Our genetic make-up helps to determine how our body will respond to and process (metabolize) medications and drugs. By evaluating an individual's genetic variation in specific genes we can determine if a medication will be effective or cause serious toxic side effects. This is a relatively new branch of precision medicine called pharmacogenomics or pharmacogenetics.

Several organizations (CPIC and PharmGKB) have been working to develop guidelines for when to do genetic testing and how to modify medication dosage when an individual carries a variant gene. However, there are many drug/gene pairs that do not yet have recommended guidelines so selecting a reliable laboratory is critical to getting useful information.

Also keep in mind that there are many factors that affect our response to medications. Some of these are intrinsic, meaning that they are factors that are inherently part of us or controlled by our body. Examples of these are age, gender, race, and genetics. Some factors that affect our response to drugs are extrinsic, meaning that they come from outside of our body. Examples of these are diet, nicotine or alcohol use, and other drugs that we take. So it is important to remember that a genetic test may still not give you the whole story.

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