


Gut Case Studies, Part 4

CASE #7: 38-YEAR-OLD FEMALE

Our next patient is a 38-year-old female with chief complaints of brain fog, low energy, joint pain, and stiffness with bloating, constipation, and distension. She's had a history of parasites and had self-treated with oregano oil but didn't retest after the self-treatment, and [she] had a tendency toward constipation. She did suspect issues with gluten but still consumed it occasionally.



CO ₂ QC Check		Pass	
Gases	Expected	Observed	Normal/Abnormal
H ₂ †	<25.58 ppm	6.54	Normal
CH ₄	<10.00 ppm	53.48	Abnormal
H ₂ S	<5.00 ppm	1.52	Normal

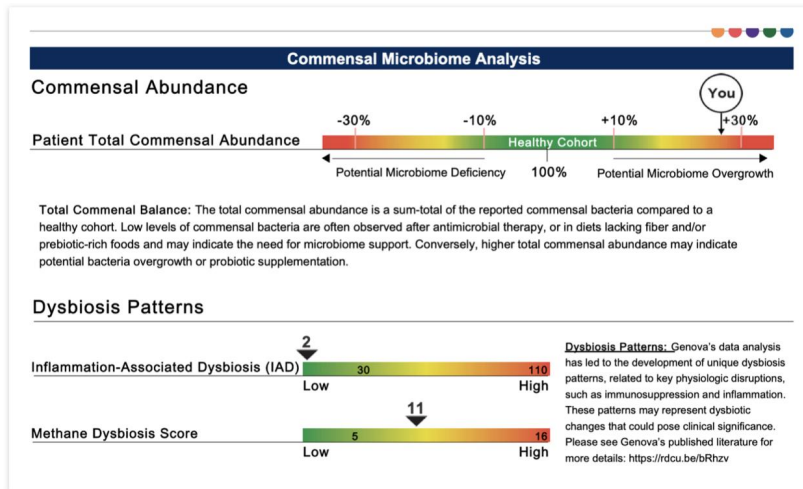
*Note: The "observed" peak for H₂ is within the first 90 minutes.

Interpretation	
Indicative of Intestinal Methanogenic Overgrowth	

Results									
Samples	T1	T2	T3	T4	T5	T6	T7	T8	T9
Interval (hr:min)	0	16	31	46	61	76	91	106	121
Gases									
H ₂ (ppm)	5.58	IVR	2.39	IVR	2.95	6.54	6.95	8.49	6.79
CH ₄ (ppm)	53.48	IVR	34.01	IVR	34.56	45.57	36.33	36.27	35.69
H ₂ S (ppm)	1.09	IVR	1.52	IVR	1.02	1.09	0.96	0.84	0.82

IVR-Insufficient Volume Received

So here you can see her trio-smart [small intestinal bacterial overgrowth] (SIBO) breath test is positive for intestinal methanogen overgrowth with a pretty high value, actually, up into the 50s. You'll also notice these IVR readings for two of the samples, which stands for insufficient volume received, meaning the tube didn't have enough air in it to sample. This happens from time to time for various reasons. If the lab thinks that the IVR results will impact [the] interpretation of the test, they'll generally reach out to you and ask if you want the patient to retest. I've only had to do that a few times in the course of using this test, and most of the time, you're still able to see the trend well enough with the results that you do have.



Her GI Effects stool test showed [an] imbalance in commensal abundance with a high normal methane dysbiosis score, so we're starting to see some imbalance [in] the ecosystem and microbial balance already. There [are] also elevated markers of protein breakdown that you can see with exocrine pancreatic insufficiency, high-protein diet, SIBO, low [hydrochloric acid], and then certain levels of dysbiosis. So with this particular patient, SIBO and dysbiosis seem to be the top contenders that are impacting protein breakdown. Low fecal fats can sometimes be seen in low-fat diets, but for her, it's really only her triglycerides that are low. So I'm just not 100 percent sure what to make of it, but we'll keep an eye on this as we go.



Overall, [the] metabolic activity of [the] microbiome is mostly good, with some ratio issues but not deficient overall.

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>Teenia</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.	Many Detected
<i>Chilomastix mesnili</i>	Not Detected
<i>Cryptosporidium</i> spp.	Not Detected
<i>Cyclospora cayentanensis</i>	Not Detected
<i>Dientamoeba fragilis</i>	Many Detected
<i>Entamoeba coli</i>	Not Detected
<i>Entamoeba histolytica/dispar</i>	Not Detected
<i>Entamoeba hartmani</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	

She's been diagnosed with parasites before, and here we [see] *Blastocystis* and [*Dientamoeba fragilis*] on the GI Effects stool test.

Parasitology			
PCR Parasitology - Protozoa			Methodologies: DNA by PCR, Next Generation Sequencing
Organism	Result	Units	Expected Result
<i>Blastocystis</i> spp.	6.78e4	femtograms/microliter C&S stool	Detected
<i>Cryptosporidium parvum/hominis</i>	<1.76e2	genome copies/microliter C&S stool	Not Detected
<i>Cyclospora cayetanensis</i>	<2.65e2	genome copies/microliter C&S stool	Not Detected
<i>Dientamoeba fragilis</i>	4.10e5	genome copies/microliter C&S stool	Detected
<i>Entamoeba histolytica</i>	<9.64e1	genome copies/microliter C&S stool	Not Detected
<i>Giardia</i>	<1.36e1	genome copies/microliter C&S stool	Not Detected

<i>Blastocystis</i> spp. Reflex Subtyping					
Type 1:	Not Detected	Type 4:	Not Detected	Type 7:	Not Detected
Type 2:	Detected	Type 5:	Not Detected	Type 8:	Not Detected
Type 3:	Not Detected	Type 6:	Not Detected	Type 9:	Not Detected

Additional Results		
Methodology: Fecal Immunochemical Testing (FIT)		
	Result	Expected Value
Fecal Occult Blood*	Negative	Negative
Consistency††	Loose	

Here's the typing for [*Blastocystis*] and [polymerase chain reaction] (PCR) confirmation from the [ova and parasites] (O&P) we just saw. So based on the Genova interpretation guide, subtype two tends to be less pathogenic but can cause some bloating and diarrhea for patients.



TEST	RESULT			REFERENCE (ELISA Index)
	IN RANGE (Normal)	EQUIVOCAL*	OUT OF RANGE	
Array 3 – Wheat/Gluten Proteome Reactivity & Autoimmunity				
Wheat IgG	0.38			0.3-1.5
Wheat IgA	0.54			0.1-1.2
Wheat Germ Agglutinin IgG	<0.40			0.4-1.3
Wheat Germ Agglutinin IgA		1.09		0.2-1.1
Native & Deamidated Gliadin 33 IgG	<0.20			0.2-1.2
Native & Deamidated Gliadin 33 IgA	0.34			0.1-1.1
Alpha Gliadin 17-mer IgG	0.53			0.1-1.5
Alpha Gliadin 17-mer IgA		0.94		0.1-1.1
Gamma Gliadin 15-mer IgG	<0.50			0.5-1.5
Gamma Gliadin 15-mer IgA	0.26			0.1-1.0
Omega Gliadin 17-mer IgG	<0.30			0.3-1.2
Omega Gliadin 17-mer IgA	0.49			0.1-1.2
Glutenin 21-mer IgG		1.43		0.1-1.5
Glutenin 21-mer IgA	0.91			0.1-1.3
Gluteomorphin + Prodynorphin IgG	0.39			0.3-1.2
Gluteomorphin + Prodynorphin IgA	0.43			0.1-1.2
Gliadin-Transglutaminase Complex IgG	0.32			0.3-1.4
Gliadin-Transglutaminase Complex IgA	0.54			0.2-1.5
Transglutaminase-2 IgG	0.32			0.3-1.6
Transglutaminase-2 IgA	0.91			0.1-1.6
Transglutaminase-3 IgG	0.63			0.2-1.6
Transglutaminase-3 IgA	0.64			0.1-1.5
Transglutaminase-6 IgG	1.08			0.2-1.5
Transglutaminase-6 IgA	0.77			0.1-1.5

She was still consuming some small amounts of gluten, so we did a Cyrex Array 3, and she [had] three equivocal markers of gluten intolerance. But given her suspicion and her subjective reaction to gluten and everything else that’s going on, I [advised] her to avoid gluten ongoing. So here are the diagnoses. We’ve got intestinal methanogen overgrowth based [on] the trio-smart breath test, *Blastocystis hominis* and *D. fragilis* on the GI Effects [test], some dysbiosis that we’re seeing with high markers of protein breakdown, and gluten intolerance on the Cyrex [Array] 3X.



Diagnosis

Pattern	Supporting Markers	Comments
SIBO (IMO)	TrioSmart	
Blastocystis hominis infection	GI Effects	+ D. Fragilis
Dysbiosis	GI Effects	High markers of protein breakdown
Gluten intolerance	Cyrex 3X	

So this patient has a lot going on, but we decided to focus primarily on the SIBO and [*Blastocystis*] first because of the high levels of methane on the test and her presenting symptoms. I don't know for sure if [*Blastocystis*] is a problem for her, but I figure we'll go ahead and address it in the protocol we're using for SIBO also.



Treatment protocol

Nutraceutical	Dosage
GI Synergy	1 packet BID (with breakfast and dinner)
Allimax Pro	1 capsules TID with food
Atrantil	2 capsules TID at beginning of meals
Interfase Plus	3–4 capsules BID (on an empty stomach)
Ideal Bowel Support	1 capsule BID; can be taken with food but away from antimicrobials or antibiotics
Mimosa Pudica	2 capsules twice daily on an empty stomach.
Saccharomyces boulardii	For Blastocystis

I have GI-Synergy and Interfase Plus from the core protocol, plus Allimax Pro, Atrantil, and Ideal Bowel Support for methane. I like using *Mimosa pudica* from Microbe Formulas for *Blastocystis* and *D. fragilis*, and then we also have some *Saccharomyces boulardii* in there.



CO ₂ QC Check		Pass	
Gases	Expected	Observed	Normal/Abnormal
H ₂ †	<22.54 ppm	2.54	Normal
CH ₄	<10.00 ppm	7.26	Normal
H ₂ S	<5.00 ppm	3.98	Normal

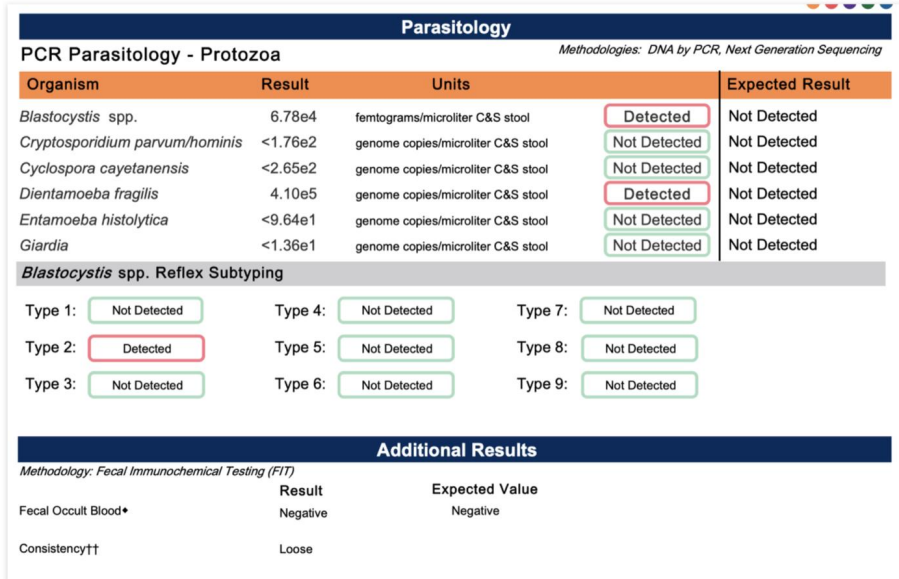
†Note: The "observed" peak for H₂ is within the first 90 minutes.

Interpretation	
Gases Detected at Normal Levels	

Samples	Results								
	T1	T2	T3	T4	T5	T6	T7	T8	T9
Interval (hr:min)	0	17	32	48	65	81	97	113	128
Gases									
H ₂ (ppm)	IVR	2.54	1.86	0.00	2.07	0.28	0.00	2.49	0.77
CH ₄ (ppm)	IVR	4.24	5.52	7.26	4.11	4.46	3.45	4.67	5.34
H ₂ S (ppm)	IVR	1.71	3.17	3.98	2.66	1.43	1.95	2.66	1.46

Suboptimal Sample-Bag Deflated (T2-T9); IVR-Insufficient Volume Received

So here's our follow-up SIBO breath test after doing that protocol for about 60 days, give or take a few extra weeks on there, and ramping up. The breath test showed resolution of intestinal methanogen overgrowth. This is really nice to see, considering how high her levels were. I don't always see those levels come down as nicely as this.



Parasitology
PCR Parasitology - Protozoa Methodologies: DNA by PCR, Next Generation Sequencing

Organism	Result	Units	Detected	Expected Result
<i>Blastocystis</i> spp.	6.78e4	femtograms/microliter C&S stool	Detected	Not Detected
<i>Cryptosporidium parvum/hominis</i>	<1.76e2	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>	4.10e5	genome copies/microliter C&S stool	Detected	Not Detected
<i>Entamoeba histolytica</i>	<9.64e1	genome copies/microliter C&S stool	Not Detected	Not Detected
<i>Giardia</i>	<1.36e1	genome copies/microliter C&S stool	Not Detected	Not Detected

***Blastocystis* spp. Reflex Subtyping**

Type 1:	Not Detected	Type 4:	Not Detected	Type 7:	Not Detected
Type 2:	Detected	Type 5:	Not Detected	Type 8:	Not Detected
Type 3:	Not Detected	Type 6:	Not Detected	Type 9:	Not Detected

Additional Results
Methodology: Fecal Immunochemical Testing (FIT)

	Result	Expected Value
Fecal Occult Blood*	Negative	Negative
Consistency††	Loose	

Blastocystis and *D. fragilis* remained on follow-up testing, actually, and she did report some improvement in constipation and was now going daily, but found that she was actually leaning a little bit more toward loose stool after treating SIBO. She had also gone gluten-free at the time, so it's hard to know for sure what's the biggest contributor to her symptom improvement. But overall, she felt better, with bloating and distension still there most of the time, even after [the] first treatment.

So in this situation, we have a few options. We could continue with another botanical protocol and see if we have further progression for the parasites, or we could try pharmaceuticals. This patient wanted to try medications. She had already done a lot of botanical treatments with a history of unsuccessful treatments in the past.



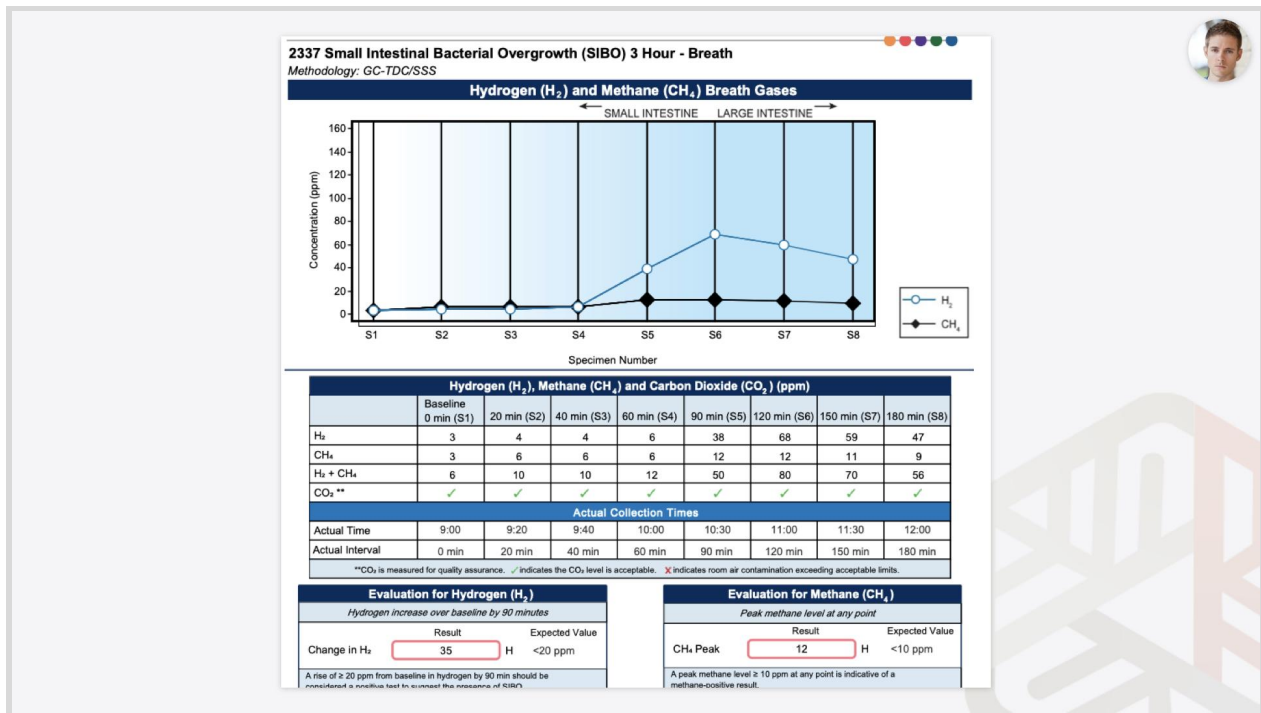
Follow-up treatment protocol (Blasto)

Intervention	Dosage
Secnidazole	400 mg TID (10 days)
Nitazoxanide (Alinia)	500 mg BID with meals (10 days)
Paramomycin sulfate	500 mg TID with meals (10 days)
SEED	2 capsules daily
Interfase Plus	3–4 capsules BID (on an empty stomach)
Saccharomyces boulardii	For Blastocystis and while on Rx

For [*Blastocystis*], the options are Alinia monotherapy of 500 milligrams twice daily for 30 days or triple-drug therapy from the Centre for Digestive [Diseases] (CDD). This drug therapy has changed over the years, and it used to be iodoquinol or Yodoxin, but that's no longer commercially available, at least based [on] what I can find and after talking to pharmacists. So at the time of this recording, the first-line [*Blastocystis*] treatment from the CDD is what this patient opted for, which was secnidazole 400 milligrams three times a day for 10 days, Alinia 500 milligrams twice daily, and paromomycin 500 milligrams three times daily. I did recommend continuing the probiotics, including the *S. boulardii* and a biofilm disruptor. [So] [she] continue[d] with the probiotics for an additional 30 days and then retested. Both [*Blastocystis*] and *D. fragilis* [were] resolved on the post-test, as did her joint pain and stiffness. The distension and bloating were continuing to improve, and her bowel patterns were normalizing, so that was good news. We're moving in the right direction. Considering she had so many infections and overgrowth present, I wasn't expecting her gut symptoms to just miraculously improve with resolution of the imbalances. So this is where we stick with it, continue with the restorative support, help with diet, [and] gut lining support with [inaudible] GI Revive and ION Gut Health and those type[s] of products.

CASE #8: 32-YEAR-OLD MALE

[The] next patient is a 32-year-old male, [whose] chief complaint[s are] anxiety, panic attacks, irritability, [gastroesophageal reflux disease] (GERD), sinus congestion, and [minor?] joint pain. He was also recently diagnosed with immune thrombocytopenia (ITP). So also, that's the primary reason why he's here, to try to address or find underlying triggers of this disease. By the time he came to me, he was on Promacta already to address the low platelet values, and they did seem to be controlling the number some. If you look into this autoimmune disease more, you'll see that they just aren't sure what can trigger this process, but infections like HIV, hepatitis, or [*Helicobacter pylori*] have been associated with ITP. [It] also can be associated with viral illnesses like cytomegalovirus, varicella-zoster, and a few more. So the hunt is on to try to figure out, if you can, what triggered this process. We did start with gut testing, though. That's [the] baseline foundational start, even in this autoimmune process.



Here's the Genova SIBO three-hour breath test, positive for both intestinal methanogen overgrowth, at 12 part[s] per million at its highest value, and [a] hydrogen result of 35 at the 90-minute mark.



H. pylori			
	Result		Normal
<i>Helicobacter pylori</i>	1.2e3	High	<1.0e3
Virulence Factor, babA	Negative		Negative
Virulence Factor, cagA	Negative		Negative
Virulence Factor, dupA	Negative		Negative
Virulence Factor, iceA	Negative		Negative
Virulence Factor, oipA	Negative		Negative
Virulence Factor, vacA	Negative		Negative
Virulence Factor, wxB	Negative		Negative
Virulence Factor, wxD	Negative		Negative
Normal Bacterial Flora			
	Result		Normal
<i>Bacteroides fragilis</i>	5.11e10		1.60e9 - 2.50e11
<i>Bifidobacterium</i> spp.	2.89e11		>6.70e7
<i>Enterococcus</i> spp.	2.51e6		1.9e5 - 2.00e8
<i>Escherichia</i> spp.	4.14e8		3.70e6 - 3.80e9
<i>Lactobacillus</i> spp.	3.86e7		8.6e5 - 6.20e8
<i>Clostridia</i> (class)	2.93e6	Low	5.00e6 - 5.00e7
<i>Enterobacter</i> spp.	2.42e6		1.00e6 - 5.00e7
<i>Akkermansia muciniphila</i>	3.95e5	High	1.00e1 - 5.00e4
<i>Faecalibacterium prausnitzii</i>	5.62e4		1.00e3 - 5.00e8
Phyla Microbiota			
	Result		Normal
Bacteroidetes	1.30e12		8.61e11 - 3.31e12
Firmicutes	7.80e10		5.70e10 - 3.04e11
Firmicutes:Bacteroidetes Ratio	0.06		<1.00
Parasites			
	Result		Normal
<i>Blastocystis hominis</i>	<dl		<2.00e3
<i>Chilomastix mesnili</i>	<dl		<1.00e5
<i>Cyclospora</i> spp.	<dl		<5.00e4
<i>Dientamoeba fragilis</i>	<dl		<1.00e5
<i>Endolimax nana</i>	<dl		<1.00e4
<i>Entamoeba coli</i>	<dl		<5.00e6
<i>Pentatrichomonas hominis</i>	<dl		<1.00e2
Worms			
	Result		Normal
<i>Ancylostoma duodenale</i>	Not Detected		Not Detected
<i>Ascaris lumbricoides</i>	Not Detected		Not Detected
<i>Necator americanus</i>	Not Detected		Not Detected
<i>Trichuris trichiura</i>	Not Detected		Not Detected
<i>Taenia</i> spp.	Not Detected		Not Detected
Intestinal Health			
	Result		Normal
Digestion			
Steatocrit	<dl		<15 %
Elastase-1	312		>200 ug/g
GI Markers			
	Result		Normal
b-Glucuronidase	1215		<2486 U/mL
Occult Blood - FIT	0		<10 ug/g
Immune Response			
	Result		Normal
Secretory IgA	549		510 - 2010 ug/g
Anti-gliadin IgA	108		0 - 157 U/L
Inflammation			
	Result		Normal
Calprotectin	11		<173 ug/g

We did a [Diagnostic Solutions Laboratory] (DSL) GI-MAP stool test that showed high levels of *H. pylori* without any virulence factors, but mostly normal bacterial flora and optimal digestion markers. I would like to see that elastase up just a touch higher to 500, but nowhere near pancreatic insufficiency.



Diagnosis

Pattern	Supporting Markers	Comments
SIBO	Genova breath	IMO and H2
H.pylori	DSL GI MAP	No virulence factors

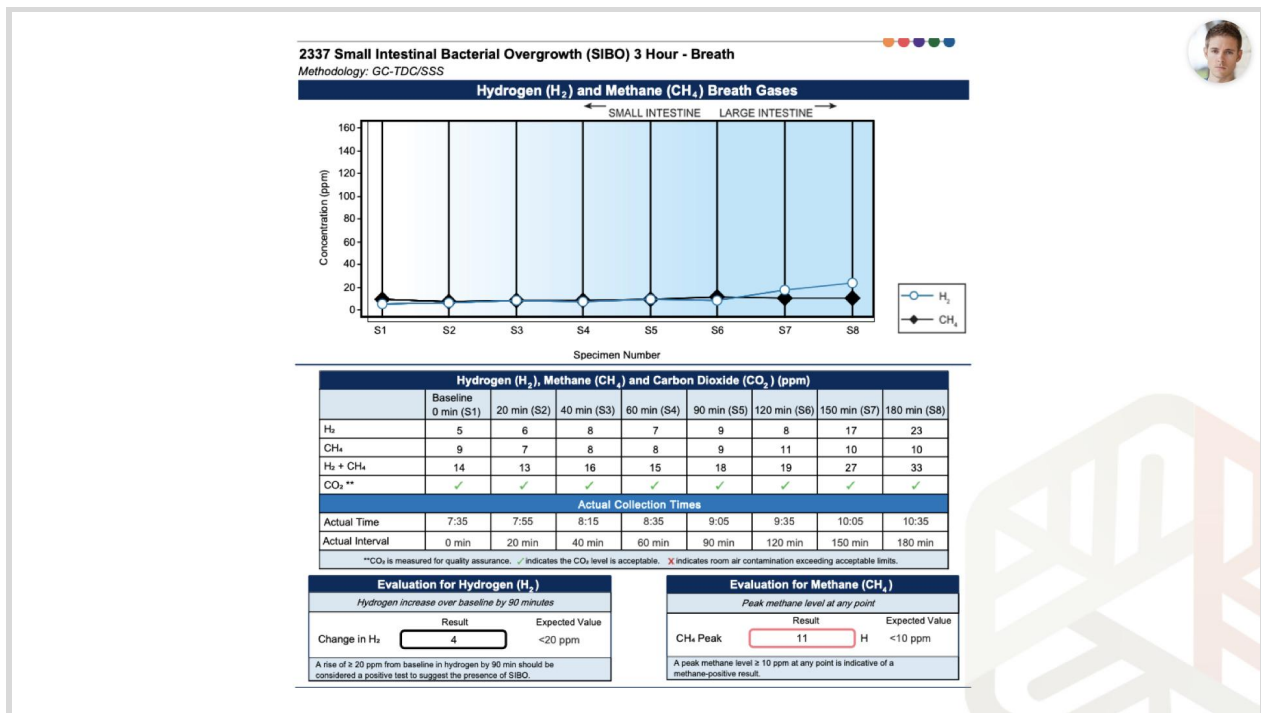
Initial testing results: [the] diagnosis was SIBO, intestinal methanogen overgrowth, and hydrogen, *H. pylori* on the DSL GI-MAP without any virulence factors.



Treatment protocol

Nutraceutical	Dosage
GI Synergy	1 packet BID (with breakfast and dinner)
Lauricidin	1 scoop TID with each meal
Interfase Plus	3-4 capsules BID on empty stomach
TerraFlora	One capsule with lunch
Bio HPF	2-3 capsules before meals, TID
Atrantil	Slowly build to 20-30 drops BID with meals
Saccharomyces boulardii	3 billion CFU BID at lunch and before bed

For treatment, considering he had both SIBO and *H. pylori*, I used portions of the core protocol with some SIBO-specific botanicals and *H. pylori*-specific treatments. This was a little tricky because he wasn't terribly symptomatic from a gut perspective other than mild GERD, but with the association between *H. pylori* and ITP, I felt that I had to at least focus on the *H. pylori* a little bit more. So I added Bio-HPF for *H. pylori* along with *S. boulardii*, Atrantil for SIBO, and I honestly can't remember why we went with Terraflora for this patient over Seed, but I think at the time, Seed was probably on backorder. He did this protocol for about 10 weeks or so, including ramp-up, took a two- to four-week break, and then did follow-up testing. Toward the end of the protocol, he wasn't feeling much different other than his nasal congestion was gone and joint pain seemed to have [improved] insignificantly. He also changed his diet and removed inflammatory foods. So [it's] always a little tricky to know when we're doing multiple interventions at a time, but the goal is to improve symptoms and function and health, so we don't always have time or space to do every intervention by itself in order to tease [out] all that information.



This repeat SIBO breath test showed improvement in hydrogen levels but pretty similar methane levels. At this point, I decided to wait and see what the repeat stool test showed before deciding how to move forward. I wasn't really planning on aggressively treating the methane of 11 at this point for this particular patient, but I was open to it depending on what we found.



H. pylori				Parasites		
<i>Helicobacter pylori</i>	Result		Normal	Protozoa	Result	Normal
Virulence Factor, babA	1.1e3	High	<1.0e3	<i>Blastocystis hominis</i>	<dl	<2.00e3
Virulence Factor, cagA	Negative		Negative	<i>Chilomastix mesnili</i>	<dl	<1.00e5
Virulence Factor, dupA	Negative		Negative	<i>Cyclospora spp.</i>	<dl	<5.00e4
Virulence Factor, iceA	Negative		Negative	<i>Dientamoeba fragilis</i>	5.70e4	<1.00e5
Virulence Factor, oipA	Negative		Negative	<i>Endolimax nana</i>	<dl	<1.00e4
Virulence Factor, vacA	Negative		Negative	<i>Entamoeba coli</i>	<dl	<5.00e6
Virulence Factor, wIB	Negative		Negative	<i>Pentatrichomonas hominis</i>	<dl	<1.00e2
Virulence Factor, wID	Negative		Negative	Worms	Result	Normal
Normal Bacterial Flora	Result		Normal	<i>Ancylostoma duodenale</i>	Not Detected	Not Detected
<i>Bacteroides fragilis</i>	2.75e11	High	1.60e9 - 2.50e11	<i>Acaris lumbricoides</i>	Not Detected	Not Detected
<i>Bifidobacterium spp.</i>	8.69e11		>6.70e7	<i>Necator americanus</i>	Not Detected	Not Detected
<i>Enterococcus spp.</i>	1.12e5	Low	1.9e5 - 2.00e8	<i>Trichuris trichiura</i>	Not Detected	Not Detected
<i>Escherichia spp.</i>	7.95e8		3.70e6 - 3.80e9	<i>Taenia spp.</i>	Not Detected	Not Detected
<i>Lactobacillus spp.</i>	1.11e7		8.6e5 - 6.20e8	Intestinal Health	Result	Normal
<i>Clostridia (class)</i>	1.12e6	Low	5.00e6 - 5.00e7	Digestion	<dl	<15 %
<i>Enterobacter spp.</i>	6.56e6		1.00e6 - 5.00e7	Sieatocrit	397	>200 ug/g
<i>Akkermansia muciniphila</i>	7.45e4	High	1.00e1 - 5.00e4	Elastase-1		
<i>Faecalibacterium prausnitzii</i>	1.36e6		1.00e3 - 5.00e8	GI Markers	Result	Normal
Phyla Microbiota	Result		Normal	b-Glucuronidase	531	<2486 U/mL
<i>Bacteroidetes</i>	2.45e12		8.61e11 - 3.31e12	Occult Blood - FIT	0	<10 ug/g
<i>Firmicutes</i>	1.80e11		5.70e10 - 3.04e11	Immune Response	Result	Normal
<i>Firmicutes:Bacteroidetes Ratio</i>	0.07		<1.00	Secretory IgA	250	Low 510 - 2010 ug/g
				Anti-gliadin IgA	94	0 - 157 U/L
				Inflammation	Result	Normal
				Calprotectin	0	<173 ug/g

Here's the repeat DSL follow-up test. *H. pylori* is still present in pretty similar levels. Normal flora was impacted a bit. An appearance of *D. fragilis* showed up. [There was] some slight improvement in elastase, but secretory [immunoglobulin A] also went down a bit, so it's a little hard to know exactly what is the result of the protocol here. He did the retest four weeks after treatment but hadn't really continued any of the supportive portions of the protocol that I had recommended. I see small changes in the stool test after protocols, like these little tiny fluctuations of changes in normal bacterial flora, a little bit of uptick in other—potential pathogens. So I generally like to wait it out and make a plan to treat the primary target, especially in this case, when the patient isn't terribly symptomatic and GERD symptoms did improve by about 50 percent.



Follow-up treatment protocol (*H.pylori*)

Intervention	Dosage
PPI (lansoprazole, omeprazole, pantoprazole, etc.)	40 mg twice daily (used Omeprazole)
Amoxicillin	1 g BID
Clarithromycin	500 mg BID
SEED	2 capsules daily, continue ongoing
Saccharomyces boulardii	3 billion CFU BID at lunch and before bed, continue for 30 days

For this patient, we discussed the options for additional treatment of *H. pylori*. I might not have traditionally pursued this as much, given he didn't have peptic ulcer disease that I know of, and he didn't have a strong family history of gastric cancer, although his parents passed away pretty early on in life, so that's also a little difficult to know for sure. But for me, it was hard to ignore the connection between ITP and *H. pylori*, so I gave him the option of repeating [an] herbal protocol or moving to prescription therapy. I really try to avoid prescription therapy and use [it] only in certain cases. He really wanted prescription therapy because of the timeline it presented and the other stressors and responsibilities that he had going on in life. If you aren't able to prescribe, I still think a second herbal protocol could be helpful and useful if you really suspect *H. pylori* to be playing a role.



H. pylori					
<i>Helicobacter pylori</i>					Range CFU/g
					<1.0e3
Virulence Factor, babA		N/A		Negative	
Virulence Factor, cagA		N/A		Negative	
Virulence Factor, dupA		N/A		Negative	
Virulence Factor, iceA		N/A		Negative	
Virulence Factor, oipA		N/A		Negative	
Virulence Factor, vacA		N/A		Negative	
Virulence Factor, virB		N/A		Negative	
Virulence Factor, virD		N/A		Negative	
Antibiotic Resistance Genes, phenotypes					
Helicobacter					
Clarithromycin		N/A		Negative	
A2142C	N/A	A2142G	N/A	A2143G	N/A
Fluoroquinolones		N/A		Negative	
gyrA N87K	N/A	gyrA D91N	N/A	gyrA D91G	N/A
gyrB S479N	N/A	gyrB R484K	N/A		
Tetracycline		N/A		Negative	
PBP1A S414R	N/A	PBP1A T556S	N/A	PBP1A N562Y	N/A
Amoxicillin		N/A		Negative	
A926G	N/A	AGA926-928TTC	N/A		

I took a look at the antibiotic-resistant gene phenotype section of the DSL, and it showed no resistance for his *H. pylori*. So we went with the first line of treatment with a [proton pump inhibitor], amoxicillin, and clarithromycin for 14 days. I also had him continue Seed and *Saccharomyces boulardii*, and then we planned to retest four weeks after cessation of treatment.



Test Name	In Range	Out Of Range	Reference Range	Lab
HELICOBACTER PYLORI AG, EIA, STOOL				NL1
Micro Number:	11019640			
Test Status:	Final			
Specimen Source:	Stool			
Specimen Quality:	Adequate			
H.pylori Ag:	Not Detected			
	Antimicrobials, proton pump inhibitors, and bismuth preparations inhibit H. pylori and ingestion up to two weeks prior to testing may cause false negative results. If clinically indicated the test should be repeated on a new specimen obtained two weeks after discontinuing treatment.			
Reference Range:	Not Detected			

Test Name	In Range	Out Of Range	Reference Range	Lab
HELICOBACTER PYLORI, UREA BREATH TEST	NOT DETECTED		NOT DETECTED	NL1
	Antimicrobials, proton pump inhibitors, and bismuth preparations are known to suppress H. pylori, and ingestion of these prior to H. pylori diagnostic testing may lead to false negative results. If clinically indicated, the test may be repeated on a new specimen obtained two weeks after discontinuing treatment. However, a positive result is still clinically valid.			

For follow-up testing, I decided to do the *H. pylori* portion of the DSL test this time only, but I also added on a Quest [Diagnostics] *H. pylori* stool antigen and the urea breath test just to have more information to base my next treatment plan on. I'll often do this when I only have the DSL [and] PSR to go off of, just because of what I mentioned in the past of having this huge portion of patients test positive for *H. pylori* on the DSL. And it's really not [the] gold standard for testing at this time, so I just want to be diligent and make sure that before deciding to do more aggressive treatments, that we're really being thorough. You can see here that the value of *H. pylori* on DSL did go down a bit and is no longer considered elevated by the lab. So that's good news, I guess. [It's] something to look at, some improvement in that number. His stool antigen and urea breath test results were both negative. So, all in all, with the DSL *H. pylori* test being just slightly elevated, these two tests being negative, and him no longer having GERD-type symptoms, we decided not to continue treatment. And he had already done a prescription treatment for this once, and I'm not convinced it was worth pursuing given these lab results. I gave him the option of consulting with a gastroenterologist for a biopsy, but we both agreed that was extremely invasive, and he opted not to do it at that time. So we continued working our way through looking for triggers for ITP.