UF Health Personalized Medicine Program
***CYP2C19* PPI Provider Education Sheet**

Study Description

WHAT?

A randomized, open-label, comparative effectiveness clinical trial is being conducted through the UF Health Gastroenterology Clinics in Gainesville to compare genotype-supported vs. conventional treatment of GERD and dyspepsia.

WHO?

The study will enroll 120 patients, 60 of whom will be genotyped on enrollment and 60 patients who will be genotyped at the end of their active participation at 3 months. The study is seeking patients age 18 years and older with GERD or related symptoms who is either 1) being initiated on PPI therapy or 2) continues to have symptoms despite PPI therapy.

WHY?

All PPIs are metabolized by CYP2C19, and genetic variation in *CYP2C19* influences the pharmacokinetics of all PPIs to some extent. Several nonfunctional alleles (e.g., *CYP2C19**2 through **9*) reduce PPI clearance and increase PPI plasma concentrations. This may increase risk for adverse events. Conversely, the gain-of-function allele (*17) leads to increased PPI metabolism and reduced PPI plasma concentration. This may increase risk for treatment failure.

GENOTYPE FREQUENCY AND RECOMMENDATIONS:

CYP2C19 Phenotype (Genotype)	**Frequency**	**Clinical Recommendation**
Ultrarapid Metabolizer (**17/*17*) or Rapid (**1/*17*)	~5-45% of patients	Increase dose by 50% to 100%
Normal Metabolizer (**1/*1*)	~35-50% of patients	No change
Intermediate Metabolizer (e.g., **1/*2, *1/*3*) or Poor Metabolizer (e.g., *2/*2, *2/*3, *3/*3)	~20-60% of patients	Decrease dose by 25% to 50%

WHO TO CONTACT FOR QUESTIONS

Thank you! Your participation directly impact our ability to perform this research.