Wrightington, Wigan and Leigh Teaching Hospitals
NHS Foundation Trust

Hydrogen Breath Test Pathway

Version number: **1**
Last modified date: **12th November 2026**

Hydrogen Breath Test Pathway

Patient Information

Endoscopy Services

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- Version: 1
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- Date Produced: May 2026
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Patients Name:……..

Date of Birth:……

NHS Number: ……

Consultant:……

Date of Test:……..

Test Being Undertaken:……

Introduction

A **Hydrogen breath test** is a non-invasive diagnostic tool used primarily to help diagnose **small intestinal bacterial overgrowth (SIBO)** and **intestinal methanogenic overgrowth (IMO)**. It helps determine the root cause of various gastrointestinal symptoms like bloating, abdominal pain, diarrhoea, and constipation.

How It Works

1. **Ingestion:** The patient drinks a solution containing Lactulose/Dextrose/Lactose, a type of sugar that humans cannot digest or absorb in the small intestine.

2. **Bacterial Fermentation:** Ideally, the Lactulose passes through the small intestine and reaches the large intestine, where it is fermented by the normal gut bacteria.

3. **Gas Production:** If an excessive amount of bacteria is present in the small intestine (SIBO/IMO), it will ferment the Lactulose earlier than normal, producing gases like hydrogen and methane.

4. **Measurement:** These gases are absorbed into the bloodstream and exhaled through the lungs. A healthcare professional collects breath samples at timed intervals over several hours to measure the levels of these gases. An early rise in gas levels indicates a positive result for bacterial overgrowth.

The Recommended Dosage:

Lactulose dose - 10ml/g with or in 300ml water

Lactose dose - 25ml/g in 300ml water

Dextrose dose - 75ml/g in 300 ml water

Prior to The Breath Test

- Antibiotics should be avoided for **4 weeks**
- Patients should not have had colonoscopy or any full bowel cleansing preparation, including colonic lavage, for at least 1 week
- Patients should ideally have refrained from motility enhancing drugs or laxatives for a week
- Do not use a suppository prior to testing, to ensure recent bowel motion at the time of the test is acceptable

- Patients should not eat ‘fermentable’ foods e.g. complex carbohydrates, for at least 24 hours (see below)

Only the following foods are permitted during the 24-hour preparatory diet period:

- Baked or grilled seafood, chicken, turkey, lean beef, or pork
- Eggs
- Plain white rice
- Coffee or tea, **without** milk or water
- Minimal oils for cooking, salt and pepper

The following foods/drinks are not allowed during the 24-hour preparatory diet. These are:

- Alcohol
- Dairy
- Beans

- Wheat
- Grains
- Fruits and vegetables
- High fibre containing foods

If patients have special dietary requirements, they should contact their referring physician for advice.

- Patients should fast for 12 hours before the Breath Test. Drinking of some water is acceptable during these 12 hours.
- Patients should not smoke tobacco products or e-cigarettes on the day of the test
- There is no clear guidance on stopping PPIs (Proton Pump Inhibitors) prior to their breath test, so at present, studies can be performed on PPI therapy
- There is no clear guidance on stopping probiotics before breath testing. However, as taking probiotics introduces bacteria into the upper gut, we suggest stopping probiotics at least 1 week prior to testing
- Patients are warned of the potential for increased symptoms resulting from the substances being administered
- Patients may clean their teeth and/ or rinse with a mouthwash prior to baseline breath measurement and following ingestion of the provocation dose, but the toothpaste or

mouthwash should not be swallowed, and the mouth should be rinsed with water, as both products can contain artificial sweetener.

Testing

Hydrogen breath tests involve taking baseline breath samples, drinking the solution, and then providing further samples at timed intervals, typically **every 15 minutes for the first 90-120 minutes, and then every 30 minutes for the next hour or so, totalling 2-3 hours** .

Risks

The most commonly perceived symptom in both the Lactulose and Glucose breath test group was bloating (80-87%). Other symptoms were abdominal pain (54-57%), constipation (51-53%), increased gas (47%) and diarrhoea (39-47%)

Benefits

- Hydrogen breath tests can help identify patients with diarrhoea-predominant Irritable Bowel Syndrome.
- They are safe, simple and non-invasive
- Antibiotic therapy can be tailored, based on breath test pattern

On The Day

Consultant:

Patient Identifier/Sticker:

TEST TO BE PERFORMED ……..

- Have you had antibiotic treatment in the last 4 weeks?
  yes/no
- Have you eaten high fibre foods within the past 24 hours?
  yes/no
- Have you fasted for at least 12 hours?
  yes/no
- Have you avoided sleeping, smoking and exercise for the past 30 minutes?
  yes/no
- Are you aware of the risks and benefits listed above?
  yes/no
- Do you consent to the test being carried out?
  yes/no

During The Test

Base line Hydrogen level ----------

Ingest the solution

Breath Hydrogen Levels at:

15 minutes ----------

30 minutes ----------

45 minutes ----------

60 minutes ----------

75 minutes ----------

90 minutes ----------

120 minutes ----------

150 minutes ----------

180 minutes ----------

210 minutes ----------



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