better understanding of this mismatch by explaining the significance of genetics in drug metabolism. This information about a patient's genetic makeup, coupled with their lifestyle behavior and other risk factors, enhances the physician's ability to provide personalized medical care and treatment to each patient.

## PGX Advantage™

At AEON, we are committed to increasing awareness, understanding, and clinical use of pharmacogenomics testing. Our 17 gene PGX Advantage testing profile provides information about the connection between a patient's unique genetic makeup and their response to certain cardiology, pain and psychiatry medications.

We understand that as physicians, you must continually seek out ways to enhance the care you provide to each of your patients. Our pharmacogenomics tests provide information that enable you to offer personalized care and tailored medication to meet your patient's unique needs with positive outcomes.



**Enabling healthcare professionals to Prescribe With Confidence – The Right Drug at the Right Dosage at the Right Time.**



# Who can Benefit from Pharmacogenomics Testing?

Pharmacogenomics testing can improve outcomes for patients, reduce costs for payors, and enhance the overall quality of care delivered by the physician. These tests can reduce the number of failed drug treatments, adverse drug reactions, the number of medications a patient takes before finding the right one, and provide a more complete clinical picture of each patient.

Patients who can benefit from PGX testing include those:

- taking multiple medications
- with current prescriptions that are not working
- on complex drug treatment plans
- and with previous adverse drug reactions (ADRs) to medications

## Why AEON?



### Broad Testing Profile

Our broad testing profile provides information for physicians to identify a patient as a slow, intermediate, fast, or ultra-fast metabolizer of over 200 different drugs across 30 different drug classes. Our Comprehensive Pharmacogenomics Profile includes genetic-metabolic relationships for antifungal, antiemetic, acid disorder, immunosuppressant and urinary incontinence medications. Risk factors for thrombophilia, hyperhomocysteinemia and dyslipidemia are also tested.



### Safer and More Effective Treatment

We help physicians maximize drug efficacy while minimizing adverse drug effects and drug to drug interactions. We provide you with information that allows you to prescribe the right drug at the correct dosage based on an individual's genotype as well as their weight and age.



### Use of Latest Technology

We use state-of-the-art, high-throughput genotyping technology to analyze patient samples that ensures speed and accuracy of results. Our fully equipped, next generation laboratories have the capability to handle large volumes and capacity for growth.



### Effective Quality Controls

Ensuring accuracy and speed, we employ robotic testing systems for precision: each step is automated to avoid human error. This approach enables AEON to provide fast and reliable turnaround times. At AEON, every test result is reviewed at least twice while the final report is reviewed by a senior scientist before being released. Every patient sample is run twice to deliver double the industry standards.



### Highly Trained Scientists

Our experienced management team and Ph.D. scientists position us well to achieve better results and improved performance. All pharmacogenetic patient samples are handled with the greatest care by highly trained genetic scientists in our state-of-the-art facility. The scientists are also available for in-depth consultations. AEON also has a strong, internationally renowned, cross-functional scientific advisory board that positions us as a leading player in scientific innovation in the areas of clinical diagnostics and healthcare technology.



### Easily Interpreted and Clinically Actionable Reports

Our testing reports are comprehensive and easy-to-understand; in each testing protocol the outcomes are produced in simple formats delivered via a secured portal, fax or EMR. AEON also provides professional assistance in the interpretation of results; trained genetic scientists are on-hand to help physicians understand the results and integrate them into a patient's overall treatment plan.



### Exceptional Customer Service

We know that our work impacts the lives of people. We focus on providing exceptional customer service by providing our partner healthcare professionals with customized service plans to maximize the effective delivery of care for patients.

# The Testing Process



## Impacted Medications and Genes Tested\*

Category	Drug Class	Generic Name	Trade Name	Gene
Cardiovascular	Angiotensin II Receptor Antagonists	Losartan	Cozarr	CYP2C9
	Antianginal Agents	Ranolazine	Ranexa	CYP2D6
	Antiarrhythmics	Flecainide	Tambocor	CYP2D6
	Anticoagulants	Warfarin	Coumadin	CYP2C9
	Antiplatelets	Clopidogrel	Plavix	CYP2C19
	Beta Blockers	Metoprolol	Lopressor	CYP2D6
	Diuretics	Torsemide	Demadex	CYP2C9
	Statins	Simvastatin	Zocor	SLC01B1
Diabetes	Meglitinides	Nateglinide	Starlix	SLC01B1, CYP2C9
	Sulfonylureas	Glimepiride	Amaryl	CYP2C9
Gastrointestinal	Antiemetics	Dolasetron	Anzemet	CYP2D6
	Proton Pump Inhibitors	Lansoprazole	Prevacid	CYP2C19
Infections	Antifungals	Voriconazole	Vfend	CYP2C19
	Antimalarials	Proguanil	Malarone	CYP2C9
Pain	Muscle Relaxants	Carisoprodol	Soma	CYP2C19
	NSAIDs	Celecoxib	Celebrex	CYP2C9
	Opioids	Hydrocodone	Vicodin	CYP2D6
	Antiaddictives	Naltrexone	Contrave	OPRM1

Category	Drug Class	Generic Name	Trade Name	Gene
Psychotropic	Anti-ADHD	Amphetamine	Adderall	COMT
	Anticonvulsants	Phenytoin	Dilantin	CYP2C9
	Antidementia Agents	Donepezil	Aricept	CYP2D6
	Antidepressants	Sertraline	Zoloft	CYP2C19
	Antipsychotics	Aripiprazole	Abilify	CYP2D6
	Benzodiazepines	Diazepam	Valium	CYP2C19
	Other Neurological Agents	Filbanserin	Addyi	CYP2D6
Rheumatology	Immunomodulators	Leflunomide	Arava	CYP2C19
Transplantation	Immunosuppressants	Tacrolimus	Prograf	CYP3A5
Urologicals	5-AlphaReductase Inhibitors	Dutasteride	Avodart	CYP3A4
	Alpha-Blockers for Hyperplasia	Alfuzosin	Uroxatral	CYP3A4
	Antispasmodics	Oxybutynin	Ditropan	CYP3A4
	Phosphodiesterase	Avanafil	Stendra	CYP3A4

\*The above listing is not inclusive of all drugs or genes tested, but does include all drug classes tested in AEON's PGX Advantage™ test.

## References

<sup>1</sup> National Center for Complementary and Integrative Health (NCCIH) and the Centers for Disease Control and Prevention (CDC), based on data from a special supplement—on use of complementary health approaches—to the 2012 National Health Interview Survey (NHIS).



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