



Bacterial Overgrowth of the Small Intestine

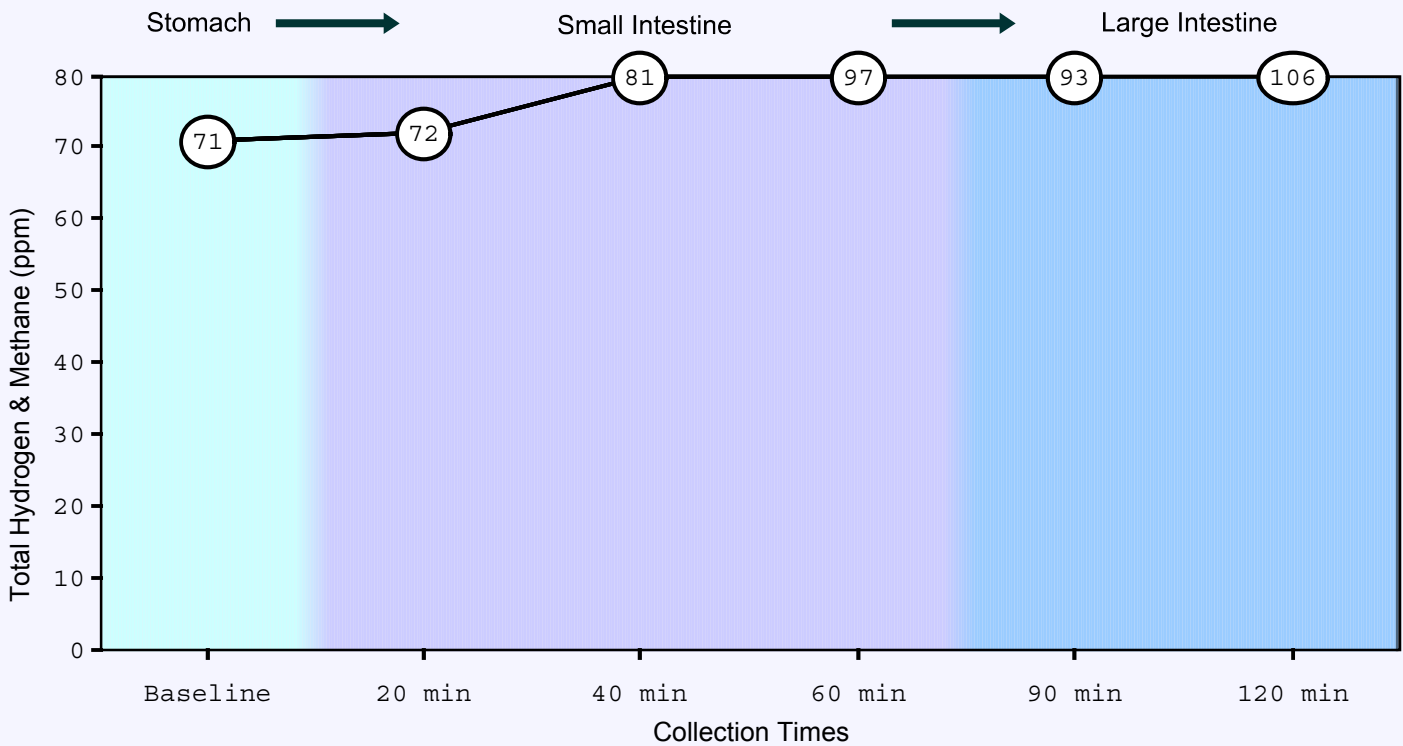
Breath Test

Great Smokies Diagnostic LaboratorySM

63 Zillicoa Street · Asheville, NC 28801-1074
www.gSDL.com

Patient: **Order Number:** INSTITUUT VOOR FUNCTIONELE GENEESKUNDE
 Completed: Mathaak 3
 Age: Received: Malden, 6581VK
 Sex: Collected: THE NETHERLANDS
 MRN:

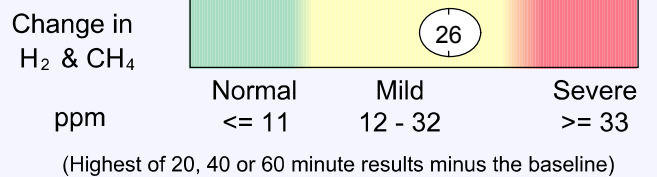
Total Hydrogen and Methane Breath Gases



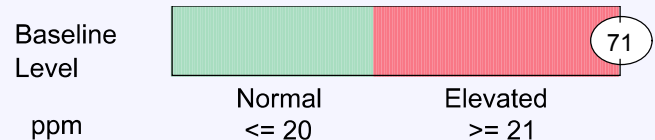
Hydrogen & Methane (ppm)

Minutes	Base-line	20	40	60	90	120
Hydrogen (H ₂)	70	71	80	96	92	105
Methane (CH ₄)	1	1	1	1	1	1
Total	71	72	81	97	93	106

Change from Baseline



Baseline Evaluation



This test was developed and its performance characteristics determined by GSDL, 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 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 colonic bacteria and is considered normal, although in some cases of slow transit may indicate bacterial overgrowth in the distal ileum. An absent rise from baseline in the 5th and 6th specimen may indicate unusually slow transit time or hyperacidity in the colon (a decrease in stool pH from 7.0 to 5.5 can reduce hydrogen generation up to 75%).

Your results:

Your breath test for bacterial overgrowth showed a net increase in total breath gases of 12 to 32 ppm. This amount of increase in breath gases usually suggests mild bacterial overgrowth of the small intestine, although an elevated baseline value may indicate a greater degree of overgrowth. Treatment with antimicrobials may or may not 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 (absent or low stomach acid), chronic maldigestion, reduced transit time, Crohn's disease, diabetes mellitus, and intestinal stasis from various causes.

An elevated level of breath gases prior to the ingestion of lactulose may result from incomplete avoidance of high-fiber foods, residual fiber in the intestine due to delayed transit time, residual oropharyngeal (mouth and throat) bacteria, exposure to tobacco smoke or napping during collection, or may indicate bacterial overgrowth of the small intestine, particularly if elevated methane predominates.