



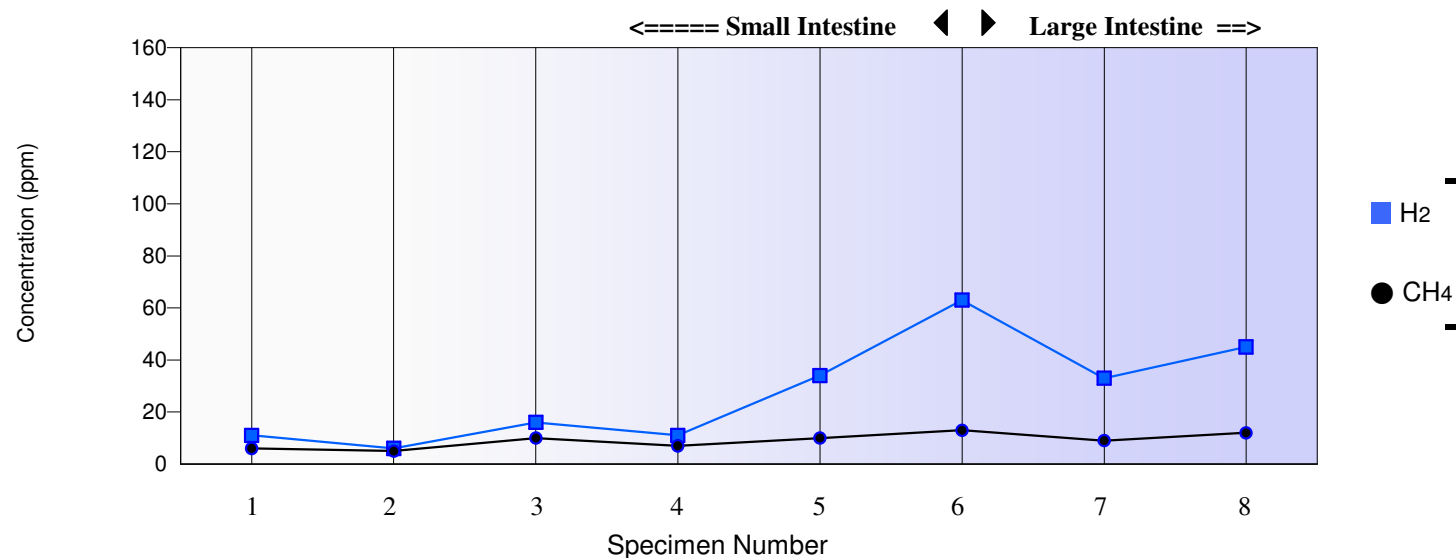
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Date of Birth : 10-May-1975  
Sex : F  
Collected : 20/Jul/2020  
Received: 22-Jul-2020  
58 ALEXANDER STREET  
MANLY NSW 2095  
Lab id : **3679792** UR#: 6564302

13 ILUKA AVENUE  
MANLY NSW 2095

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

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



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

	S1 0 mins	S2 20 mins	S3 40 mins	S4 60 mins	S5 90 mins	S6 120 mins	S7 150 mins	S8 180 mins
H <sub>2</sub>	11	6	16	11	34	63	33	45
CH <sub>4</sub>	6	5	10	7	10	13	9	12
H <sub>2</sub> + CH <sub>4</sub>	17	11	26	18	44	76	42	57
CO <sub>2</sub> **	✓	✓	✓	✓	✓	✓	✓	✓

### Actual Collection Times

Actual Time	9:10	9:30	9:50	10:10	10:40	11:10	11:40	12:10
Actual Interval	0	20	40	60	90	120	150	180

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

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

Hydrogen increase over baseline by 90 minutes

Change in H<sub>2</sub>      Result      Expected Value  
23      < 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

CH<sub>4</sub> Peak      Result      Expected Value  
13      < 10 ppm

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





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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.

### FALSE POSITIVES:

Falsely elevated findings may result from incorrect preparation for performing the SIBO test, incomplete avoidance of high-fibre foods, residual fibre in the intestine due to delayed transit time, residual oropharyngeal (mouth and throat) bacteria, and exposure to tobacco smoke, or napping during collection.

### 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:

#### HYDROGEN INTERPRETATION

This report indicates an elevated rise in Hydrogen levels (23 ppm) which is indicative of a SIBO-POSITIVE result, and often closely associated with SIBO-related symptoms.

If a patient who has been suffering from SIBO associated symptoms, it is likely that they have tried a low-FODMAP diet which has shown significant improvements in their symptoms. It should be noted that this will not address the root cause.

#### METHANE INTERPRETATION:

This report indicates an elevated rise in Methane levels (13 ppm).

A peak methane level >10 ppm at any point is indicative of a Methane-POSITIVE result and is considered SIBO-POSITIVE.

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.

### TREATMENT CONSIDERATIONS:

During treatment, the patient should focus on eating a predominantly balanced whole food diet with a wide range of animal and plant based foods. Alcohol should be avoided.

Conventional approach:



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Antibiotics for SIBO suggests that Rifaximin is the most commonly used antibiotic for treatment of SIBO.

However, if hydrogen and methane are both elevated, rifaximin may be administered with neomycin showing an 85% treatment rate.

#### Dosage:

Rifaximin 400mg t.i.d if hydrogen dominant.

Rifaximin 400mg t.d.s and neomycin 400mg b.d.s for methane.

The treatment should last 14 days.

#### Naturopathic approach:

A combination of herbal antimicrobials is suggested. It should be noted that a rotation of herbal antimicrobials is important to avoid the bacteria from building up resistance to the same herbs administered.

Below is a suggestive rotation treatment plan:

Week 1-4:

Antimicrobials rotate at two week intervals using a combination of:

Garlic, Wormwood, Oregano oil, Lavender oil and Phellodendron Black walnut, Wormwood, Barberry, Garlic, Citrus Xparadisi, Thyme oil, Rosemary oil, Oregano oil.

#### PLEASE NOTE:

Try to incorporate berberine herbs, essential oils and garlic.

-Exercise regularly 20-30 minutes a day

-Avoid alcohol

-Introduce foods rich in fibre as they act as a prebiotic to help support healthy gut flora.

-Partially hydrolysed guar gum 5g/day

-Ibrogast 20 drops TDS

-Saccharomyces boulardii probiotic (250mg-1g per day)

-Digestive enzymes - 1 tablet 20 minutes before main meals

-N-acetylcysteine 600mg - 1200mg per day

NOTE: Herbal anti-microbial and antibiotics may be used together to increase therapeutic outcomes, or can be used intermittently together.

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

Recommended follow up testing to be considered:

CDSA 3+ Code 2006

IgG96 Foods-General Code 3206

Organix Code 4041