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Personalized Medicine Corner

*What is personalized medicine?
How does it fit into my practice?*

Personalized medicine uses an individual's genetic information to guide decisions about preventing, diagnosing, and treating disease. There are significant inter-individual variations in drug response and disease progression that affect the likelihood for therapeutic effect and the risk for adverse drug effects. Clinicians often need to take a "trial-and-error" approach to treatment, which may contribute to poor outcomes, adverse drug events, drug interactions, and poor medication adherence.¹

Pharmacogenomics is one component of a personalized medicine approach that can help clinicians individualize drug therapy based on genetic variations to identify the most appropriate drug and dose for each patient. Prescribing information for 150 medications contains pharmacogenomic data, including drug exposure and response variability, risk for adverse events, genotype-specific dosing, and polymorphic drug targets.² Nearly 25% of outpatients are taking at least one of these drugs for the treatment of chronic conditions including depression, venous thromboembolism prophylaxis, pain management, and others.³ Research and scientific advancements have reached a point where personalized treatment strategies based on genomic information and other factors are used clinically to guide drug selection and dosing. For example, many UF Health clinicians are using pharmacogenomic testing to identify polymorphisms in drug metabolizing enzymes that guide antiplatelet selection after coronary interventions or dosing of thiopurines for oncology and gastrointestinal disorders.

However, fitting pharmacogenomics into the everyday practice of medicine remains a challenge for most clinicians. Questions about what test to order, how to interpret test results, and insurance reimbursement often prevent clinicians from ordering a test.⁴ Evidence is mounting, though, for the clinical benefits and utility of pharmacogenomic testing. These

developments, along with efforts of patients, clinicians, and researchers alike, are breaking down the barriers that health care providers face in using

Want to know more about what clinicians are doing at UF Health? See our patient and clinician resources at www.personalizedmedicine.ufhealth.org.

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