

PRESS RELEASE

For Immediate Release

MILLENNIUM PGTSM FACT SHEET

Millennium PGT is a laboratory developed pharmacogenetic test that analyzes clinically important genetic variations associated with the way patients may respond to many commonly prescribed medicines. The saliva-based test provides clinicians with objective information that may help them individualize medication treatment decisions.

Millennium PGT is paired with the Millennium Analysis of Patient Phenotype (MAPP®) Report, which provides clinicians with actionable information, based on a patient's own genetics, about their potential response to over 30 medications prescribed across four key therapeutic areas: pain, mental health, addiction and cardiovascular therapy. Together with PGT ConsultSM, a mobile application that provides evidence-based clinical decision support, these added services aide clinicians in better tailoring medications to their patient's unique genetics, and increase the potential for successful therapy.

Millennium PGT provides objective information based on a patient's own genetics to help clinicians prescribe the right medicine at the right dose for their patients. The he test may help clinicians avoid time consuming trial and error prescribing approaches with medications, and decrease the potential for adverse drug reactions.

Millennium PGT Expansion

Millennium PGT has expanded to include seven additional genes important in assessing patient response to medications commonly prescribed across four key therapeutic areas, including pain, mental health, addiction and cardiovascular therapy. In addition to the core offerings of CYP2D6, CYP2C19, CYP2B6, and UGT2B15, this expansion will significantly broaden Millennium's PGT menu to include CYP2C9, CYP3A4, CYP3A5, as well as VKORC1, COMT, MTHFR and OPRM1. Millennium PGT is paired with PGT Consult, a proprietary mobile application to support health care providers in optimizing patient treatment.

With this expansion, Millennium PGT now analyzes clinically relevant genetic variants for 11 genes encompassing multiple facets of medication response to help clinicians individualize medication decisions. Millennium PGT helps clinicians determine, based on genetics, which medications are more likely to work for an individual patient, while helping them to avoid prescribing those more likely to cause adverse reactions. Millennium PGT helps health care providers minimize trial and error prescribing; potentially shortening the time it takes for patients to feel better.

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Millennium PGT Gene Testing Menu

The new testing menu is organized by medical specialties, including pain, cardiovascular, addiction therapy and mental health. Clinicians can order tests for relevant drug-gene pairs for a specific therapeutic area, or for a specific gene based on clinical need and medical necessity.

PAIN

Drugs Targeted	Genes Evaluated
Carisoprodol	CYP2C19
Celecoxib	CYP2C9
Methadone	CYP2B6
Codeine, Hydrocodone, Oxycodone, Tramadol	CYP2D6
Fentanyl	CYP3A4, CYP3A5
Morphine	COMT
Fentanyl, Morphine	OPRM1

MENTAL HEALTH

Drugs Targeted	Genes Evaluated
Atomoxetine	CYP2D6
Aripiprazole, Haloperidol, Risperidone	CYP2D6
Paroxetine, Venlafaxine	CYP2D6
Citalopram, Escitalopram, Sertraline	CYP2C19
L-methylfolate	MTHFR
Amitriptyline, Clomipramine, Doxepin, Imipramine	CYP2C19, CYP2D6
Desipramine, Nortriptyline	CYP2D6
Diazepam	CYP2C19, UGT2B15
Lorazepam, Oxazepam	UGT2B15

CARDIOVASCULAR

Drugs Targeted	Genes Evaluated
Clopidogrel	CYP2C19
Warfarin	CYP2C9, VKORC1

ADDICTION

Drugs Targeted	Genes Evaluated
Methadone	CYP2B6
Naltrexone	OPRM1

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Benefits of Millennium PGT

- Simple non-invasive saliva specimen collection
- MAPP (Millennium Analysis of Patient Phenotype) Reports
 - Comprehensive, easy to read, user-friendly reports providing patient-specific, evidence based and clinically actionable results
 - Medication selection guide
 - Medication-specific information regarding genetic differences in how individuals react to certain medicines
 - Results assist with informed decision making
 - Potential medication-specific drug interactions related to inducers or inhibitors
- Millennium's expanded PGT offering is paired with the PGT Consult mobile app, which provides evidence-based clinical decision support for health care providers to help them optimize medication therapy for patients. This interactive tool:
 - Supplies patient-specific results directly from the MAPP Report
 - Explores the clinical impact of genetic variations
 - Individualizes information on potential clinical application of results
 - Identifies possible drug-drug interactions
 - Provides robust educational resources, including a primer on pharmacogenetics, information on gene-specific inducers and inhibitors, metabolism diagrams, generic-to-brand name list and more
- New guidelines and supporting literature to inform compilation of MAPP Reports
 - The latest scientific research and published clinical guidelines provided in an easy to read report
 - High-quality interpretation of scientific research from an in-house team of PhD and PharmD level experts
- Clinical support services
 - A dedicated support staff including toxicologists, clinical pharmacists and customer support representatives available for real-time discussions and guidance through a dedicated MAPP® Hotline.
 - Weekday hours are 5:00 a.m. – 9:00 p.m. Pacific Time
 - Weekend hours are 7:00 a.m. – 3:30 p.m. Pacific Time

How Millennium PGT Supports Patient Care

Millennium PGT may facilitate an individualized approach to treatment by helping a clinician to:

- Support the decision to continue or change a medication regimen
- Identify patients who may have higher risk for adverse effects with certain medications
- Minimize medication-related negative outcomes
- Identify patients who may be higher risk for drug interactions with certain medications
- Provide targeted therapy, thus avoiding sequential and ineffective medication trials
- Differentiate those patients who may be more or less likely to respond to certain medications

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- Identify the need for higher than typical doses to achieve efficacy
- Explain unexpected urine drug test (UDT) results

About Millennium Laboratories

Millennium Laboratories, a leader in the science of medication monitoring and pharmacogenetics, is transforming the way health care professionals monitor and manage their patients' medication therapy. Through the use of advanced technology, supported by research and education, Millennium helps practitioners personalize care for patients. Building on this strong foundation, Millennium aims to expand its impact by helping more people affected by chronic illnesses and dedicating itself to filling a crucial unmet need in health care. More information can be found at www.millenniumlabs.com.

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