

Patient information factsheet

How to perform a breath test for small intestinal bacterial overgrowth (SIBO) at home

We have given you this factsheet because we would like you to perform a breath test for small intestinal bacterial overgrowth (SIBO) at home. It explains what SIBO is, what the breath test involves, how to prepare for it and how to perform it safely at home. We hope it will help to answer some of the questions you may have. If you have any further questions or concerns, please speak to a member of our team.

Please make sure you read this information and follow the instructions carefully before performing the test. If you do not follow these instructions, you may produce inaccurate results.

What is small intestinal bacterial overgrowth (SIBO)?

It is normal to have bacteria in your large intestine, as it helps with the digestion of food. However, if you have too much bacteria in your small intestine, it can interfere with digestion. This is a condition known as small intestinal bacterial overgrowth (SIBO). SIBO can cause a variety of symptoms, including:

- bloating
- abdominal discomfort
- gas (flatulence)
- nausea (feeling sick)
- diarrhoea

What is a breath test?

A breath test is a non-invasive and safe test used to investigate and diagnose intestinal conditions, such as SIBO.

How does a breath test work?

Bacteria that live in the small intestine produce gases called hydrogen and methane when they digest sugar. These gases then travel from the small intestine to the lungs, where they are released.

A breath test works by measuring the amount of hydrogen and methane that you breathe out over a three hour period after drinking a mixture of lactulose (a non-digestible sugar) and water. A rapid rise in exhaled hydrogen or methane may mean there is a bacterial overgrowth in your small intestine.

Why do I need a breath test?

A breath test will allow us to determine whether your symptoms are caused by SIBO. We will then be able to decide on the best treatment for you.

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How to prepare for the breath test

We will send you two separate appointments (these will usually be on the same day). The first appointment will be a virtual clinic where we will explain how to perform the test and answer any questions you may have. The second appointment will be a time slot for you to come into hospital to return your breath test samples to us. When you come into hospital, please come to your appointment alone (if possible), and remember to wear a face mask and keep to all social distancing guidelines.

Please follow the instructions below, starting four weeks before the test. You may want to tick each step as you complete it.

Day	Diet, drink and medications schedule	Completed
Four weeks before the test	<p>In the four weeks leading up to the test, you should not:</p> <ul style="list-style-type: none">• undergo any test that requires your bowel to be cleansed, such as a colonoscopy or a barium enema• take antibiotics <p>If you have either of these in the four weeks before the test, you must contact us to re-schedule your appointment for a later date.</p>	
One week before the test	<p>Do not take any laxatives or stool softeners, such as Ex-Lax, or stool bulking agents, such as Fybogel.</p> <p>Please begin to fill out your symptom diary (included in your kit).</p>	
24 hours before the test	<p>Follow the suggested meal plan and/or use the table to guide your food choices (included in your kit).</p>	
12 hours before the test	<p>Stop eating and drinking. You may continue to drink water only.</p> <p>If you have diabetes If you have diabetes, ask your doctor if you should change your morning insulin dose. We usually recommend having half of your normal long-acting insulin, and not taking oral hypoglycaemic medications (tablets for diabetes) until you have completed the test.</p> <p>We recommend having some food ready to eat as soon as you have completed your test, especially if you have diabetes.</p> <p>If you have any concerns about fasting (not eating or drinking), please contact us for advice.</p>	

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Day	Diet, drink and medications schedule	Completed
On the day of the test	<p>Don't:</p> <ul style="list-style-type: none">• eat or drink (you may continue to drink small amounts of water if you need to take medication)• chew gum or tobacco• eat breath mints or sweets (before or during the test)• smoke or use e-cigarettes at any point before or during the test (this can give wrong readings)• sleep at any time during the test <p>Avoid strenuous physical exercise for four hours before the test.</p> <p>The test takes approximately two to three hours. We suggest performing the test in the morning so that your fasting period is mostly overnight and you will finish in time to eat lunch.</p>	

Equipment you will need for the breath test

Most of the equipment you will need for the test will be included in your kit. Your kit should include:

- 11 labelled breath sampling bags with two clips attached (one on each side)
- 11 mouth pieces
- a lactulose sachet (10g)
- 22 blue plugs
- a home breath testing questionnaire
- a symptom diary
- a suggested meal plan
- a map and the location of the GI physiology department (for when you drop off your samples)
- a lactulose patient information leaflet

You will also need:

- two timers (for example, your phone and another device)
- 150ml of water in a cup
- a toothbrush and toothpaste

How to correctly collect a breath bag sample

We recommend taking a practice breath bag sample before you start the test. You can reuse the breath bags when practicing or if you are unhappy with a sample you take. Once you are happy with your sample, please use a new bag for the next breath sample.

If you would like to watch a video of how to correctly collect a breath bag sample, please visit: www.youtube.com/watch?v=UbAYKX5yk4w

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We have also included a step-by-step guide below on how to collect a breath bag sample:

1. Familiarise yourself with a breath bag (see image below). You should have 11 bags labelled 1 to 11. Please use them in numerical order.



2. Make sure both bag clips are **open**, allowing air to pass through the bag (see images below). Unwrap and insert a mouth piece into one of the tubes that are on either side of the breath bag (it doesn't matter which tube you use).



Open clip



Closed clip

3. Hold the breath bag with the mouth piece facing towards you (as shown below). Make sure you have one hand on the bottom clip so you can close it easily when you need to. Both clips should be **open** at the start.



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4. Take a normal sized breath in and hold it for 15 seconds (make sure you time this). Then exhale gently through your mouth into the bag at a steady rate. This should not make you short of breath. If you have ever been told you have retinopathy or that you should not perform activities such as blowing up a balloon, you must tell us as soon as possible.



5. Continue exhaling until you feel you have nearly emptied your lungs.
6. When you feel that your lungs are nearly empty, close the clip furthest away from you while continuing to exhale (as shown below). This allows us to collect the very end of your breath.



7. When the bag is completely full, close the clip connected to the mouth piece to capture your breath sample (as shown below). Make sure you don't inhale while doing this and make sure both clips are closed securely.



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8. The bag should contain a good amount of breath and appear quite full. If it appears empty, or if something goes wrong while sampling, don't worry. Open both clips to empty the bag, breathe normally for at least 30 seconds and repeat the instructions above until you are confident with the sample you've collected.



9. Once you are confident with your sample, make sure both clips are closed securely and insert the blue plugs provided into the tubes on both sides to prevent any of your sample from escaping (as shown below). Do not remove the clips.



How to perform the breath test

1. Brush your teeth to make sure you have a clean mouth.
2. Take a baseline breath sample (following the instructions above) using the bag labelled '1'.
3. Repeat the baseline breath sample using the bag labelled '2' to give a second separate sample.
4. Open and mix the lactulose sachet with 150ml of water until it is well combined.
5. Drink all of the lactulose mixture and start your timer for 15 minutes.
6. Brush your teeth again to ensure there is no lactulose left in your mouth or on your teeth.
7. After 15 minutes, take another breath sample using the bag labelled '3' and reset your timer for another 15 minutes. After each breath sample, record any symptoms you experience in the symptom diary (included in your kit). If you do not experience any symptoms, please write down 'no symptoms'.
8. Continue to take breath samples at 15 minute intervals until 135 minutes have passed (as outlined in the table on the next page). After each sample, ensure the clips are firmly closed and seal the ends with the blue plugs.

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Bag number	Time interval	Completed
1	Before the test	
2	Before the test	
3	15 minutes after drinking the lactulose mixture	
4	30 minutes after drinking the lactulose mixture	
5	45 minutes after drinking the lactulose mixture	
6	60 minutes after drinking the lactulose mixture	
7	75 minutes after drinking the lactulose mixture	
8	90 minutes after drinking the lactulose mixture	
9	105 minutes after drinking the lactulose mixture	
10	120 minutes after drinking the lactulose mixture	
11	135 minutes after drinking the lactulose mixture	

After the breath test

Once you have completed the test, make sure that all your breath sampling bags are properly sealed and place them in a suitably sized bag along with your symptom diary and feedback questionnaire. Please then return everything to the GI physiology unit reception at your allocated appointment time.

After the test, you can eat and drink as normal. You can also resume taking any medication that you stopped for the purpose of this test.

Possible side effects

Like all medicines, lactulose may cause side effects in some people. It may cause irritable bowel symptoms, such as:

- abdominal discomfort
- wind
- a small amount of diarrhoea

When will I receive my results?

When we receive your samples, we will carefully analyse them and write up a report. We will give this report to the clinician who initially referred you for the test and they will discuss the results with you at your next outpatient appointment. If the results show that your treatment plan needs to be altered, we may bring your hospital appointment forward or we may ask your GP to contact you.

Contact us

If you have any questions or concerns, please contact us.

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Useful links

Collecting a breath bag sample video tutorial

Website: www.youtube.com/watch?v=UbAYKX5yk4w

For a translation of this document, or a version in another format such as easy read, large print, Braille or audio, please telephone **0800 484 0135** or email patientsupporthub@uhs.nhs.uk

For help preparing for your visit, arranging an interpreter or accessing the hospital, please visit www.uhs.nhs.uk/additionalsupport