

# Bacterial Overgrowth of the Small Intestine

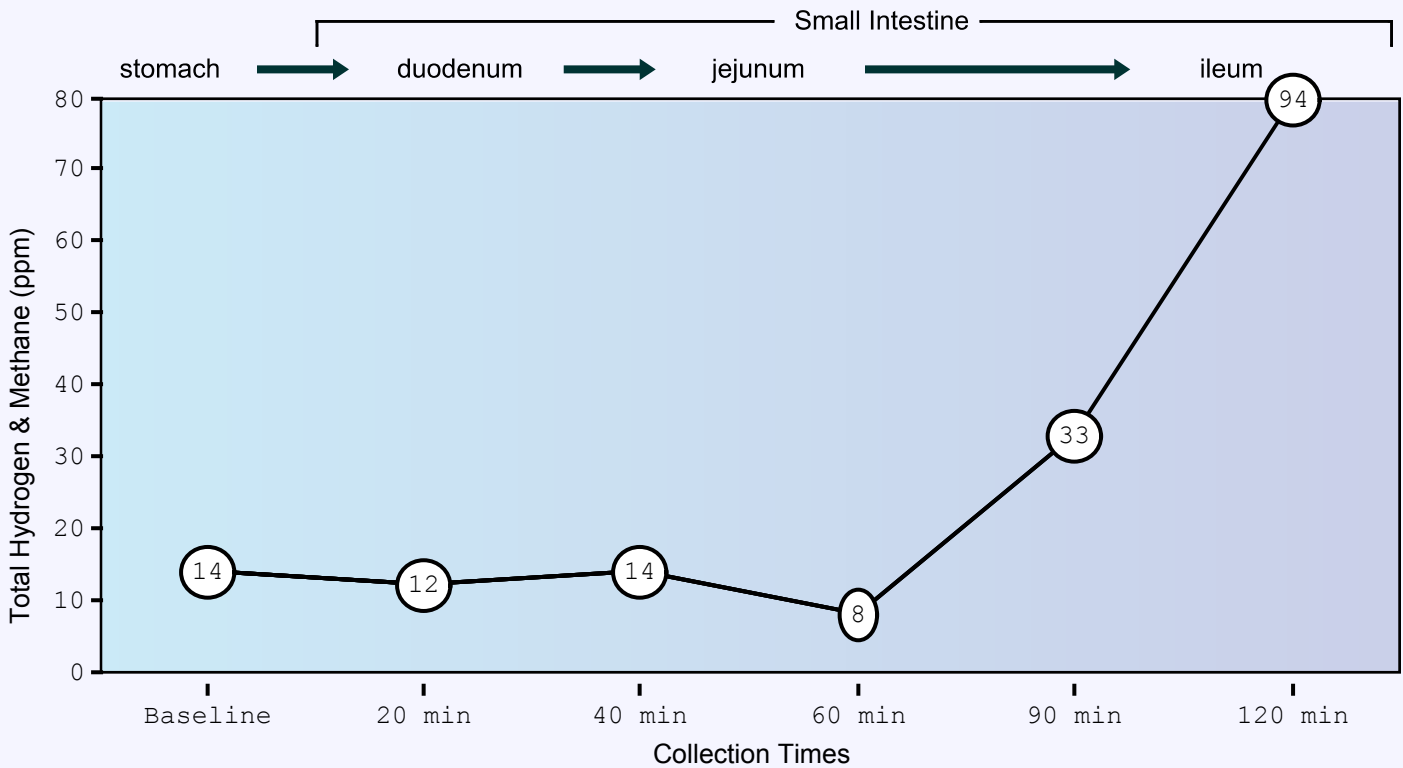
## Breath Test



63 Zillicoa Street  
Asheville, NC 28801  
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Patient: **SAMPLE PATIENT**  
 Order Number: Completed: February 26, 2010  
 Received: February 15, 2010  
 DOB: November 24, 1937  
 Sex: F Collected: February 12, 2010  
 MRN:

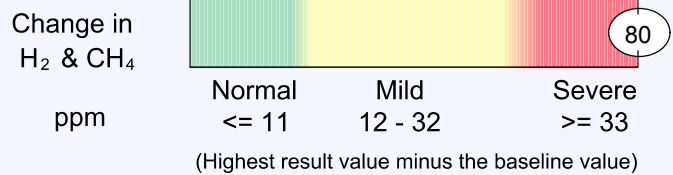
### Total Hydrogen and Methane Breath Gases



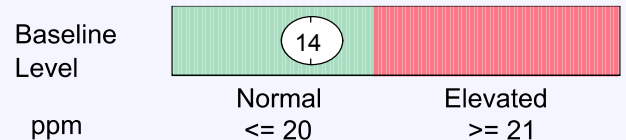
### Hydrogen & Methane (ppm)

Minutes	Base-line	20	40	60	90	120
Hydrogen (H <sub>2</sub> )	11	8	11	4	30	89
Methane (CH <sub>4</sub> )	3	4	3	4	3	5
<b>Total</b>	<b>14</b>	<b>12</b>	<b>14</b>	<b>8</b>	<b>33</b>	<b>94</b>

### Increase over Baseline



### Baseline Evaluation



This test was developed and its performance characteristics determined by Genova Diagnostics, Inc. It has not been cleared or approved by the U.S. Food and Drug Administration.

### ***Commentary***

Commentary is provided to the practitioner for educational purposes, and should not be interpreted as diagnostic or treatment recommendations. Diagnosis and treatment decisions are the responsibility of the practitioner.

#### ***Bacterial Overgrowth of the Small Intestine***

Few bacteria normally inhabit the small intestine, compared to the ample growth found in the colon. If bacteria are excessive in the small intestine, they will ferment the lactulose challenge drink and produce hydrogen and/or methane gas(es), which are absorbed into the bloodstream and then released into the breath. An early rise in breath gases, within the first hour or so after lactulose ingestion, typically indicates bacterial overgrowth in the proximal small intestine. The earlier the peak, the higher in the small intestine the overgrowth is likely to be.

An increase in breath gases in the 5th or 6th specimen (90 and 120 minutes, respectively) usually reflects bacterial overgrowth in the distal ileum.

#### ***Your results:***

Your breath test for bacterial overgrowth showed a net increase in total breath gases of >32 ppm. This represents severe bacterial overgrowth of the small intestine. Treatment with antimicrobials may be indicated, depending on the clinical picture. Common signs and symptoms include gas and bloating, diarrhea, abdominal cramps, steatorrhea, malabsorption, and nutrient insufficiencies, particularly vitamin B12. Causes include achlorhydria or hypochlorhydria, chronic maldigestion, reduced transit time, Crohn's disease, diabetes mellitus, and intestinal stasis from various causes.

False positive results are possible (especially for elevated hydrogen) with incomplete avoidance of high-fiber foods, exposure to tobacco smoke or napping during collection.