



Patient: **JENNIFER
HARSH**

DOB: March 30, 1983

Sex: F

MRN: 1232184560

Order Number: **N1260231**

Reported: April 09, 2019

Received: March 26, 2019

Collected: March 24, 2019

The Biome Clinic

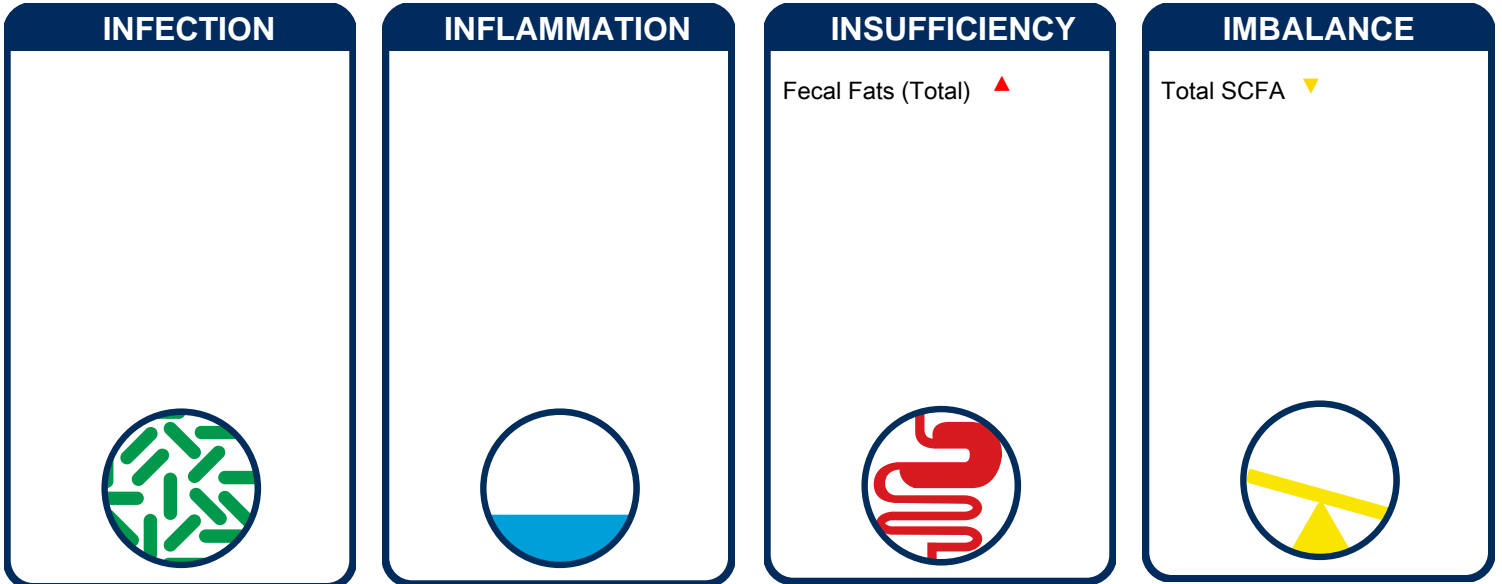
Nirala Jacobi ND

322 Yellowstone Ave

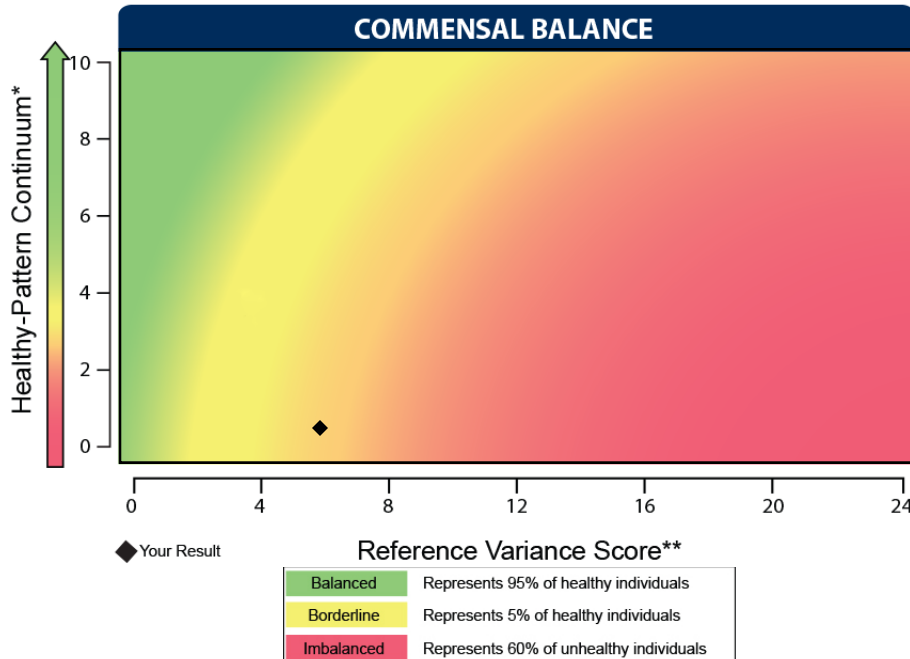
Billings, MT 59101-1727

2200 GI Effects™ Comprehensive Profile - Stool

Interpretation At-a-Glance

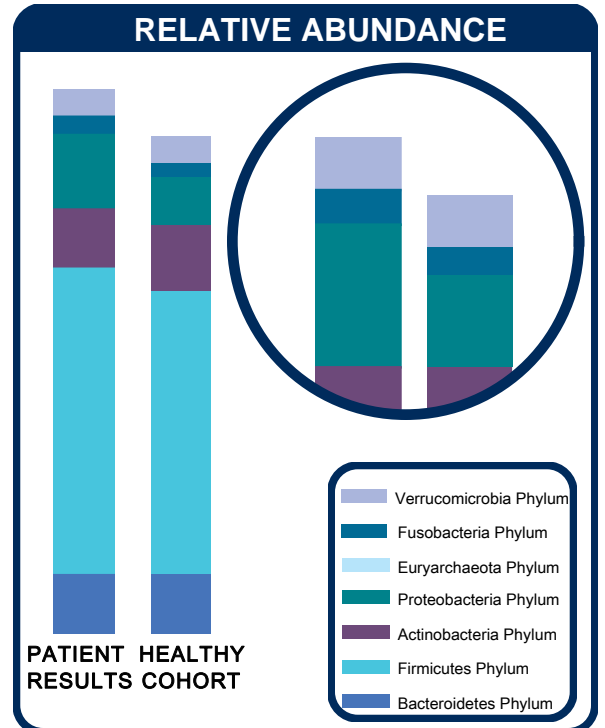


See individual sections for detailed results



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







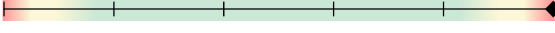
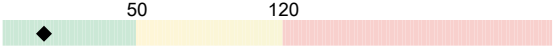







**The total number of Commensal Bacteria (PCR) that are out of reference ranges for this individual.





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Methodology: GC/MS, Automated Chemistry, EIA

2200 GI Effects™ Comprehensive Profile - Stool								
Methodology: GC/MS, Automated Chemistry, EIA		Result	QUINTILE DISTRIBUTION					Reference Range
			1st	2nd	3rd	4th	5th	
Digestion and Absorption								
Pancreatic Elastase 1 †	484							>200 mcg/g
Products of Protein Breakdown (Total*) (Valerate, Isobutyrate, Isovalerate)	4.0							1.8-9.9 micromol/g
Fecal Fat (Total*)	43.8 H							3.2-38.6 mg/g
Triglycerides	1.1							0.3-2.8 mg/g
Long-Chain Fatty Acids	26.0							1.2-29.1 mg/g
Cholesterol	1.2							0.4-4.8 mg/g
Phospholipids	15.5 H							0.2-6.9 mg/g
Inflammation and Immunology								
Calprotectin †	<16							<=50 mcg/g
Eosinophil Protein X (EPX)†	0.4							<=4.6 mcg/g
Fecal secretory IgA	127							<=885 mcg/g
Gastrointestinal Microbiome								
Metabolic								
Short-Chain Fatty Acids (SCFA) (Total*) (Acetate, n-Butyrate, Propionate)	35.7							>=23.3 micromol/g
n-Butyrate Concentration	8.7							>=3.6 micromol/g
n-Butyrate %	24.4							11.8-33.3 %
Acetate %	46.3 L							48.1-69.2 %
Propionate %	29.3							<=29.3 %
Beta-glucuronidase	1,462							368-6,266 U/g

*Total value is equal to the sum of all measurable parts.

†These results are not represented by quintile values.

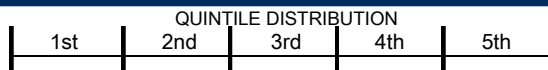
Tests were developed and their performance characteristics determined by Genova Diagnostics. Unless otherwise noted with *, the assays have not been cleared by the U.S. Food and Drug Administration.

Methodology: DNA by PCR



Gastrointestinal Microbiome

Commensal Bacteria (PCR)

Result
CFU/g stoolReference Range
CFU/g stool

Bacteroidetes Phylum

<i>Bacteroides-Prevotella</i> group	1.3E9		3.4E6-1.5E9
<i>Bacteroides vulgatus</i>	8.3E9 H		<=2.2E9
<i>Barnesiella</i> spp.	<DL		<=1.6E8
<i>Odoribacter</i> spp.	5.8E6		<=8.0E7
<i>Prevotella</i> spp.	3.2E7 H		1.4E5-1.6E7

Firmicutes Phylum

<i>Anaerotruncus colihominis</i>	5.0E7 H		<=3.2E7
<i>Butyrivibrio crossotus</i>	2.3E4		5.5E3-5.9E5
<i>Clostridium</i> spp.	1.1E10		1.7E8-1.5E10
<i>Coprococcus eutactus</i>	2.8E7		<=1.2E8
<i>Faecalibacterium prausnitzii</i>	1.0E10 H		5.8E7-4.7E9
<i>Lactobacillus</i> spp.	5.2E9		8.3E6-5.2E9
<i>Pseudoflavonifractor</i> spp.	4.2E8 H		4.2E5-1.3E8
<i>Roseburia</i> spp.	5.6E9		1.3E8-1.2E10
<i>Ruminococcus</i> spp.	4.0E8		9.5E7-1.6E9
<i>Veillonella</i> spp.	2.8E7		1.2E5-5.5E7

Actinobacteria Phylum

<i>Bifidobacterium</i> spp.	1.0E9		<=6.4E9
<i>Bifidobacterium longum</i>	2.2E8		<=7.2E8
<i>Collinsella aerofaciens</i>	1.5E7		1.4E7-1.9E9

Proteobacteria Phylum

<i>Desulfovibrio piger</i>	3.6E5		<=1.8E7
<i>Escherichia coli</i>	3.0E7		9.0E4-4.6E7
<i>Oxalobacter formigenes</i>	2.3E7 H		<=1.5E7

Euryarchaeota Phylum

<i>Methanobrevibacter smithii</i>	<DL		<=8.6E7
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Fusobacteria Phylum

<i>Fusobacterium</i> spp.	9.0E4		<=2.4E5
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Verrucomicrobia Phylum

<i>Akkermansia muciniphila</i>	3.5E7		>=1.2E6
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Firmicutes/Bacteroidetes Ratio

<i>Firmicutes/Bacteroidetes</i> (F/B Ratio)	25		12-620
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The gray-shaded portion of a quintile reporting bar represents the proportion of the reference population with results below detection limit.





Commensal results and reference range values are displayed in a computer version of scientific notation, where the capital letter "E" indicates the exponent value (e.g., 7.3E6 equates to 7.3×10^6 or 7,300,000).

The Firmicutes/Bacteroidetes ratio (F/B Ratio) is estimated by utilizing the lowest and highest values of the reference range for individual organisms when patient results are reported as <DL or >UL.

Methodology: Culture/MALDI-TOF MS, Automated and Manual Biochemical Methods, Vitek® 2 System Microbial identification and Antibiotic susceptibility

Gastrointestinal Microbiome**

Human microflora is influenced by environmental factors and the competitive ecosystem of the organisms in the GI tract. Pathogenic significance should be based upon clinical symptoms.

Microbiology Legend			
NG	NP	PP	P
			
No Growth	Non-Pathogen	Potential Pathogen	Pathogen

Additional Bacteria

Non-Pathogen: Organisms that fall under this category are those that constitute normal, commensal flora, or have not been recognized as etiological agents of disease.

Potential Pathogen: Organisms that fall under this category are considered potential or opportunistic pathogens when present in heavy growth.

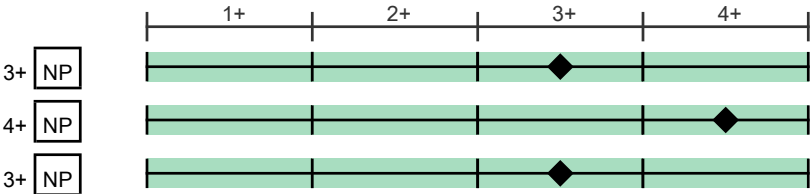
Pathogen: The organisms that fall under this category have a well-recognized mechanism of pathogenicity in clinical literature and are considered significant regardless of the quantity that appears in the culture.

Bacteriology (Culture)

Lactobacillus spp.

Escherichia coli

Bifidobacterium

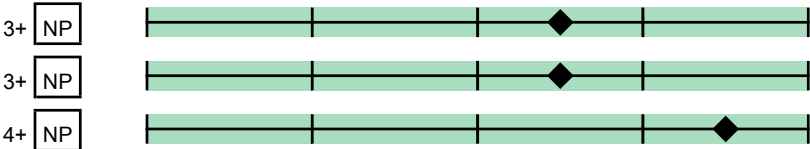


Additional Bacteria

alpha haemolytic Streptococcus

Streptococcus agalactiae gp B

gamma haemolytic Streptococcus



Mycology (Culture)

Yeast, not Candida albicans



** Indicates testing performed by Genova Diagnostics, Inc. 63 Zillicoa St., Asheville, NC 28801-0174
A. L. Peace-Brewer, PhD, D(ABMLI), Lab Director - CLIA Lic. #34D0655571 - Medicare Lic. #34-8475



Parasitology**

Microscopic O&P Results

Microscopic O&P is capable of detecting all described gastrointestinal parasites. The organisms listed in the box represent those commonly found in microscopic stool analysis. Should an organism be detected that is not included in the list below, it will be reported in the Additional Results section. For an extensive reference of all potentially detectable organisms, please visit

www.gdx.net/product/gi-effects-comprehensive-stool-test

Genus/species	Result
Nematodes - roundworms	
<i>Ancylostoma/Necator</i> (Hookworm)	Not Detected
<i>Ascaris lumbricoides</i>	Not Detected
<i>Capillaria philippinensis</i>	Not Detected
<i>Enterobius vermicularis</i>	Not Detected
<i>Strongyloides stercoralis</i>	Not Detected
<i>Trichuris trichiura</i>	Not Detected
Cestodes - tapeworms	
<i>Diphyllobothrium latum</i>	Not Detected
<i>Dipylidium caninum</i>	Not Detected
<i>Hymenolepis diminuta</i>	Not Detected
<i>Hymenolepis nana</i>	Not Detected
<i>Taenia</i> spp.	Not Detected
Trematodes - flukes	
<i>Clonorchis/Opisthorchis</i> spp.	Not Detected
<i>Fasciola</i> spp./ <i>Fasciolopsis buski</i>	Not Detected
<i>Heterophyes/Metagonimus</i>	Not Detected
<i>Paragonimus</i> spp.	Not Detected
<i>Schistosoma</i> spp.	Not Detected
Protozoa	
<i>Balantidium coli</i>	Not Detected
<i>Blastocystis</i> spp.	Not Detected
<i>Chilomastix mesnili</i>	Not Detected
<i>Cryptosporidium</i> spp.	Not Detected
<i>Cyclospora cayetanensis</i>	Not Detected
<i>Dientamoeba fragilis</i>	Not Detected
<i>Entamoeba coli</i>	Not Detected
<i>Entamoeba histolytica/dispar</i>	Not Detected
<i>Entamoeba hartmanii</i>	Not Detected
<i>Entamoeba polecki</i>	Not Detected
<i>Endolimax nana</i>	Not Detected
<i>Giardia</i>	Not Detected
<i>Iodamoeba buetschlii</i>	Not Detected
<i>Cystoisospora</i> spp.	Not Detected
<i>Trichomonads</i> (e.g. <i>Pentatrichomonas</i>)	Not Detected
Additional Findings	
White Blood Cells	Not Detected
Charcot-Leyden Crystals	Not Detected
Other Infectious Findings	

One negative specimen does not rule out the possibility of a parasitic infection.

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Parasitology

PCR Parasitology - Protozoa**

Methodologies: DNA by PCR, Next Generation Sequencing

Organism	Result	Units		Expected Result
<i>Blastocystis</i> spp.	<2.14e2	femtograms/microliter C&S stool	Not Detected	Not Detected
<i>Cryptosporidium</i> spp.	<4.87e2	genome copies/microliter C&S stool	Not Detected	Not Detected
<i>Cyclospora cayetanensis</i>	<2.65e2	genome copies/microliter C&S stool	Not Detected	Not Detected
<i>Dientamoeba fragilis</i>	<1.84e2	genome copies/microliter C&S stool	Not Detected	Not Detected
<i>Entamoeba histolytica</i>	<1.14e3	genome copies/microliter C&S stool	Not Detected	Not Detected
<i>Giardia</i>	<1.57e2	genome copies/microliter C&S stool	Not Detected	Not Detected

Blastocystis spp. Reflex Subtyping

Type 1:	N/A	Type 4:	N/A	Type 7:	N/A	A not applicable (N/A) result for <i>Blastocystis</i> reflex subtyping indicates the test was not performed.
Type 2:	N/A	Type 5:	N/A	Type 8:	N/A	
Type 3:	N/A	Type 6:	N/A	Type 9:	N/A	

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Additional Results

Methodology: Fecal Immunochemical Testing (FIT)

	Result	Expected Value
Fecal Occult Blood♦	Negative	Negative
Color††	Brown	
Consistency††	Formed/Normal	

††Results provided from patient input.
Tests were developed and their performance characteristics determined by Genova Diagnostics. Unless otherwise noted with ♦, the assays have not been cleared by the U.S. Food and Drug Administration.

2200 GI Effects™ Comprehensive Profile - Stool

Interpretation At-a-Glance									
Commensal Bacteria	Patient Results Out of Reference Range	Genova Diagnostics Commensal Bacteria Clinical Associations*							
		IBS	IBD	Metabolic Syndrome	Chronic Fatigue	Auto-immune	Type 2 Diabetes	High Blood Pressure	Mood Disorders
Bacteroidetes Phylum									
<i>Bacteroides-Prevotella</i> group		↑	↑	↑	↑	↑	↑	↑	↑
<i>Bacteroides vulgatus</i>	H	↑			↑	↑		↑	↑
<i>Barnesiella</i> spp.									
<i>Odoribacter</i> spp.									
<i>Prevotella</i> spp.	H	↑		↑	↑	↑		↑	↑
Firmicutes Phylum									
<i>Anaerotruncus colihominis</i>	H	↑	↑	↑	↑	↑	↑	↑	↑
<i>Butyrivibrio crossotus</i>									
<i>Clostridium</i> spp.									
<i>Coprococcus eutactus</i>		↑			↑	↑		↑	↑
<i>Faecalibacterium prausnitzii</i>	H	↑				↑			↑
<i>Lactobacillus</i> spp.									
<i>Pseudoflavonifractor</i> spp.	H	↑	↑	↑	↑	↑	↑	↑	↑
<i>Roseburia</i> spp.			↓						
<i>Ruminococcus</i> spp.		↓↑	↓	↓	↓	↓↑	↓↑	↓↑	↓↑
<i>Veillonella</i> spp.		↑	↑	↑	↑	↑	↑		↑
Actinobacteria Phylum									
<i>Bifidobacterium</i> spp.									
<i>Bifidobacterium longum</i>									
<i>Collinsella aerofaciens</i>		↓↑	↓↑	↓	↓↑	↓↑	↓↑	↓↑	↓↑
Proteobacteria Phylum									
<i>Desulfovibrio piger</i>									↑
<i>Escherichia coli</i>		↑	↑	↑	↑	↑	↑	↑	↑
<i>Oxalobacter formigenes</i>	H	↑		↑	↑				↑
Euryarchaeota Phylum									
<i>Methanobrevibacter smithii</i>		↑				↑			↑
Fusobacteria Phylum									
<i>Fusobacterium</i> spp.		↑	↑	↑	↑	↑	↑	↑	↑
Verrucomicrobia Phylum									
<i>Akkermansia muciniphila</i>		↓	↓	↓	↓	↓	↓	↓	↓
*Information derived from GDX results data comparing a healthy cohort to various clinical condition cohorts. The chart above showing a comparison of patient results to clinical conditions is meant for informational purposes only; it is not diagnostic, nor does it imply that the patient has a specific clinical diagnosis or condition.									
The arrows indicate Genova's clinical condition cohort test results falling below ↓ or above ↑ the reference range that is greater than that of Genova's healthy cohort.									
↓↑ Indicates Genova's clinical condition cohort test results falling below and above the reference range that are greater than that of Genova's healthy cohort.									
Cells with bolded arrows indicate Genova's clinical condition cohort had more test results falling above versus below ↓↑ or more below versus above ↓↑ the reference range compared to that of Genova's healthy cohort.									

2200 GI Effects™ Comprehensive Profile - Stool

Interpretation At-a-Glance									
Biomarker	Patient Results Out of Reference Range	Genova Diagnostics Biomarker Clinical Associations*							
		IBS	IBD	Metabolic Syndrome	Chronic Fatigue	Auto-immune	Type 2 Diabetes	High Blood Pressure	Mood Disorders
Pancreatic Elastase		↓	↓	↓	↓	↓	↓	↓	↓
Products of Protein Breakdown (Total)							↕↕		
Fecal Fat (Total*)	H	↑		↑	↑	↑	↕↕	↑	↑
Triglycerides		↑			↑	↑	↑	↑	↑
Long-Chain Fatty Acids		↑			↑	↑	↕↕	↑	↑
Cholesterol							↕↕	↑	
Phospholipids	H	↑	↑	↑	↑	↑	↑	↑	↑
Calprotectin			↑					↑	
Eosinophil Protein X (EPX)			↑						
Fecal secretory IgA		↑	↑	↑	↑	↑	↑	↑	↑
Short-Chain Fatty Acids (SCFA) (Total)					↓	↓			
n-Butyrate Concentration				↓					
n-Butyrate %									
Acetate %	L				↕↕		↕↕		
Propionate %				↑			↑	↑	
Beta-glucuronidase						↕↕			↕↕
*Information derived from GDX results data comparing a healthy cohort to various clinical condition cohorts. The chart above showing a comparison of patient results to clinical conditions is meant for informational purposes only; it is not diagnostic, nor does it imply that the patient has a specific clinical diagnosis or condition.									
The arrows indicate Genova's clinical condition cohort test results falling below ↓ or above ↑ the reference range that is greater than that of Genova's healthy cohort.									
↕↕ Indicates Genova's clinical condition cohort test results falling below and above the reference range that are greater than that of Genova's healthy cohort.									
Cells with bolded arrows indicate Genova's clinical condition cohort had more test results falling above versus below ↕↕ or more below versus above ↕↕ the reference range compared to that of Genova's healthy cohort.									