BioHealth LABORATORY Quality First.
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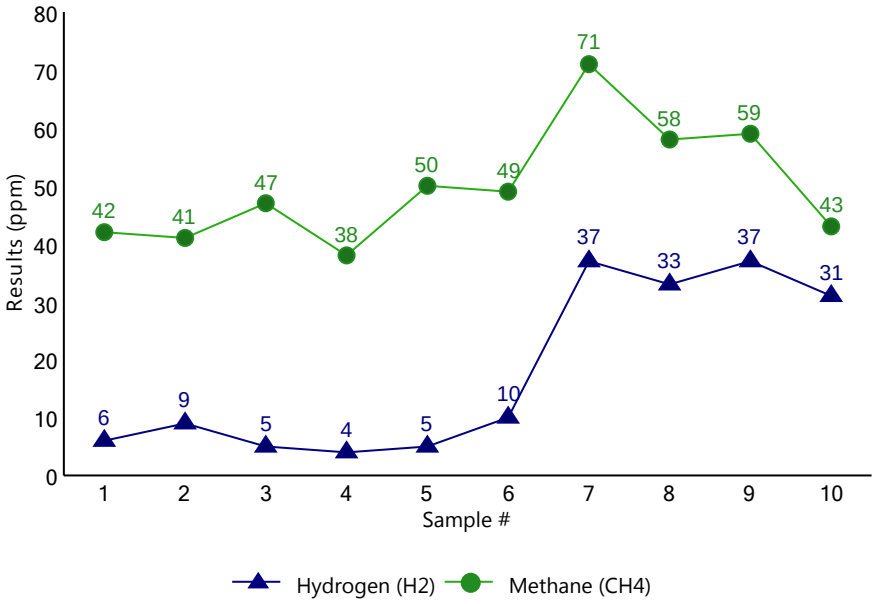
Small Intestinal Bacterial Overgrowth

for **Rebecca Stein**

Accession #T044665

Authorizing Clinician	Patient	Collected	Received	Reported
BioHealth Laboratory 23900 Hawthorne Blvd, Suite 150 Torrance, CA 90505	**Rebecca Stein** Gender: Female DOB: 11/26/1968	04/12/2017	04/14/2017	04/17/2017

Small Intestinal Bacterial Overgrowth (SIBO) 3 Hour Lactulose (#900)



Collection Time	ppm H2	ppm CH4	Sum H2 and CH4	CO2*
1. Baseline	6	42	48	OK
2. 20 min	9	41	50	OK
3. 40 min	5	47	52	OK
4. 60 min	4	38	42	OK
5. 80 min	5	50	55	OK
6. 100 min	10	49	59	OK
7. 120 min**	37	71	108	OK
8. 140 min	33	58	91	OK
9. 160 min	37	59	96	OK
10. 180 min	31	43	74	OK

* Samples are corrected for Carbon Dioxide (CO2) concentration to account for variations in collection. Invalid samples are categorized as Quantity Not Sufficient (QNS).

**120 minutes is the typical time at which the biomarker travels from the small intestine to the colon. However, slow transit times will result in SIBO markers during the last hour.

Summary of Results			
Trace Gas Markers:	**Result (ppm):**	**Guideline:**	**Interpretation:**
Baseline Hydrogen (H2)	6	Normal: <= 20 ppm	Normal
Greatest Hydrogen (H2) rise over lowest previous value in first 120 minutes	33	Normal: <= 20 ppm	**Elevated**
Greatest Methane (CH4) rise over lowest previous value in first 120 minutes	33	Normal: <= 12 ppm	**Elevated**
Greatest rise in the combined sum of Hydrogen (H2) and Methane (CH4) over lowest previous sum in first 120 minutes	66	Normal: <= 15 ppm	**Elevated**
Peak Methane (CH4) at any point in the test	71	Normal: <= 3 ppm	**Elevated**

Interpretive Guidance

Small Intestinal Bacterial Overgrowth (SIBO) is suspected if one or more of the following criteria are met. These guidelines are for research purposes only. The results should be interpreted by the clinician in the context of the patient's symptoms and other external diagnostic data. It is important to note that, due to slow transit times in some patients, reactions may occur in the final hour of testing.

Elevated Baseline: A baseline hydrogen gas result of greater than or equal to 20 ppm may be an indication of bacterial

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overgrowth.

Elevated Hydrogen: In the first 120 minutes after ingesting the solution, an increase in hydrogen gas of greater than or equal to 20 ppm from the lowest previous result may be an indication of bacterial overgrowth.

Elevated Methane: In the first 120 minutes after ingesting the solution, an increase in methane gas of greater than or equal to 12 ppm from the lowest previous result may be an indication of bacterial overgrowth. Additionally, methane results may not increase and instead stay elevated throughout all collections (See Peak Methane).

Elevated Sum of Hydrogen and Methane: In the first 120 minutes after ingesting the solution, an increase in the sum of hydrogen and methane gas results of greater than or equal to 15 ppm from the lowest previous sum may be an indication of bacterial overgrowth.

Peak Methane: In any of the collections, a methane gas result of greater than or equal to 3 ppm may suggest methanogen overgrowth. Studies have shown a relationship between methane production and constipation-predominant IBS.

References:

1. Dukowicz AC, Lacy BE, Levine GM. Small Intestinal Bacterial Overgrowth: A Comprehensive Review. *Gastroenterology & Hepatology*. 2007;3(2):112-122.
2. Saad RJ, Chey WD. Breath Testing for Small Intestinal Bacterial Overgrowth: Maximizing Test Accuracy. *Clinical Gastroenterology and Hepatology.* 2014;12:1964-1972.