GeneID

The Future Today

Focusing on Personalized Medicine

PHARMACOGENOMICS (PGx) TESTING

Accurate Diagnostics Using RT PCR

The PGx test is your one test for life. The test will cover your metabolic response to medications at all stages in life, and can be referred back to at any time regardless of your age or health status.

Pharmacogenomics is the analysis of how genes affect a person's response to drugs. Most drugs are broken down (metabolized) in the body by drug-metabolizing enzymes (DMEs). Specific genes code for these enzymes, and variations in these genes can cause significant differences to drug-metabolizing enzymes, drug transporters and drug targets.

As everyone has a unique genetic makeup, this can affect how you will respond or react to certain medications. A medication or dose that works for one person may be ineffective or cause harmful side effects in another. Through pharmacogenomic testing, individualized medicine treatment plans can be developed based on each patient's genetic makeup, to determine optimal drugs and dosages, and limit harmful side effects.

What are the potential benefits of PGx testing?

Using the results from PGx testing, health care providers can individualize drug therapy selection and dosages for patients based on their genetic makeup. Testing patients prior to beginning treatment may help determine their response to certain drug classes and help avoid drugs that may be ineffective or cause harmful side effects. For patients currently on treatment, PGx testing may identify new treatment options or identify why current treatments are not working.

Advantages of PGx testing may include

-Decreasing and potentially eliminating the need for a "trial and error" approach to find effective therapy and dosages

-Decreasing the number of adverse drug reactions a patient experiences

-Saving patients time and money on ineffective medications

-Decreasing the amount of time patients are on medication

-Improving patient quality of life by finding effect

What will the results from PGx tell me?

How you process different types of drugs

- Variations in genes influence how quickly or how thoroughly individuals metabolize specific drugs. Individuals may be classed as a poor, intermediate, normal or ultra-rapid metabolizer for certain drugs.
- More than 75% of people have variations in drug metabolism that fall outside of what is regarded as "normal" metabolizers. In some cases, these differences can cause significant side effects or mean the medication is ineffective. In severe cases, side effects may be life threatening.

Likelihood to respond to a given medication

- In a patient classified as a "poor" metabolizer, some drugs will not be processed effectively by the body, resulting in no response or minimal response which may require the selection of alternative medication
- In patients who are classified as an "ultra-rapid" metabolizer, the drug is processed and removed from the body rapidly. This may mean that the drug is less effective at the standard dose, requiring a higher dose to be effective.

Risk of an adverse drug response (side effects)

- In a patient classified as a "poor" metabolizer, drugs may be eliminated slowly and accumulate in the body, requiring a lower than normal dose to avoid adverse reactions.
- For patients who are classified as an "ultra-rapid" metabolizer, some drugs may be processed quickly leading to rapid onset of the drug's effect and increased side effects, requiring a reduction in the drug dosage to achieve the desired outcome.