Is Your Prescription Medication Working Properly for You?

The traditional approach of prescribing medication is through the “trial and error method” using the assumption that “one size fits all”. With pharmacogenetic testing, the prescribing strategy is based on the patient’s unique genetic profile and helps doctors prescribe the Right Medication at the Right Dose, the First Time.

Not everyone responds the same way to a medication, or they experience different side effects. The way a person responds to a medication can be the result of the genes they’ve inherited. A person’s unique genetic makeup and individual response may mean that a drug is effective for one person and less effective for another because medications are metabolized by individuals differently. With a pharmacogenetics test, it’s now possible to know which medications you are going to metabolize safely and effectively, thereby lowering the risk of adverse drug reactions and ineffective treatments.

What is Pharmacogenetic (PGX) Testing?
Pharmacogenetics (PGX) is the study of how a person’s genetic makeup affects that individual’s response to medications. PGX testing aims to develop a strategy to optimize drug therapies. Data, with respect to a patient’s genotype, is used to maximize drug efficacy while minimizing adverse drug effects and drug-to-drug interactions.

PGX can provide your doctor with a targeted guide of which prescription medications are going to be most effective for you and the medications you should avoid based on your genetic makeup.

With the GeneMedication™ Test you can identify the Right Medication, the Right Dose, the First Time.

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Why is Pharmacogenetics Necessary?

150+

FDA-approved drugs suggest a prior PGX test

1/3

of antidepressants & antipsychotic medications are ineffective

82%

of Americans take at least one medication

29%

of Americans take five or more medications

50%

of the medications patients take are ineffective

4th

leading cause of death in the US is adverse drug reactions

EVERY YEAR ADR CAUSE:

2.2 Million adverse drug reactions (ADR)

700,000+ emergency room visits

5-7% of all hospital admissions

$136 Billion in direct health care costs

106,000 deaths in the US

120,000+ hospitalizations

SOURCE

The Future of Precision Healthcare is Here:

Salus Genetics® offers a portfolio of precision healthcare tests. Our pharmacogenetics test, called GeneMedication™, can provide an in-depth analysis of how your prescription medication(s) is working or not working for you. The GeneMedication™ test can also help you avoid taking medications that your body will not properly metabolize and potentially put you at risk for an ADR (adverse drug reaction).

Therapeutic Classes Include:

Pain Management, Anesthesiology, Cardiology, Endocrinology, Gastroenterology, Infectious Diseases, Neurology, Oncology, Psychiatry, Rheumatology.

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Here are the most common drug classes that can be optimized for safety and efficacy from the results of a GeneMedication™ test:

- **ADHD**: Atomoxetine (Strattera)
- **Antiarrhythmics**: Flecainide (Tambocor), Propafenone (Rythmol)
- **Anticoagulants**: Acenocoumarol (Sintron, Actrom), Warfarin (Coumadin)
- **Anticonvulsants**: Clobazam (Onfi), Phenytoin (Dilantin)
- **Antidementia**: Donepezil
- **Antidepressants**: Flupenthixol, Mirtazapine, Moclobemide, Trazodone (Oleptro, Desyrel), Amitriptyline (Elavil), Clomipramine (Anafranil), Desipramine (Norpramin), Doxepin (Deptran), Duloxetine (Cymbalta), Nortriptyline (Pamelor), Protriptyline (Vivactil), Venlafaxine (Effexor), Vortioxetine (Trintellix)
- **Antidiabetics**: Glibenclamide (Gluburide), Gliclazide, Glimepiride, Saxagliptin (Onglyza), Tolbutamide (Orinase)
- **Antifungals**: Ketoconazole (Nizoral), Voriconazole
- **Antiplatelet Agents**: Clopidogrel (Plavix), Ticagrelor (Brilinta)
- **Antipsychotics**: Olanzapine (Zalasta, Zyprexa), Quetiapine (Serquel), Aripiprazole (Abilify), Clozapine, Haloperidol (Haldol), Risperidone (Risperdal), Zuclopenthixol, Thioridazine
- **Antivirals**
- **Anxiolytics**: Alprazolam (Xanax, Niravam), Buspiron (Buspar)
- **Beta Blockers**: Carvedilol (Coreg), Metoprolol (Lopressor)
- **Cholinergic Agonists**: Cevimeline (Evoxac)
- **Contraceptives**: Estrogen containing oral contraceptives
- **Hypnotics**: Eszopiclone (Lunesta)
- **Immunosuppressants**: Cyclosporine (Gengraf, Neoral), Sirolimus (Rapamune), Tacrolimus (Prograf, Hecoria)
- **Muscle Relaxants**: Carisoprodol (Soma)
- **Non-Drug**
- **Nonsteroidal Anti-Inflammatory Drugs (NSAIDs)**: Celecoxib (Celebrex), Diclofenac ( Cataflam), Flurbiprofen (Ocufem), Meloxicam (Mobic)
- **Opioids**: Buprenorphine (Butrans, Buprenex), Codeine, Oxycodone (Oxycontin), Oxycodone (CYP3A5), Oxycontin, Tramadol (Ultracet, Ultram)
- **Proton Pump Inhibitors**: Dexamethasone (Kapidex, Dexilant), Esomeprazole (Nexium), Lansoprazole (Prevacid), Omeprazole (Prilosec, Zegerid), Pantoprazole (Protonix), Rabeprazole (AcipHex)
- **Selective Serotonin Reuptake Inhibitors (SSRIs)**: Citalopram/Escitalopram (Celexa, Lexapro), Sertraline (Zoloft), Fluoxetine (Prozac), Paroxetine (Paxil)
- **Statins**: Atorvastatin (Lipitor, Caduet), Simvastatin (Zocor)
Benefits of the GeneMedication™ Test:

This simple genetic test, performed with an oral cheek swab, will help you and your doctor understand how your body will respond to medication and what medications will be most effective for you.

**Personalized Results**  
Understand what medications will work best for you and your genetic makeup with a personalized interactive report and mobile app.

**1-on-1 Consultation with Pharmacist**  
Review your GeneMedication™ test results with our licensed pharmacists, the medication experts.

**Improve Drug Regimens**  
Discover if current medications are working as safely and effectively as they should.

**Reduce Risks**  
Reduce the risk of harmful drug-to-drug interactions and adverse drug events.

**Improved Response from Medication**  
Learn what medications and dosages are most effective, improve recovery time and result in more accurate prescribing.

**Save Money**  
Effective drug therapy + speedy recovery = fewer doctor visits and less money spent on medical expenses including prescription medication.

Is a GeneMedication™ Test Right for You?

The GeneMedication™ test will provide an internal snapshot of your genetic roadmap. Learn what medications are the CORRECT ones for you and which medications you should AVOID based on how you metabolize them. The following questions can help identify if the GeneMedication™ test will benefit you:

1. Have you ever taken a medication and had to return to your doctor to get a different one because the first medication didn’t work?
2. Have you ever had an adverse reaction to a medication you have taken and had to discontinue taking it?
3. Have you ever taken an entire prescription and required a second prescription before your health condition improved?
4. Are you taking more than one medication for the same or multiple health conditions?
5. Are you currently taking Warfarin (Coumadin) or Clopidogrel (Plavix)?

If you answer yes to ANY of these questions, you may greatly benefit from a GeneMedication™ test!
SafeTRx Provides a Highly Personalized, Ongoing Analysis of Medication Safety for You and Your Family Members

- **Your GeneMedication™ test results are available on our mobile app for your pharmacist(s) + physician(s) to review.**

- **Instant analysis of total medication regimen safety.** Ongoing use of your genetic analysis results to quickly determine which drugs can cause side effects based on your GeneMedication™ test results.

- **Ability to review all current and future medications to see how you will respond based on your GeneMedication™ test results.**

- **Generate a report that provides your doctor an overview of all medications and associated side effects.**

- **Ability to store information in one convenient mobile app.**

- **SafeTRx is updated twice daily with any information on current or new medications.**
# How a PGX Test Identified Successful ADHD Treatment

## Overview
- An 11-year-old female diagnosed with ADHD was prescribed 3 different medications before finding the right one.
- A PGX test was performed after the first 2 prescriptions caused severe adverse reactions.
- The patient was a “poor metabolizer” of the liver enzyme, CYP2D6, that prescriptions 1 and 2 were metabolized by.
- The PGX test results revealed an alternative ADHD medication metabolized by a liver enzyme the patient was a “normal metabolizer” of, providing the RIGHT medication.
- Within four weeks, the patient showed dramatic improvements at school and without any side effects.

## Treatment Costs

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Strattera</th>
<th>Abilify</th>
<th>Vyvanse</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost</td>
<td>$85</td>
<td>$100</td>
<td>$90</td>
</tr>
<tr>
<td>Health Plan</td>
<td>$443</td>
<td>$1,082</td>
<td>$707</td>
</tr>
<tr>
<td>Wasted Cost</td>
<td>$528</td>
<td>$1,182</td>
<td></td>
</tr>
</tbody>
</table>

**Total to achieve desired therapeutic relief from the ADHD symptoms was approximately 12 weeks.**

*Total health plan savings is calculated by adding health plan costs from treatment 1 and treatment 2 minus cost of PGX test. Treatment costs are a combination of doctor visits and prescription costs paid by the patient and health plan.

## Conclusion
- The costs and adverse drug reactions associated with treatments 1 and 2 could have been avoided if the PGX test had been performed prior to beginning treatment for the ADHD symptoms.
- The PGX test results clearly identified that the first 2 drugs were not clinically effective and delayed therapeutic relief from symptoms by approximately 8 weeks.
- If doctors are able to prescribe the Right Medication, at the Right Dose, on the First Visit, health plans and patients will save significant time and money.
- It’s clear that a PGX test, while not predictive, can provide more accurate prescribing by doctors and is a powerful tool in helping control healthcare costs.
The process is simple and convenient for YOU!

1. Request your GeneMedication™ test kit and gain access to our secure Salus Genetics® online portal.

2. A GeneMedication™ test kit is shipped directly to you.

3. Remove each swab from its tube and rub vigorously inside of both cheeks. Place the swabs back inside their tubes then apply a barcode label to each. Put the tubes into the provided specimen bag. Return the bag to the GeneMedication™ box.

4. Seal your kit, and drop pre-paid box into the US Mail.

5. Receive email confirmation that your GeneMedication™ report is ready. Schedule your consultation call with a Salus Genetics pharmacist.

6. Review your test results with a Salus Genetics® pharmacist.

With the GeneMedication™ test you can identify the Right Medication, the Right Dose, the First Time.

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