

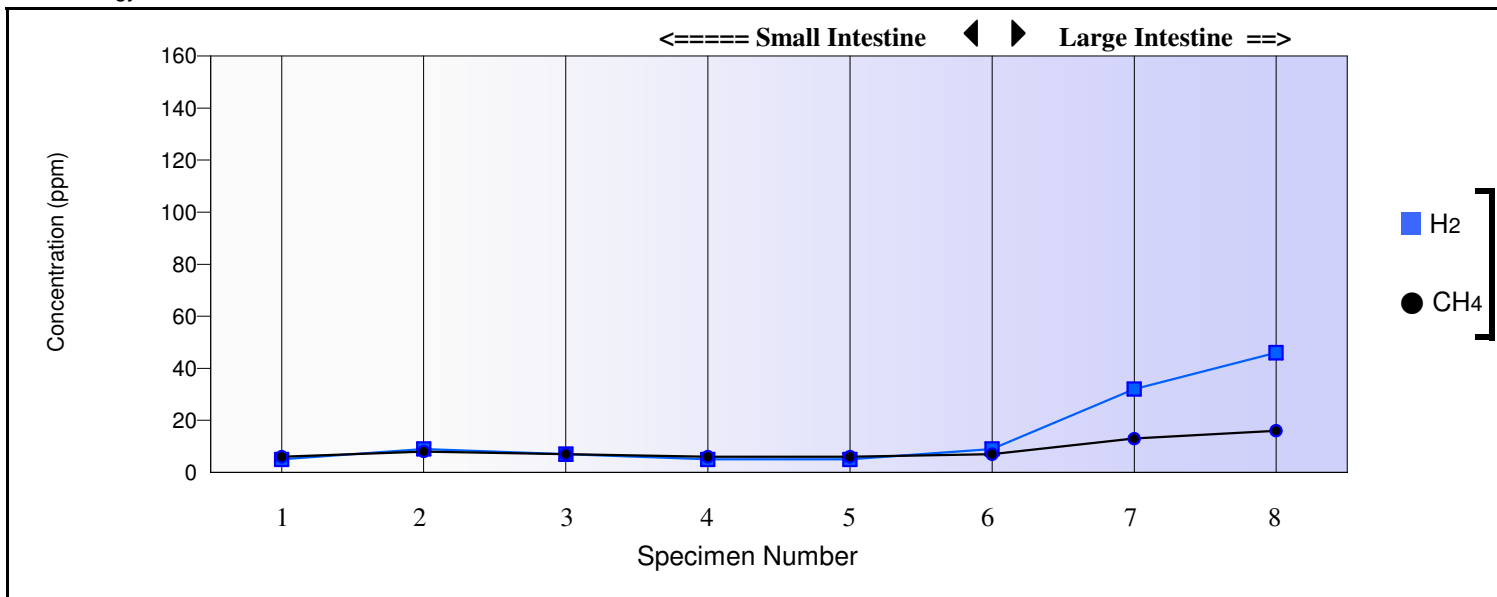


3921135

## SMALL INTESTINAL BACTERIAL OVERGROWTH (SIBO) - 3 HOUR Breath Test

### Hydrogen (H<sub>2</sub>) and Methane (CH<sub>4</sub>) Breath Gases

Methodology: GC-TCD/SSS



### Hydrogen (H<sub>2</sub>), Methane (CH<sub>4</sub>) and Carbon Dioxide (CO<sub>2</sub>) (ppm)

|                                  | S1<br>0 mins | S2<br>20 mins | S3<br>40 mins | S4<br>60 mins | S5<br>90 mins | S6<br>120 mins | S7<br>150 mins | S8<br>180 mins |
|----------------------------------|--------------|---------------|---------------|---------------|---------------|----------------|----------------|----------------|
| H <sub>2</sub>                   | 5            | 9             | 7             | 5             | 5             | 9              | 32             | 46             |
| CH <sub>4</sub>                  | 6            | 8             | 7             | 6             | 6             | 7              | 13             | 16             |
| H <sub>2</sub> + CH <sub>4</sub> | 11           | 17            | 14            | 11            | 11            | 16             | 45             | 62             |
| CO <sub>2</sub> **               | II           | II            | II            | II            | II            | II             | II             | II             |

### Actual Collection Times

|                 |      |      |      |      |      |       |       |       |
|-----------------|------|------|------|------|------|-------|-------|-------|
| Actual Time     | 8:00 | 8:20 | 8:40 | 9:00 | 9:30 | 10:00 | 10:32 | 11:00 |
| Actual Interval | 0    | 20   | 40   | 60   | 90   | 120   | 152   | 180   |

\*\* CO<sub>2</sub> is measured for quality assurance: II indicates the CO<sub>2</sub> level is acceptable O indicates room air contamination exceeding acceptable limits

### Evaluation for Hydrogen (H<sub>2</sub>)

Hydrogen increase over baseline by 90 minutes

|                          | Result | Expected Value |
|--------------------------|--------|----------------|
| Change in H <sub>2</sub> | 4      | < 20 ppm       |

A rise of  $\geq 20$ ppm from baseline in hydrogen by 90 min should be considered a positive test to suggest the presence of SIBO

### Evaluation for Methane (CH<sub>4</sub>)

Peak methane level at any point

|                      | Result | Expected Value |
|----------------------|--------|----------------|
| CH <sub>4</sub> Peak | 16     | < 10 ppm       |

A peak methane level  $\geq 10$  ppm at any point is indicative of a methane-positive rise



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LAB ID : 3921135  
UR NO. : 6185226  
Collection Date : 18-Sep-2023  
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### Laboratory Comments

#### GENERAL CONSIDERATIONS FOR BREATH TESTING

Small Intestinal Bacterial Overgrowth (SIBO) is a heterogeneous syndrome characterised by an increase in the number and/or the presence of atypical microbiota in the small intestine. The SIBO breath test relies on measurement of gases (Hydrogen and Methane) produced by microbiota in the intestine following ingestion of lactulose in a fasting state. The test also measures Carbon Dioxide as an indicator of correct collection procedure. Carbon Dioxide levels exceeding acceptable limits indicate room air contamination likely at the time of sample collection. The integrity of these samples is questionable and results are designated as " X " (NR-Non-Reportable).

The transit time of lactulose in healthy fasting patients is approximately 90 minutes, but is found to vary in other patients. As such, transit time should be taken into consideration when interpreting breath testing results.

#### REPORT INTERPRETATION:

SIBO Test results need to be viewed in terms of Hydrogen production, Methane production and Total Hydrogen and Methane production.

A rise in Hydrogen of >20 ppm over baseline in the first 90 minutes of testing, is considered SIBO-Positive.

A peak methane level >10 ppm at any point indicates a methane-positive result, and is considered SIBO-Positive.

A rise in the combined gases (Hydrogen and Methane) level over baseline of 12 - 32 ppm is indicative of a mild SIBO condition, whilst a level of 33 ppm or greater is indicative of a severe SIBO condition.

#### YOUR SUMMARY:

This report indicates normal Hydrogen levels with elevated Methane levels which is interpreted as indicative of Methane-POSITIVE SIBO.

However this result should also be viewed in conjunction with the Hydrogen result, as low Hydrogen levels through all time points in the presence of Normal High to Elevated Methane results, may be due to methane-producing bacteria consuming available hydrogen molecules to produce methane gas, resulting in a possible false negative Hydrogen-Positive result.

Utilisation of breath methane levels for SIBO assessment is controversial largely due to a lack of validation related to diagnostic specifics such as timing and magnitude of increase; however, Methane measurements are increasingly obtained to address other clinical questions. Recent evidence has associated Methane production with the pathogenesis of common clinical conditions, such as obesity, irritable bowel syndrome (IBS), and constipation.

It should be noted that the peer-reviewed literature suggests an association with certain clinical conditions and methanogen overgrowth at levels as low as 3 ppm. Methane values between 3 and 9 ppm may indicate the need for clinical intervention in the symptomatic patient.

Suggested antibiotics for treatment of positive Methane SIBO:

Rifaxamin 400mg t.i.d. and Neomycin 500mg b.i.d.  
The treatment should last 10 days.

As SIBO may recur following a course of antibiotics, it is common practice to retreat with another course of antibiotics or use alternative treatment options.

Intestinal disorders such as parasites, infections, food intolerances diminished enzyme and HCL production, dysbiosis and a lack of fibre can mimic SIBO-like symptoms.



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If no symptoms have improved at the end of 4 weeks, it is suggested to investigate with further testing such as:

CDSA Level 1 Code 2003  
IgG 96 Foods-General Code 3206