KRESSER INSTITUTE
FOR FUNCTIONAL AND EVOLUTIONARY MEDICINE

SIBO Breath Testing

Interpretation Guide

North American Consensus Criteria

- Single peak of H2 greater than or equal to 20 ppm before 90 min is considered positive.
- Argue that double peal should not be used to diagnose SIBO and has no validity.
- A methane level of greater than or equal to 10 ppm, at any point on the test, is considered methane-positive.

Double Peak Testing Criteria

Lactulose Breath Test

- **SIBO:** Rise in hydrogen at least 15 minutes before the substrate enters the colon. A second peak results once it enters the colon.
- **Healthy:** Rise in hydrogen once the substrate reaches the colon, but not before.

Glucose Breath Test

- **SIBO:** Early rise in hydrogen of about 15 ppm above baseline.
- **Normal:** No rise in hydrogen (since glucose is absorbed prior to reaching the colon).

1. Both tests have **high specificity,** so a low chance of false positives.
2. Both tests have **low sensitivity,** so a high chance of false negatives.

Comparison of Glucose and Lactulose as substrates

Substrate	Advantage	Disadvantage	Risk
Glucose	More specific	Greater risk of *false negative*	Under-treatment
Lactulose	More sensitive	Greater risk of *false positive*	Over-treatment

SIBO Breath Test Interpretation Criteria Comparison

Criteria	H_2 (Hydrogen)	CH_4 (Methane)	$H_2 + CH_4$
Quintron	↑ ≥20 ppm **over lowest preceding value** within 120 min of lactulose	↑ ≥12 ppm **over lowest preceding value** within 120 min of lactulose	↑ ≥15 ppm **over lowest preceding value** within 120 min of lactulose
NUNM	↑ ≥20 ppm **at any point during test** within 120 min of lactulose	↑ ≥12 ppm **at any point during test** within 120 min of lactulose	↑ ≥15 ppm **at any point during test** within 120 min of lactulose
2017 Consensus	↑ ≥20 ppm **at any point during test** within 90 min of lactulose	Methane levels ≥10 ppm **at any point during test**	N/A

Which interpretation to use?

- This depends on your practice and preferences.
- If you're using more **liberal** criteria, there is an **increased risk of false positives and overtreatment.**
  - Risks: miss the actual underlying problem, and SIBO treatment can be expensive.
- If you're using more **conservative** criteria, there is an **increased risk of false negatives and undertreatment.**

Special Considerations

- Higher risk of **false positives**
  - Diarrhea/fast transit times
  - Young children (especially infants)
  - Crohn's disease, celiac disease
  - Laxatives, prokinetics, and other drugs that increase transit time
- Higher risk of **false negatives**
  - Constipation
  - Elderly
  - Gastroparesis, GI motility disorders, intestinal pseudo-obstruction (i.e., things that decrease transit time)
  - PPIs, opiates, and other drugs that decrease transit time