# Gastrointestinal Health



#### Breakthrough Assessment of Bacteria, Yeast, Pathogens, Parasites and Biochemical Markers

- GI360<sup>™</sup> GI Microbiome Analysis by PCR
- Comprehensive Stool Analysis + Parasitology
- Microbiology Test



# BRIDGING THE GAP BETWEEN RESEARCH AND THE CLINICAL WORLD

Clinical microbiology plays a crucial role in individual and community health. Because most microbes living on or within the body are beneficial, distinguishing those that are diseaseproducing is a critical function of a clinical microbiology laboratory.

Combining advanced PCR & MALDI-TOF technology with traditional clinical microbiology to provide world-class diagnostic microbiology testing that helps you assess digestive and absorptive functions, detect pathogens or parasites and identify specific bacteria and yeast.

Through the use of advanced assays and technology, test results can help determine what microorganisms are present and which may be causing infection. Our painstaking approach can help you select the most appropriate antimicrobial therapy and the comprehensive nature of our testing represents real value for your patients and practice.

# GI360™ Stool Profiles, multiplex PCR 🛛 🛸



### Extensive Assessment of the Gastrointestinal Microbiome

- PCR Analysis for the Abundance and Diversity of Key Bacterial Populations of the GI Microbiome
- PCR Detection of Pathogenic Bacteria, Viruses and Parasites
- Comprehensive Parasitology by Microscopy

Introducing the GI360<sup>™</sup> Profile: an innovative, comprehensive and clinically-applicable stool profile, utilizing multiplex PCR molecular technology coupled with growth-based culture and ID by MALDI-TOF, sensitive biochemical assays and microscopy to detect and assess the status of pathogens, viruses, parasites and bacteria that may be contributing to acute or chronic gastrointestinal symptoms and disease.

#### **Microbiome Abundance and Diversity**

The GI360<sup>™</sup> Profile is a gut microbiota DNA analysis tool that identifies and characterizes the abundance and diversity of

- MALDI-TOF ID of Cultured Bacteria and Yeast
- Broad Range of Stool Chemistry Markers
- Standardized Susceptibility Testing of Isolated Bacteria and Yeast

more than 45 targeted analytes that peer-reviewed research has shown to contribute to dysbiosis and other chronic disease states.

The GI360<sup>™</sup> can identify the presence of pathogenic viruses, bacteria, and parasites using multiplexed, real-time PCR. Viruses are the primary cause of acute diarrhea, and the least commonly tested. The identification of pathogenic bacteria, viruses and parasites improves treatment strategies and patient outcomes.

# Stool Analysis Profiles and Test Components



## Gut Health Detect

	GI360™	Comprehensive Stool Analysis + Parasitology	Microbiology Test
GI Microbiome Diversity and Abundance; PCR	~		
Viruses, Pathogens and Parasites; PCR	~	<b>v</b>	
Expected/Beneficial Bacteria Culture: Including Bacteroides fragilis, Bifidobacteria, E. coli, Lactobacillus, Enterococcus, Clostridium spp.		V	<b>~</b>
Dysbiotic Bacteria Culture and ID: Including <i>Aeromonas,</i> Campylobacter, Plesiomonas, Salmonella, Shigella, Vibrio, Yersinia, Edwardsiella tarda	~	V	~
Commensal/Imbalanced Bacteria Culture and ID	~	V	<ul> <li>✓</li> </ul>
Yeast Culture and ID	~	V	<ul> <li>✓</li> </ul>
Pharmaceutical and Natural Agent Yeast/Bacterial Susceptibilities (performed when indicated)	~	V	<b>v</b>
Parasitology Identification Concentrate and Trichrome Stain	<ul> <li>✓</li> </ul>	V	
Giardia lamblia	<ul> <li>✓</li> </ul>	V	
Cryptosporidium	~	V	
Elastase	<ul> <li></li> </ul>	V	
Fat Stain	v	<b>v</b>	
Muscle and Vegetable Fibers	<ul> <li></li> </ul>	<b>v</b>	
Carbohydrates	~	✓	
Lysozyme	v	<ul> <li>✓</li> </ul>	
Calprotectin	~	✓	
Lactoferrin	<ul> <li></li> </ul>	<b>v</b>	
White Blood Cells (WBC)	~	✓	
Mucus	~	<ul> <li>✓</li> </ul>	
Secretory IgA	~	<ul> <li>✓</li> </ul>	
Short Chain Fatty Acids	~	<b>v</b>	
Red Blood Cells (RBC)	~	V	
pH	~	V	
Occult Blood	~	<ul> <li>✓</li> </ul>	
Beta-Glucuronidase	~		

\*Parasitology testing can include one-, two- or three-day collection, based on practitioner preference.

# GI360<sup>™</sup> Stool Profiles





**Gut Health** Detect

	GI360™	GI360™ ESSENTIALS	GI360™ MICROBIOME
GI Microbiome Diversity and Abundance; PCR	<ul> <li>✓</li> </ul>	<ul> <li>✓</li> </ul>	<ul> <li>✓</li> </ul>
Viruses, Pathogens and Parasites; PCR	✓	<ul> <li>✓</li> </ul>	
Expanded Parasitology; Microscopy	<ul> <li>✓</li> </ul>	<b>v</b>	
Bacterial and Fungal Culturomics w/ Direct Susceptibilities; MALDI-TOF MS	<b>v</b>	v	
Stool Chemistries	✓		
Beta-Glucuronidase	v		

#### Consider the GI360<sup>™</sup> Profiles for your patients that present with gastrointestinal complaints and chronic systemic conditions:

Gastrointestinal Symptoms
Autoimmune Disease
IBD/IBS
Inflammation

- Food Sensitivities Nutritional Deficiencies Joint Pain Chronic or Acute Diarrhea
- **Bloody Stool Mucosal Barrier Dysfunction Abdominal Pain** Fever and Vomiting

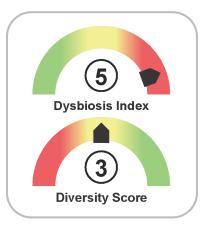
#### **The Dysbiosis and Diversity Index**

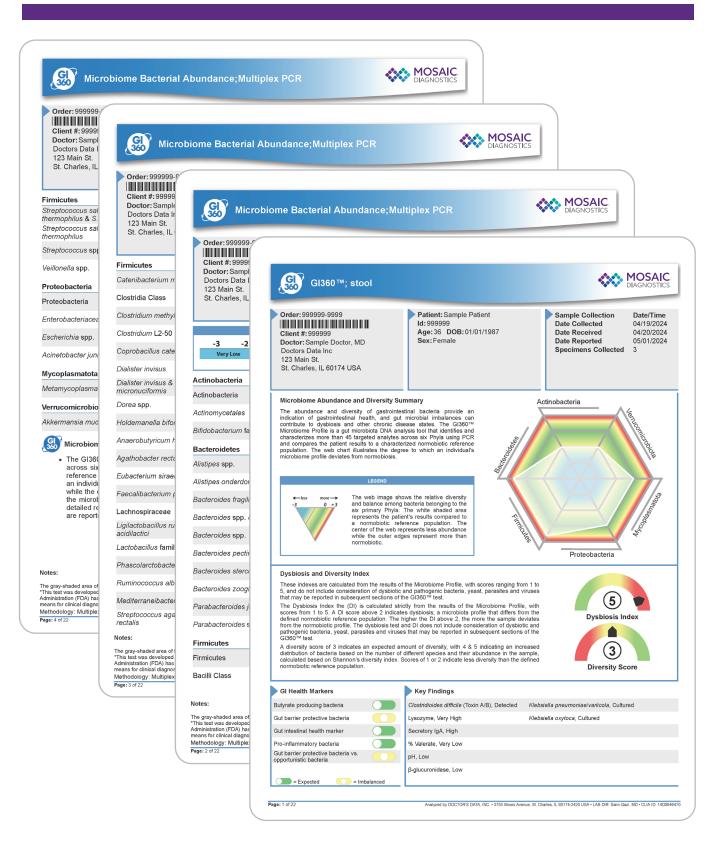
These indexes are calculated from the results of the Microbiome Profile, with scores ranging from 1 to 5, and do not include consideration of dysbiotic and pathogenic bacteria, yeast, parasites and viruses that may be reported in subsequent sections of the GI360<sup>™</sup> test.

A dysbiosis score above 2 indicates dysbiosis; a microbiota profile that differs from the defined normobiotic reference population. The higher the score above 2, the more the sample deviates from the normobiotic profile.

A diversity score of 3 indicates an expected amount of diversity, with 4 & 5 indicating an increased distribution of bacteria based on the number of different species and their abundance in the sample, calculated based on Shannon's diversity index. Scores of 1 or 2 indicate less diversity than the defined normobiotic reference population.

This expanded view of clinically significant bacteria offers actionable data to the practitioner, particularly in combination with the complementary methodologies employed in the GI360<sup>™</sup> profile.





For more information about this advanced profile, including research publications, a detailed resource guide, abstracts, posters, collection instructions, videos and presentations,

# visit mosaicdx.com

# Comprehensive Stool Analysis + Parasitology



Gastrointestinal complaints are among the most common in medical care, with symptoms ranging from diarrhea, constipation, bloating and indigestion to irritable bowel syndrome and malabsorption. This comprehensive panel is the starting point for pinpointing the causes of gastrointestinal symptoms and chronic conditions, and measures key markers of digestive and absorptive function and inflammation, all to guide targeted treatment selection.

DRDER: 999999-9999 ATIENT: Sample Patient D: 999999 SEX: Male AGE: 28 DOB: 00/00/1995	CLIENT #: 999999 DOCTOR: Sample Doctor, MD Doctors Data Inc 123 Main St. St. Charles, IL 60174 USA	ANALYSIS WITH PARASITOLOGY DL Parasitology; Microsco	AGNOSTICS	
Protozoa	Result			
Balantidium coli	Not Detected			
Blastocystis spp.	Not Detected			
Chilomastix mesnili	Not Detected	(		~~
Dientamoeba fragilis	Not Detected	ORDER: 999999-9999 PATIENT: Sample Patient	CLIENT #: 999999 DOCTOR: Sample Doctor, MD	100 A
Endolimax nana	Not Detected	ID: 999999 SEX: Male	Doctors Data Inc 123 Main St.	Comprehensive Stool MOSA
Entamoeba coli	Not Detected	AGE: 28	St. Charles, IL 60174 USA	Comprehensive Stool Analysis + Parasitolog
Entamoeba hartmanni	Not Detected	DOB: 00/00/1995		Comprehensive Stoor Analysis + Parasitolog
Entamoeba histolytica/Entamoel	ba dispar Not Detected		BACTERIOLOGY CULTURE	
Entamoeba polecki	Not Detected	Expected/Beneficial flora	Commensal (Imbalanced) flora	Dysbiotic flora
Enteromonas hominis	Not Detected	4+ Bacteroides family	1+ Klebsiella/Raoultella complex	3+ Enterobacter cloacae complex
Giardia duodenalis	Not Detected	4+ Bifidobacterium family	1+ Citrobacter freundii complex	
lodamoeba bütschlii	Not Detected	3+ Escherichia coli		
Isospora belli	Not Detected	3+ Lactobacillus family		
Pentatrichomonas hominis	Not Detected	3+ Enterococcus family		
Retortamonas intestinalis	Not Detected	3+ Clostridium family		
Nematodes - Roundworms				
Ascaris lumbricoides	Not Detected			
Capillaria hepatica	Not Detected	NG = No Growth		
Capillaria philippinensis	Not Detected		BACTERIA INFORMATION	
Enterobius vermicularis	Not Detected	Expected / Beneficial bacteria make	up a significant portion of the total microflora in a heal	thy & balanced GI tract. These beneficial bacteria have ma
Strongyloides stercoralis	Not Detected	and anti-inflammatory factors.		esting proteins and carbohydrates, and propagating anti-tum
Trichuris trichiura	Not Detected	Absence of clostridia or over abundance	e relative to other expected/beneficial flora indicates bac	in the context of balance with other expected/beneficial flor sterial imbalance. If C. difficile associated disease is suspected
Hookworm	Not Detected		results from the GI Pathogens PCR section of this report re-usually neither pathogenic nor beneficial to the host G	t. I tract. Imbalances can occur when there are insufficient leve
Cestodes - Tapeworms		of beneficial bacteria and increased lev	els of commensal bacteria. Certain commensal bacteria a	are reported as dysbiotic at higher levels. I cause disease in the GI tract. They can be present due to
Diphyllobothrium latum	Not Detected	number of factors including: consumpti	on of contaminated water or food, exposure to chemicals	iomonas, Salmonella, Shigella, Vibrio, Yersinia, & Edwardsie
Dipylidium caninum	Not Detected	tarda have been specifically tested for a	and found absent unless reported.	iononas, Samoneila, Shigelia, Vibrio, Tersinia, & Edwardsk
Hymenolepis diminuta	Not Detected		YEAST CULTURE	
Hymenolepis nana	Not Detected	Normal flora	Dysbiotic flo	ora
Taenia	Not Detected	1+ Candida parapsilosis		
raema	Not Detected			
Comments:	SPECIMEN DATA			MALOLYO
Date Collected: 08/25/2023 Date Received: 08/28/2023	Specimens		YEAST INFORMATION	
Date Reported: 09/05/2023 Methodology: Microscopy	DRESS: 3755 Illinois Avenue, St. Charles, IL 60174-2420 •	benign. Recent studies, however, show suggest that yeast colonization delays	v that high levels of yeast colonization is associated with healing of inflammatory lesions and that inflammation pro l colonization and this colonization promotes further infla	ponent of the resident microbiota. Their presence is genera several inflammatory diseases of the GI tract. Animal mode protes colonization. These effects may create a cycle in whi mmation. Consideration of clinical intervention for yeast shou
			SPECIMEN DATA	
		Comments: Date Collected: 08/25/2023 Date Received: 08/28/2023 Date Reported: 09/05/2023 Methodory: Culture and ident	Specimens Collecter	

#### Bacteria, Yeast and Parasites

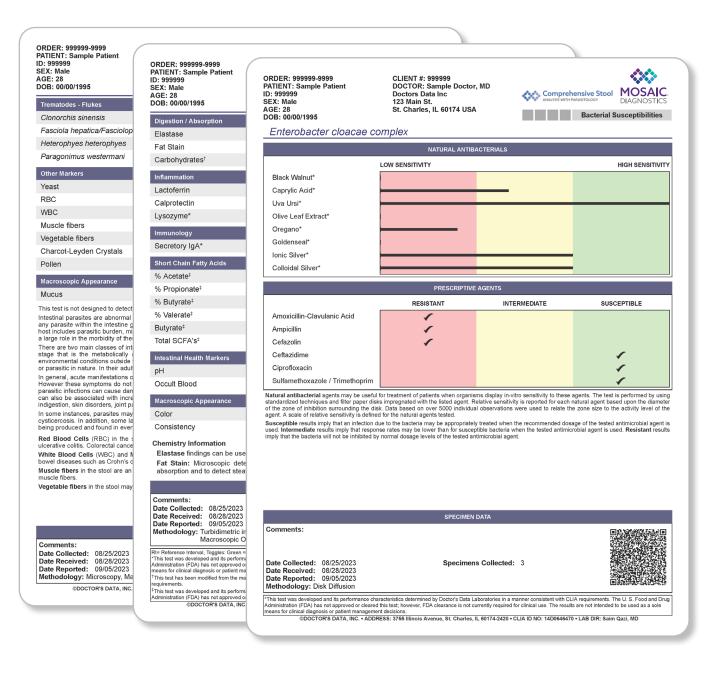
The Comprehensive Stool Analysis + Parasitology utilizes comprehensive bacteriology and yeast cultures to identify the presence of beneficial flora, imbalanced flora including Clostridium species, and dysbiotic flora, as well as the detection of infectious pathogens and parasites by PCR and other gold standard methods. Antimicrobial susceptibility testing to prescriptive and natural agents is also performed for appropriate cultured bacterial and fungal species at no additional charge.

#### **Digestion and Absorption**

For insight into degenerative diseases, compromised immune status or nutritional deficiencies, this comprehensive panel also evaluates the efficiency of digestion and absorption by measuring fecal levels of elastase, an indicator of pancreatic exocrine sufficiency, as well as fat, carbohydrates, and muscle and vegetable fibers.

#### Inflammation

Specific inflammatory markers such as calprotectin, lactoferrin, and lysozyme can assist in differentiating between irritable bowel disease (IBD) and irritable bowel syndrome (IBS).





Certified by these prestigious organizations:



#### Visit MosaicDX.com for more resources

(800)288-0383 | customerservice@mosaicdx.com 8400 W 110th Street, Suite 500, Overland Park, KS 66210



Provided with permission from Doctor's Data, Inc. All rights reserved