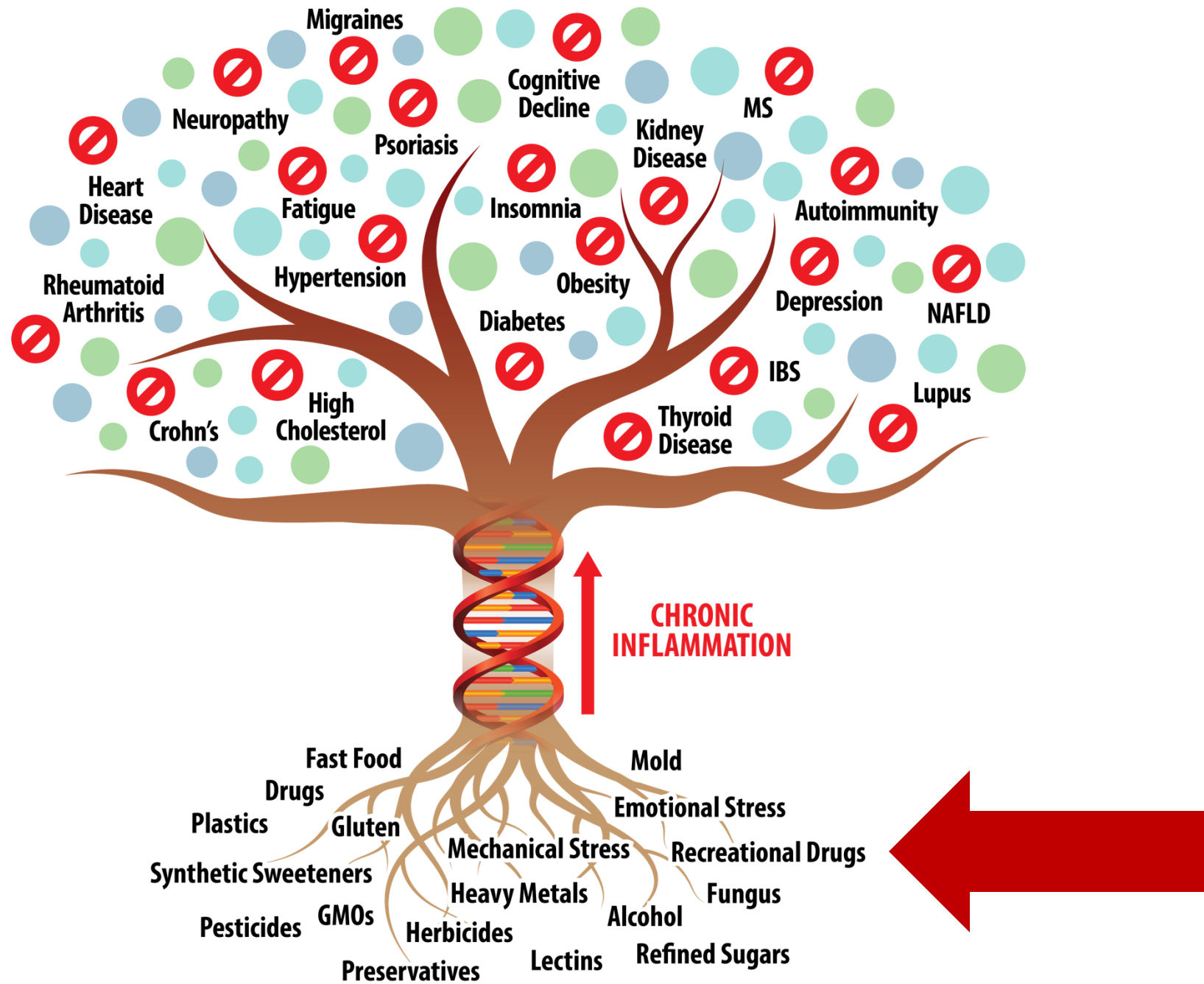


Casual Friday Series

# Stool Test Applications

A BIOGENETIX CLINICAL PRESENTATION  
[biogenetix.com](http://biogenetix.com)





## 5 Most Commonly Recommended Tests

**Biogenetix  
General  
Screen**

**Genova Dx  
GI Effects**

**DUTCH  
Complete**

**Vibrant  
Wellness  
Total Tox**

**Infinite  
Allergy Labs  
FAST88**



## 5 Most Commonly Recommended Tests

**Biogenetix  
General  
Screen**

**Genova Dx  
GI Effects**

**DUTCH  
Complete**

**Vibrant  
Wellness  
Total Tox**

**Infinite  
Allergy Labs  
FAST88**





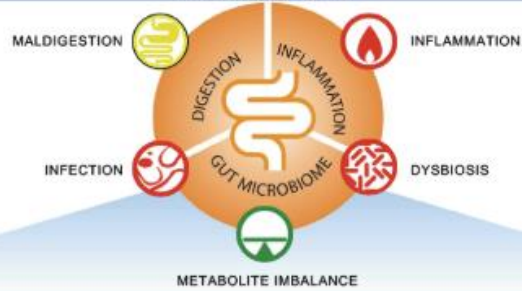
----> [EvexiaDiagnostics.com](http://EvexiaDiagnostics.com)



2200 GI Effects™ Comprehensive Profile - Stool

Powered by Genova AI

Results Overview



Functional Imbalance Scores

Key <2 : Low Need for Support   2-3 : Optional Need for Support   4-6 : Moderate Need for Support   7-10 : High Need for Support

	Need for Digestive Support	Need for Inflammation Modulation	Need for Microbiome Support	Need for Prebiotic Support	Antimicrobial Support
	MALDIGESTION	INFLAMMATION	DYSBIOSIS	METABOLIC IMBALANCE	
	5	10	10	0	
<b>Biomarkers</b>	Pancreatic Elastase ▾ Products of Protein Breakdown ● Fecal Fats ●	Calprotectin ▲ Eosinophil Protein X ▲ Secretory IgA ● Occult Blood ●	IAD/Methane Score ▲ PP Bacteria/Yeast ▲ Reference Variance ● Total Abundance ▲	Total SCFA's ● n-Butyrate Conc. ▲ SCFA (%) ● Beta-glucuronidase ●	Parasitology ● PP Bacteria ● Total Abundance ● Pathogenic Bacteria ●
<b>Flags</b>	• Digestive Enzymes • Reduce HCl	• Elimination Diet/ Food Sensitivity Testing	• Pre-/Probiotics • Increase Dietary Fiber	• Pre-/Probiotics • Increase Dietary Fiber	• Antibiotics (if warranted)



----> [GDX.com](http://GDX.com)



Biogenetix™



- Clinical Information
- Patient Information
- Microbiomix™ Module
- Test Preparation
- Support Materials



**The GI Effects Stool Profiles** are a suite of advanced stool tests that provide immediate, actionable clinical information for the management of gastrointestinal health. Utilizing cutting-edge technologies and biomarkers, these profiles offer valuable insight into digestive function, intestinal inflammation, and the intestinal microbiome. The overview pages make results interpretation quicker and easier, to prioritize treatment and assess microbiome status.

The GI Effects Stool Profiles can reveal important information about the root cause of many common gastrointestinal symptoms and non-GI conditions including:

----> [GDX.com](https://www.gdx.com)





The GI Effects Stool Profiles can reveal important information about the root cause of many common gastrointestinal symptoms and non-GI conditions including:

- Gas
- Bloating
- Indigestion/ reflux
- Abdominal pain/ cramps
- Diarrhea
- Constipation
- Inflammatory Bowel Disease (IBD) [1,2]
- Irritable Bowel Syndrome (IBS) [3,4]
- Atopic dermatitis/ eczema [5,6]
- Allergies [5]
- Autoimmune diseases [7,8]
- Mood disorders (depression) [9,10]
- Joint aches [11,12]
- Diabetes [13,14,15]
- Weight issues [15,16,17,18]

The health of the entire body is dependent on a healthy gut and gut microbiome. Gut microbes are codependent with one another and with their human host, and the health of one affects the other. A sizeable volume of research associates a dysbiotic, or imbalanced gut microbiome with **multiple disease states both within and outside of the GI tract**. [19,20,21] The diverse metabolic activities of the microbiome ultimately impact the human host, and the activities of the human host ultimately affect the health of their microbiome.

----> [GDX.com](http://GDX.com)







### Additional Biomarkers Available:

- *Campylobacter*
- *Clostridium difficile* (not available for patients <2 years old, see [An Updated Review of Clostridium difficile Treatment in Pediatrics](#))
- Shiga Toxin *Escherichia coli*
- *Helicobacter pylori*
- Fecal Lactoferrin
- Macroscopic Exam for Worms
- Zonulin Family Peptide
- KOH Preparation for Yeast

----> [GDX.com](http://GDX.com)



63 yo female  
 HA  
 No meds.

Functional Imbalance Scores					
Key <span style="border: 1px solid green; border-radius: 50%; padding: 2px;">&lt; 2</span> : Low Need for Support <span style="border: 1px solid gray; border-radius: 50%; padding: 2px;">2-3</span> : Optional Need for Support <span style="border: 1px solid yellow; border-radius: 50%; padding: 2px;">4-6</span> : Moderate Need for Support <span style="border: 1px solid red; border-radius: 50%; padding: 2px;">7-10</span> : High Need for Support					
	Need for Digestive Support	Need for Inflammation Modulation	Need for Microbiome Support	Need for Prebiotic Support	Need for Antimicrobial Support
	MALDIGESTION	INFLAMMATION	DYSBIOSIS	METABOLIC IMBALANCE	INFECTION
	<span style="border: 1px solid green; border-radius: 50%; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center; margin: 0 auto;">0</span>	<span style="border: 1px solid green; border-radius: 50%; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center; margin: 0 auto;">0</span>	<span style="border: 1px solid red; border-radius: 50%; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center; margin: 0 auto;">10</span>	<span style="border: 1px solid yellow; border-radius: 50%; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center; margin: 0 auto;">5</span>	<span style="border: 1px solid red; border-radius: 50%; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center; margin: 0 auto;">9</span>
Biomarkers	Pancreatic Elastase ● Products of Protein Breakdown ● Fecal Fats ●	Calprotectin ● Eosinophil Protein X ● Secretory IgA ● Occult Blood ●	PP Bacteria/Yeast ▲ Reference Variance ▲ Total Abundance ▲ IAD/Methane Score ●	Total SCFA's ▼ n-Butyrate Conc. ▼ SCFA (%) ● Beta-glucuronidase ●	PP Bacteria/Yeast ▲ Parasitic Infection ▲ Total Abundance ▲ Pathogenic Bacteria ●
Therapeutic Support Options	<ul style="list-style-type: none"> <li>• Digestive Enzymes</li> <li>• Betaine HCl</li> <li>• Bile Salts</li> <li>• Apple Cider Vinegar</li> <li>• Mindful Eating Habits</li> <li>• Digestive Bitters</li> </ul>	<ul style="list-style-type: none"> <li>• Elimination Diet/ Food Sensitivity Testing</li> <li>• Mucosa Support: Slippery Elm, Althea, Aloe, DGL, etc.</li> <li>• Zinc Carnosine</li> <li>• L-Glutamine</li> <li>• Quercetin</li> <li>• Turmeric</li> <li>• Omega-3's</li> <li>• GI Referral (If Calpro is Elevated)</li> </ul>	<ul style="list-style-type: none"> <li>• Pre-/Probiotics</li> <li>• Increase Dietary Fiber Intake</li> <li>• Consider SIBO Testing</li> <li>• Increase Resistant Starches</li> <li>• Increase Fermented Foods</li> <li>• Meal Timing</li> </ul>	<ul style="list-style-type: none"> <li>• Pre-/Probiotics</li> <li>• Increased Dietary Fiber Intake</li> <li>• Increase Resistant Starches</li> <li>• Increase Fermented Foods</li> <li>• Calcium D-Glucarate (for high beta-glucuronidase)</li> </ul>	<ul style="list-style-type: none"> <li>• Antibiotics (if warranted)</li> <li>• Antimicrobial Herbal Therapy</li> <li>• Antiparasitic Herbal Therapy (if warranted)</li> <li>• <i>Saccharomyces boulardii</i></li> </ul>



63 yo female  
HA  
No meds.

### Additional Bacteria

*Salmonella spp.*

NG

*Shigella spp.*

NG

*alpha haemolytic Streptococcus*

4+ NP

*Klebsiella oxytoca*

4+ PP

*Klebsiella pneumoniae*

4+ PP

*gamma haemolytic Streptococcus*

4+ NP

*Bacillus species*

1+ NP

*Pseudomonas aeruginosa*

4+ PP

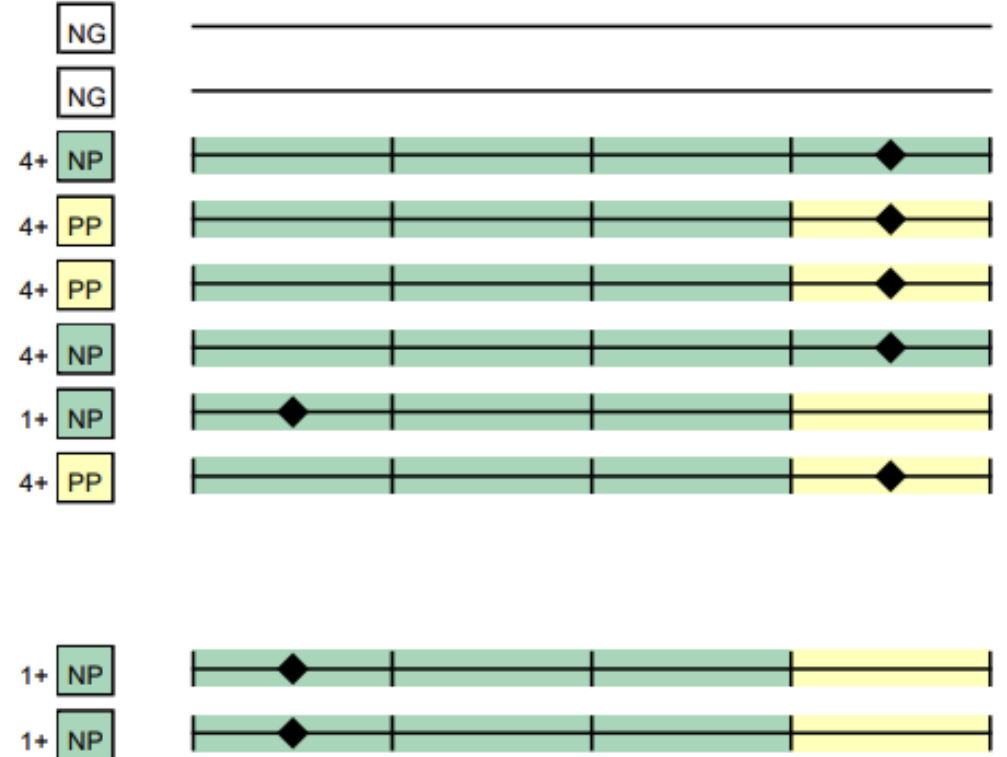
### Mycology (Culture)

*Rhodotorula species*

1+ NP

*Yeast, not Candida albicans*

1+ NP



▶ Emerg (Tehran). 2016 Nov;4(4):171–183.

## **Gastrointestinal Headache; a Narrative Review**

[Majid T Noghani](#)<sup>1</sup>, [Hossein Rezaeizadeh](#)<sup>2</sup>, [Sayed Mohammad Baqer Fazljoo](#)<sup>3</sup>, [Mansoor Keshavarz](#)<sup>2,4,\*</sup>

▶ [Author information](#) ▶ [Article notes](#) ▶ [Copyright and License information](#)

PMCID: PMC5007907 PMID: [27800536](#)

### **Abstract**

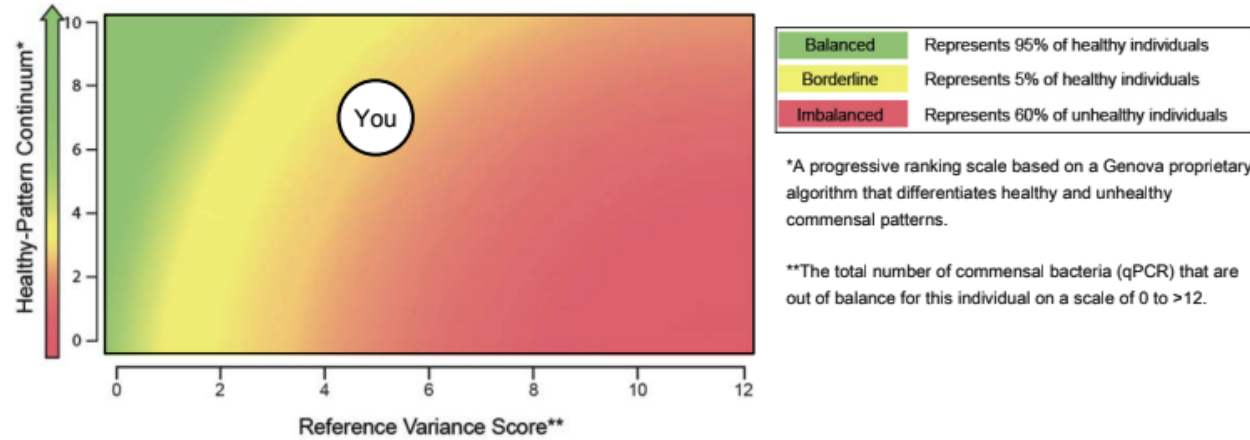
---

There are studies reporting primary headaches to be associated with gastrointestinal disorders, and some report resolution of headache following the treatment of the associated gastrointestinal disorder. Headache disorders are classified by The International Headache Society as primary or secondary; however, among the secondary headaches, those attributed to gastrointestinal disorders are not appreciated. Therefore, we aimed to review the literature to provide evidence for headaches, which originate from the gastrointestinal

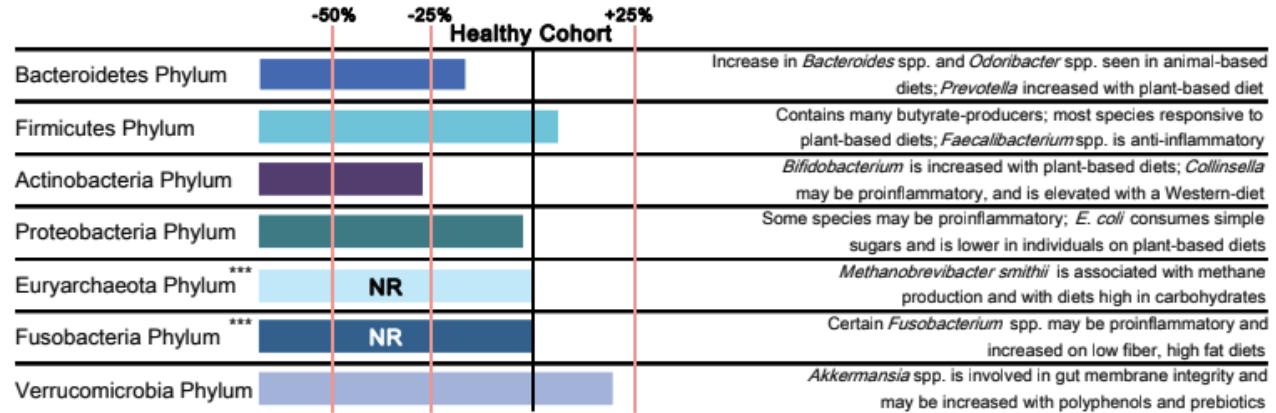
<https://pmc.ncbi.nlm.nih.gov/articles/PMC5007907/>



## Commensal Balance



## Relative Commensal Abundance

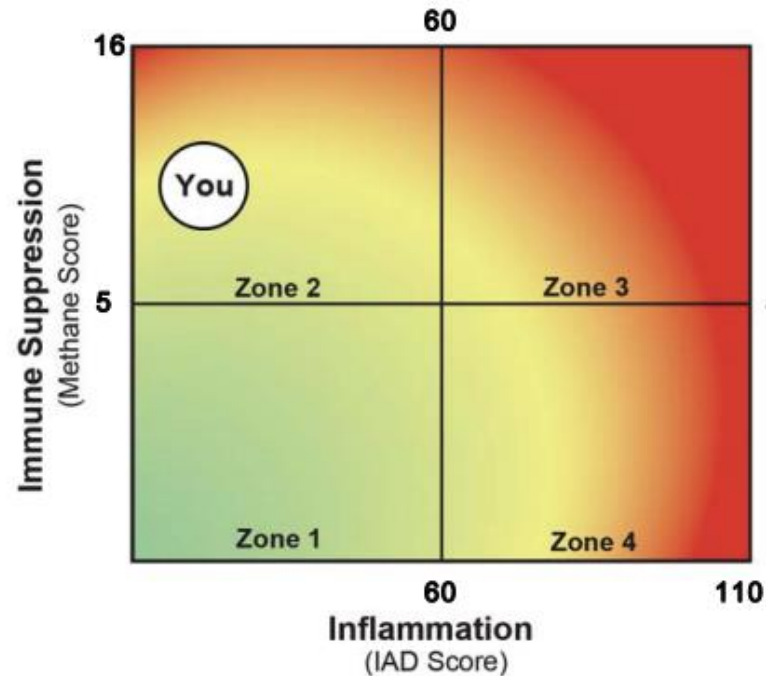
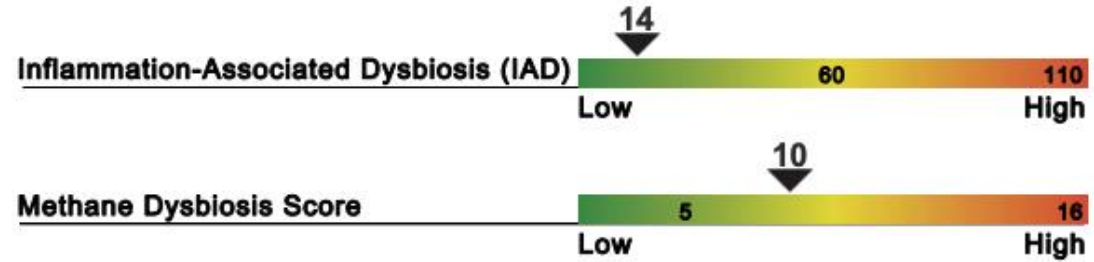
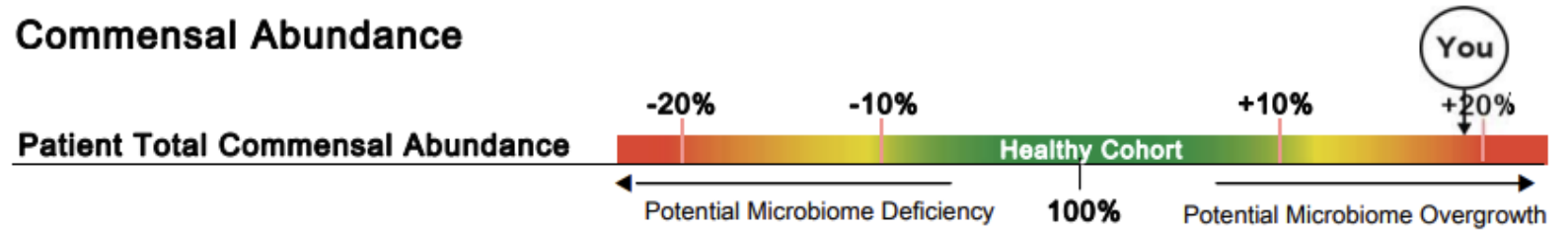


32 yo male  
 Crohn's  
 Psoriasis  
 Biologics  
 Itching  
 Weight loss

Functional Imbalance Scores					
Key <span style="border: 1px solid green; border-radius: 50%; padding: 2px;">&lt; 2</span> : Low Need for Support <span style="border: 1px solid gray; border-radius: 50%; padding: 2px;">2-3</span> : Optional Need for Support <span style="border: 1px solid yellow; border-radius: 50%; padding: 2px;">4-6</span> : Moderate Need for Support <span style="border: 1px solid red; border-radius: 50%; padding: 2px;">7-10</span> : High Need for Support					
	Need for Digestive Support	Need for Inflammation Modulation	Need for Microbiome Support	Need for Prebiotic Support	Need for Antimicrobial Support
	MALDIGESTION	INFLAMMATION	DYSBIOSIS	METABOLIC IMBALANCE	INFECTION
	<span style="border: 1px solid yellow; border-radius: 50%; padding: 10px; font-size: 24px;">4</span>	<span style="border: 1px solid red; border-radius: 50%; padding: 10px; font-size: 24px;">10</span>	<span style="border: 1px solid red; border-radius: 50%; padding: 10px; font-size: 24px;">10</span>	<span style="border: 1px solid green; border-radius: 50%; padding: 10px; font-size: 24px;">0</span>	<span style="border: 1px solid green; border-radius: 50%; padding: 10px; font-size: 24px;">0</span>
<b>Biomarkers</b>	Products of Protein Breakdown <span style="color: green;">▲</span> Pancreatic Elastase <span style="color: green;">●</span> Fecal Fats <span style="color: green;">●</span>	Calprotectin <span style="color: red;">▲</span> Eosinophil Protein X <span style="color: green;">●</span> Secretory IgA <span style="color: green;">●</span> Occult Blood <span style="color: green;">●</span>	Reference Variance <span style="color: red;">▲</span> IAD/Methane Score <span style="color: yellow;">▲</span> Total Abundance <span style="color: yellow;">▲</span> PP Bacteria/Yeast <span style="color: green;">●</span>	Beta-glucuronidase <span style="color: yellow;">▲</span> Total SCFA's <span style="color: green;">●</span> n-Butyrate Conc. <span style="color: green;">●</span> SCFA (%) <span style="color: green;">●</span>	Total Abundance <span style="color: yellow;">▲</span> Parasitic Infection <span style="color: green;">●</span> PP Bacteria/Yeast <span style="color: green;">●</span> Pathogenic Bacteria N/A
<b>Therapeutic Support Options</b>	<ul style="list-style-type: none"> <li>• Digestive Enzymes</li> <li>• Betaine HCl</li> <li>• Bile Salts</li> <li>• Apple Cider Vinegar</li> <li>• Mindful Eating Habits</li> <li>• Digestive Bitters</li> </ul>	<ul style="list-style-type: none"> <li>• Elimination Diet/ Food Sensitivity Testing</li> <li>• Mucosa Support: Slippery Elm, Althea, Aloe, DGL, etc.</li> <li>• Zinc Carnosine</li> <li>• L-Glutamine</li> <li>• Quercetin</li> <li>• Turmeric</li> <li>• Omega-3's</li> <li>• GI Referral (If Calpro is Elevated)</li> </ul>	<ul style="list-style-type: none"> <li>• Pre-/Probiotics</li> <li>• Increase Dietary Fiber Intake</li> <li>• Consider SIBO Testing</li> <li>• Increase Resistant Starches</li> <li>• Increase Fermented Foods</li> <li>• Meal Timing</li> </ul>	<ul style="list-style-type: none"> <li>• Pre-/Probiotics</li> <li>• Increased Dietary Fiber Intake</li> <li>• Increase Resistant Starches</li> <li>• Increase Fermented Foods</li> <li>• Calcium D-Glucarate (for high beta-glucuronidase)</li> </ul>	<ul style="list-style-type: none"> <li>• Antibiotics (if warranted)</li> <li>• Antimicrobial Herbal Therapy</li> <li>• Antiparasitic Herbal Therapy (if warranted)</li> <li>• <i>Saccharomyces boulardii</i></li> </ul>

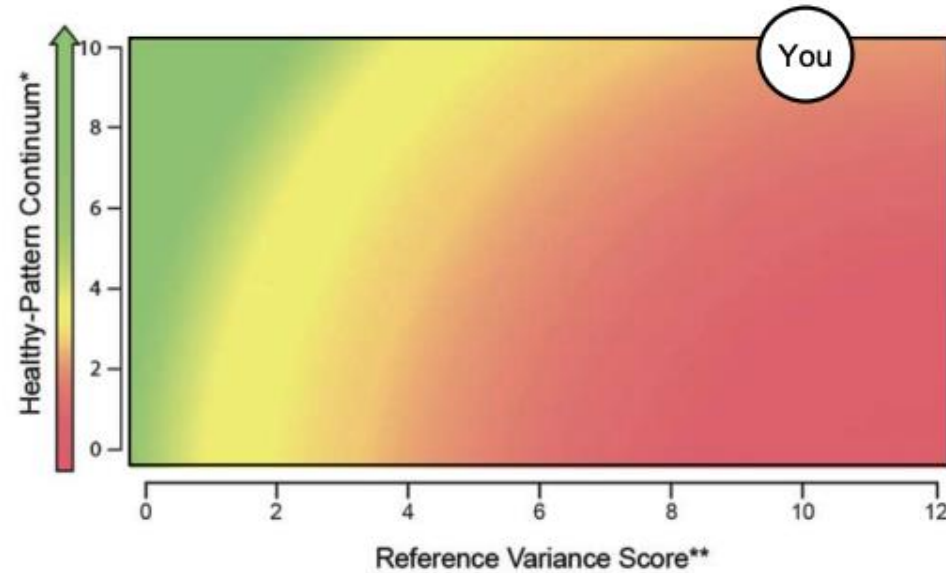
32 yo male  
 Crohn's  
 Psoriasis  
 Biologics  
 Itching  
 Weight loss

### Commensal Abundance



32 yo male  
 Crohn's  
 Psoriasis  
 Biologics  
 Itching  
 Weight loss

## Commensal Balance

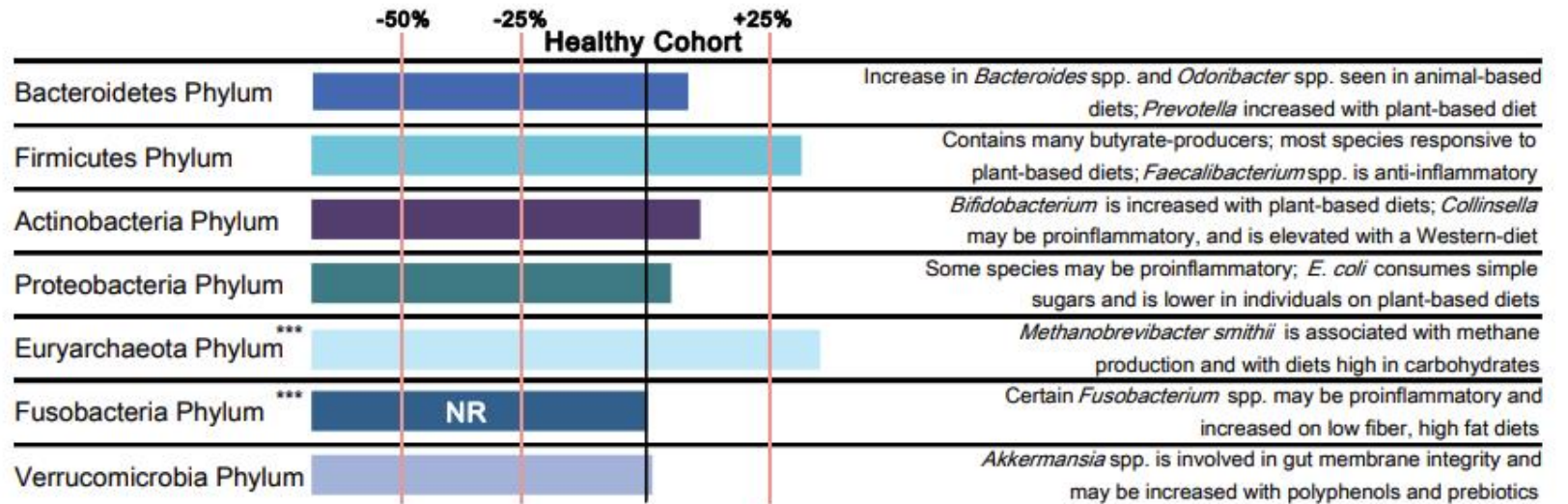


Balanced	Represents 95% of healthy individuals
Borderline	Represents 5% of healthy individuals
Imbalanced	Represents 60% of unhealthy individuals

\*A progressive ranking scale based on a Genova proprietary algorithm that differentiates healthy and unhealthy commensal patterns.

\*\*The total number of commensal bacteria (qPCR) that are out of balance for this individual on a scale of 0 to >12.

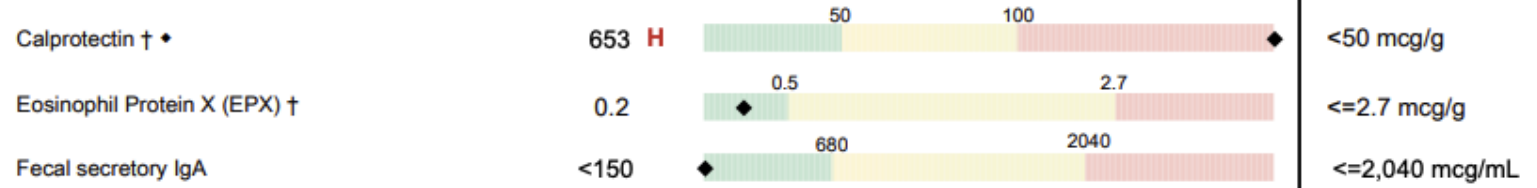
## Relative Commensal Abundance





32 yo male  
 Crohn's  
 Psoriasis  
 Biologics  
 Itching  
 Weight loss

### Inflammation and Immunology



### Zonulin Family Peptide

<i>Methodology: EIA</i>	<b>Result</b>	<b>Reference Range</b>	<b>Zonulin Family Peptide</b>
Zonulin Family Peptide, Stool	56.5	22.3-161.1 ng/mL	<p>This test is for research use only. Genova will not provide support on interpreting the test results. This test does not detect zonulin.<sup>1</sup> The Scheffler paper suggests that the IDK kit may detect a zonulin family peptide, such as properdin. Genova's unpublished data demonstrated that the current IDK kit results were associated with stool inflammation biomarkers and an inflammation-associated dysbiosis profile.</p> <p>The performance characteristics of Zonulin Family Peptide have been verified by Genova Diagnostics, Inc. The assay has not been cleared by the U.S. Food and Drug Administration.</p>



32 yo male  
 Crohn's  
 Psoriasis  
 Biologics  
 Itching  
 Weight loss

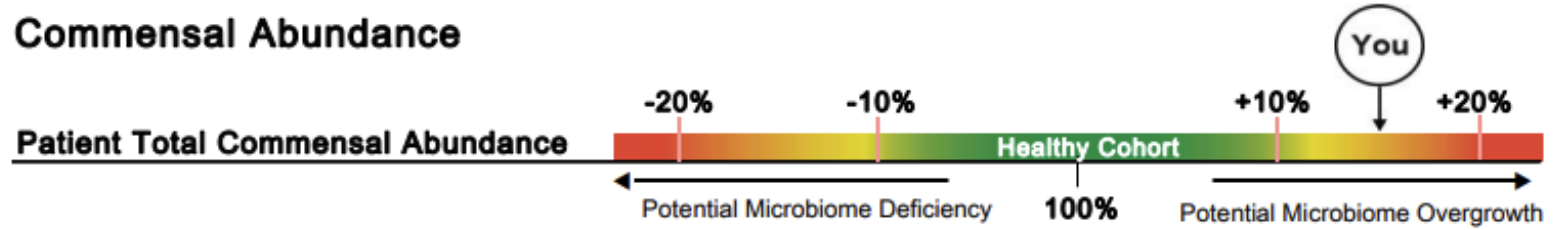
Group	Allergens	ALLERGY		SENSITIVITY				
		IgE Results (U/mL)	IgE Low Range (U/mL)	IgG4 Results (U/mL)	IgG4 Low Range (U/mL)	IgG Results (U/mL)	IgG Low Range (U/mL)	C3 b/d Results
Beans, Legumes, Nuts, Seeds	Almond	0.69	=0.65	0.56	=0.75	13.55	=15.70	Not Detected
	Bean, Common Mix*	0.53	=0.65	1.34	=0.65	13.55	=9.70	Not Detected
	Brazil Nut	<0.50	=0.65	<0.50	=0.65	13.55	=6.00	Not Detected
	Cashew	<0.50	=0.65	<0.50	=0.65	9.71	=6.40	Not Detected
	Cotton Seed	<0.50	=0.65	<0.50	=0.65	8.39	=6.00	Not Detected
	Flax	0.66	=0.65	<0.50	=0.65	12.77	=6.00	Not Detected
	Hazelnut	<0.50	=0.65	<0.50	=0.65	14.52	=7.20	Not Detected
	Mustard Seed	0.76	=0.65	<0.50	=0.65	28.36	=6.00	Detected
	Pea, Green	<0.50	=0.65	<0.50	=0.65	13.26	=6.00	Not Detected
	Peanut	<0.50	=0.65	<0.50	=0.65	11.20	=6.00	Not Detected
	Pecan Nut	<0.50	=0.65	<0.50	=0.65	39.45	=6.00	Detected
	Sesame	0.52	=0.65	<0.50	=0.65	20.97	=8.70	Not Detected
	Soybean	0.73	=1.00	<0.50	=1.00	10.40	=6.00	Not Detected
	Walnut, English	0.76	=0.65	0.99	=0.65	84.57	=17.20	Detected
Dairy, Meat, Poultry	Beef	0.80	=0.65	<0.50	=0.65	11.60	=6.00	Not Detected
	Casein	<0.50	=0.65	<0.50	=0.65	15.11	=17.00	Not Detected
	Chicken	<0.50	=0.65	<0.50	=0.65	4.82	=6.00	Not Detected
	Egg White, Chicken	<0.50	=0.65	7.67	=2.00	28.65	=11.60	Not Detected
	Egg Yolk, Chicken	0.56	=0.65	4.20	=1.50	21.92	=9.00	Detected
	Lamb	<0.50	=0.65	<0.50	=0.65	5.26	=6.00	Not Detected
	Milk, Cow	<0.50	=0.65	<0.50	=1.00	23.84	=20.00	Not Detected
	Milk, Goat	<0.50	=0.65	<0.50	=0.65	<2.00	=6.00	Not Detected
	Pork	<0.50	=0.65	<0.50	=0.65	5.90	=6.00	Not Detected
	Turkey	<0.50	=0.65	<0.50	=0.65	8.50	=6.00	Not Detected

63 yo female  
 DM2  
 5'3" 240lbs  
 Insomnia  
 Metformin  
 Glipizide  
 BP  
 Statin

Functional Imbalance Scores				
Key < 2 : Low Need for Support 2-3 : Optional Need for Support 4-6 : Moderate Need for Support 7-10 : High Need for Support				
Need for Digestive Support	Need for Inflammation Modulation	Need for Microbiome Support	Need for Prebiotic Support	Need for Antimicrobial Support
MALDIGESTION	INFLAMMATION	DYSBIOSIS	METABOLIC IMBALANCE	INFECTION
10	0	9	1	0
<b>Biomarkers</b> Fecal Fats ▲ Pancreatic Elastase ▼ Products of Protein Breakdown ●	Calprotectin ● Eosinophil Protein X ● Secretory IgA ● Occult Blood ●	IAD/Methane Score ▲ Reference Variance ▲ Total Abundance ▲ PP Bacteria/Yeast ●	Beta-glucuronidase ▲ n-Butyrate Conc. ▼ SCFA (%) ▼ Total SCFA's ●	Total Abundance ▲ Parasitic Infection ● Pathogenic Bacteria ● PP Bacteria/Yeast ●
<b>Therapeutic Support Options</b> <ul style="list-style-type: none"> <li>• Digestive Enzymes</li> <li>• Betaine HCl</li> <li>• Bile Salts</li> <li>• Apple Cider Vinegar</li> <li>• Mindful Eating Habits</li> <li>• Digestive Bitters</li> </ul>	<ul style="list-style-type: none"> <li>• Elimination Diet/ Food Sensitivity Testing</li> <li>• Mucosa Support: Slippery Elm, Althea, Aloe, DGL, etc.</li> <li>• Zinc Carnosine</li> <li>• L-Glutamine</li> <li>• Quercetin</li> <li>• Turmeric</li> <li>• Omega-3's</li> <li>• GI Referral (If Calpro is Elevated)</li> </ul>	<ul style="list-style-type: none"> <li>• Pre-/Probiotics</li> <li>• Increase Dietary Fiber Intake</li> <li>• Consider SIBO Testing</li> <li>• Increase Resistant Starches</li> <li>• Increase Fermented Foods</li> <li>• Meal Timing</li> </ul>	<ul style="list-style-type: none"> <li>• Pre-/Probiotics</li> <li>• Increased Dietary Fiber Intake</li> <li>• Increase Resistant Starches</li> <li>• Increase Fermented Foods</li> <li>• Calcium D-Glucarate (for high beta-glucuronidase)</li> </ul>	<ul style="list-style-type: none"> <li>• Antibiotics (if warranted)</li> <li>• Antimicrobial Herbal Therapy</li> <li>• Antiparasitic Herbal Therapy (if warranted)</li> <li>• <i>Saccharomyces boulardii</i></li> </ul>

63 yo female  
 DM2  
 5'3" 240lbs  
 Insomnia  
 Metformin  
 Glipizide  
 BP  
 Statin

### Commensal Abundance



### 2200 GI Effects™ Comprehensive Profile - Stool

Methodologies: GC-FID, Automated Chemistry, EIA, Immunoturbidimetric

Result	QUINTILE DISTRIBUTION					Reference Range	
	1st	2nd	3rd	4th	5th		
<b>Digestion and Absorption</b>							
Pancreatic Elastase 1 †	104 L	100 200					>200 mcg/g
Products of Protein Breakdown (Total*) (Valerate, Isobutyrate, Isovalerate)	4.7						1.8-9.9 micromol/g
Fecal Fat (Total*)	32.1						3.2-38.6 mg/g
Triglycerides	4.1 H						0.3-2.8 mg/g
Long-Chain Fatty Acids	21.7						1.2-29.1 mg/g
Cholesterol	3.5						0.4-4.8 mg/g
Phospholipids	2.8						0.2-6.9 mg/g

63 yo female  
 DM2  
 5'3" 240lbs  
 Insomnia  
 Metformin  
 Glipizide  
 BP  
 Statin

Gut Microbiome Metabolites			
<b>Metabolic</b>			
Short-Chain Fatty Acids (SCFA) (Total*) (Acetate, n-Butyrate, Propionate)	52.0		>=23.3 micromol/g
n-Butyrate Concentration	6.8		>=3.6 micromol/g
n-Butyrate %	13.1		11.8-33.3 %
Acetate %	63.8		48.1-69.2 %
Propionate %	23.0		<=29.3 %
Beta-glucuronidase	4,512		368-6,266 U/g

