

Please review the following case studies and evaluate them to the best of your ability. You should treat these case studies as if they were your own patients and practice interpreting each lab. Don't worry, you won't have to turn in your answers for a grade. These assignments should be treated as more of a self-study tool to help you measure your progress throughout the course. We have also provided an answer key in a separate document, detailing the lab interpretation by Chris and his staff for your comparison.

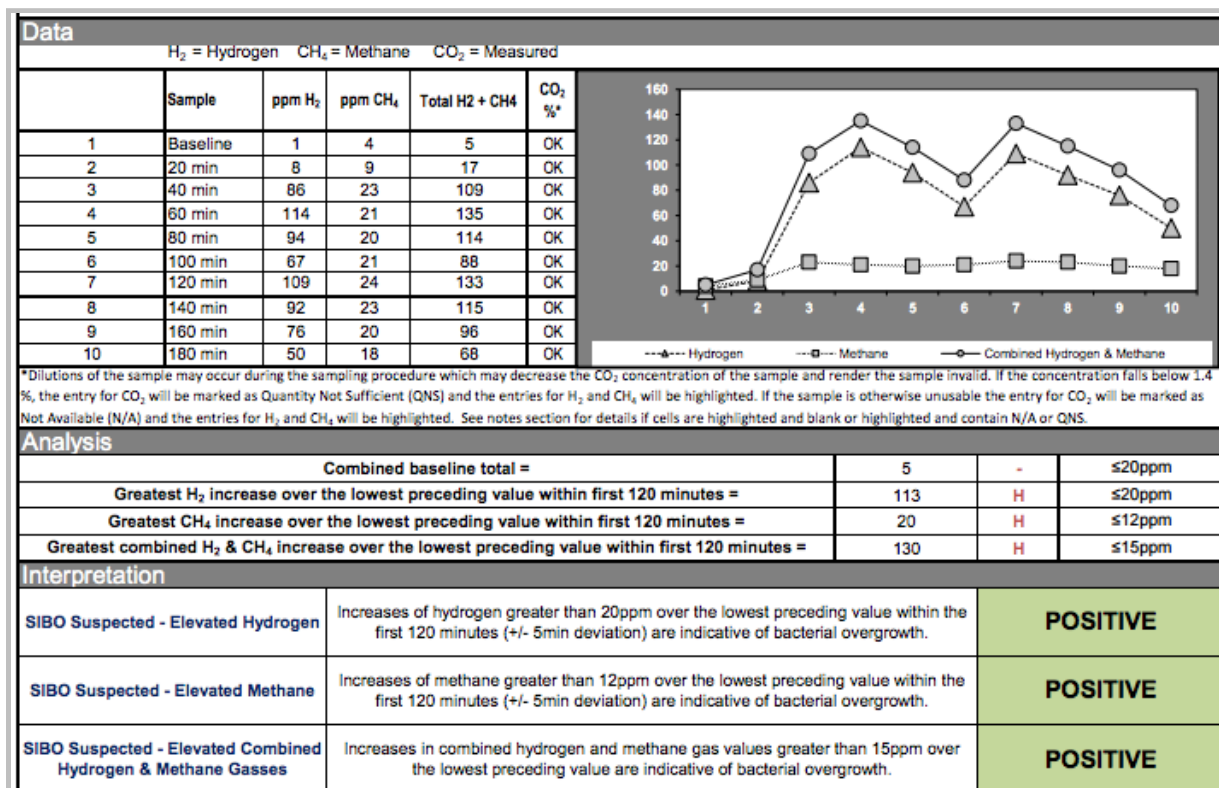
You may also want to discuss the cases with others in the ADAPT Discussion Group.

SIBO Case Assignments

Of note, all presented test results are from lactulose breath tests rather than glucose.

CASE 1:

A 65-year-old female has Hashimoto's disease, hyperlipidemia, rosacea, heart palpitations, and occasional abdominal bloating/distention.



CASE 2:

A 20-year-old male has food sensitivities, diarrhea, gas, and anxiety.

CO ₂ QC Check		Pass	
Gases	Expected	Observed	Normal/Abnormal
H ₂ †	<20 ppm	2.25	Normal
CH ₄	<10.00 ppm	0.06	Normal
H ₂ S	<5.00 ppm	9.24	Abnormal

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

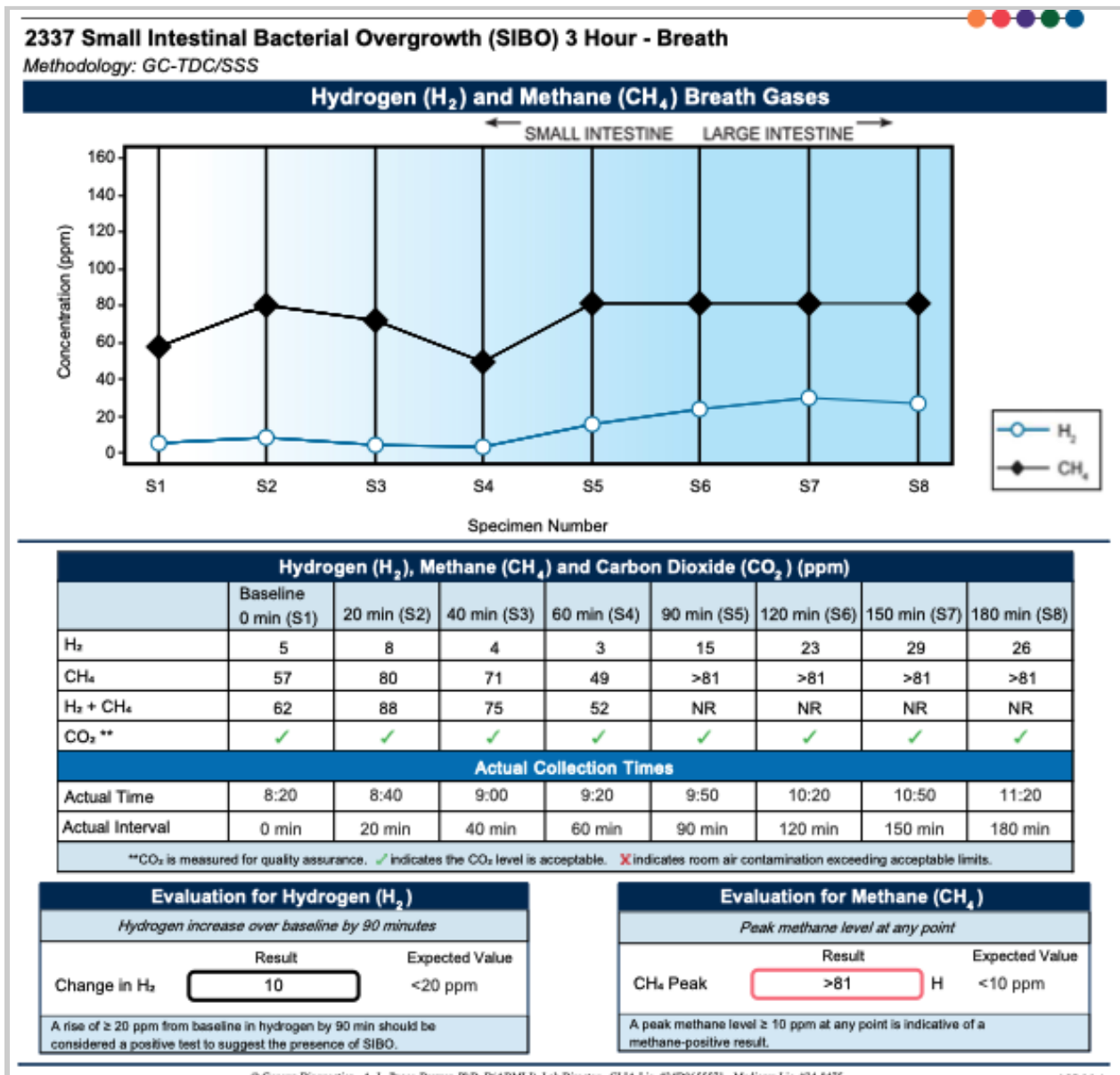
Interpretation	
Indicative of Excess Hydrogen Sulfide	

Results									
Samples	T1	T2	T3	T4	T5	T6	T7	T8	T9
Interval (hr:min)	0	17	33	49	65	80	96	111	127
Gases									
H ₂ (ppm)	0.00	2.25	0.00	0.00	0.00	0.00	3.37	3.29	11.00
CH ₄ (ppm)	0.06	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00
H ₂ S (ppm)	9.24	6.21	5.81	6.61	6.97	5.43	7.07	8.08	7.25

Suboptimal Sample-Bag Deflated (T1, T6)

CASE 3:

A 68-year-old female has Parkinson’s disease and associated mild hand tremor. She reports otherwise being in good health and has no digestive complaints. Small intestinal bacterial overgrowth (SIBO) is associated with Parkinson’s disease in the scientific literature, so the positive finding is not surprising.



CASE 4:

A 42-year-old male has high cholesterol, impaired fasting glucose, mild reflux, and diarrhea that comes and goes.

CO ₂ QC Check		Pass	
Gases	Expected	Observed	Normal/ Abnormal
H ₂ †	<20 ppm	7.99	Normal
CH ₄	<10.00 ppm	24.90	Abnormal
H ₂ S	<5.00 ppm	10.00	Abnormal

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

Interpretation	
Indicative of Intestinal Methanogenic Overgrowth and Excess Hydrogen Sulfide	

Results									
Samples	T1	T2	T3	T4	T5	T6	T7	T8	T9
Interval (hr:min)	0	15	30	45	60	75	90	105	120
Gases									
H ₂ (ppm)	0.00	0.08	0.00	7.99	4.54	1.65	0.50	3.03	1.36
CH ₄ (ppm)	3.99	4.70	9.53	5.37	16.33	10.50	24.90	11.91	13.16
H ₂ S (ppm)	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00

CASE 5:

A 52-year-old female has complaints of “silent reflux,” upper gastrointestinal discomfort after meals, irritable bowel syndrome mixed type, fatigue, and depressed mood. Gut symptoms started after a trip to Mexico 5 years ago and again worsened 1 year ago after another food illness episode.

CO ₂ QC Check		Pass	
Gases	Expected	Observed	Normal/Abnormal
H ₂ †	<20.09 ppm	44.23	Abnormal
CH ₄	<10.00 ppm	23.13	Abnormal
H ₂ S	<5.00 ppm	10.00	Abnormal

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

Interpretation	
Indicative of Small Intestinal Bacterial Overgrowth, Intestinal Methanogenic Overgrowth, and Excess Hydrogen Sulfide	

Results									
Samples	T1	T2	T3	T4	T5	T6	T7	T8	T9
Interval (hr:min)	0	17	32	47	62	77	92	107	122
Gases									
H ₂ (ppm)	0.09	1.81	1.77	2.21	8.61	44.23	56.45	59.95	45.22
CH ₄ (ppm)	23.13	22.78	22.45	20.52	21.47	21.87	21.31	20.23	17.89
H ₂ S (ppm)	8.83	10.00	10.00	10.00	9.48	9.01	10.00	10.00	10.00

Suboptimal Sample-Bag Deflated (T1-T3)

RESULTS		
Antibody Detected	Patient Value (OD)	Antibody Levels
Anti-CdtB Ab	0.35	Not Elevated
Anti-Vinculin Ab	2.81	Elevated

ABOUT THE ASSAY		
<p>Diarrhea-predominant irritable bowel syndrome (IBS-D) is a gastrointestinal disorder affecting 10-15% of the population. Host antibodies to CdtB cross-react with vinculin, a protein in the intestinal lining, leading to a small intestinal bacterial overgrowth (SIBO) and IBS-like phenotype. Elevated levels of anti-CdtB and anti-vinculin antibodies have been identified in IBS-D and IBS-M patients compared to patients with inflammatory bowel disease (IBD).^{1,2}</p> <p>Results were achieved using ELISA test methodology. An elevated result supports the diagnosis of diarrhea-predominant or mixed-typed IBS. A normal result does not preclude the diagnosis of IBS-D or IBS-M due to the low negative predictive value. The <i>ibs.smart</i>™ assay has a specificity of 94% for anti-CdtB and 91% for anti-vinculin and a positive predictive value of 96% for anti-CdtB and 91% for anti-vinculin. An indeterminate result is denoted as (*) and indicates a level beyond the measurable range of the assay.</p>		
	Reference Interval	Reportable Range
Anti-CdtB Ab	0.00 – 1.56	0.00 – 4.00
Anti-Vinculin Ab	0.00 – 1.60	0.00 – 4.00