

How to perform a Hydrogen Breath Test for Fructose Intolerance at home

The clinical measurement department [Patient information](#)

Before you perform the test, please read this leaflet and follow the instructions carefully.

If you do not follow these instructions, you may produce incorrect results.

We would like you to do a breath test at home for fructose intolerance. This leaflet explains:

- what the breath test involves
- how to prepare for the test
- how to do the test at home.

If you have any further questions or concerns, please speak to a member of our team.

Our phone number is 0300 019 2590.

What is a breath test?

A breath test is a safe way to look at some problems that can affect the bowel. It works by measuring the amount of hydrogen and methane in your breath. This is done over three hours after drinking a mixture of fructose and water.

Why do I need the test?

Your doctor has arranged a fructose intolerance test. Fructose is a sugar found in many fruits.

Normally, fructose is digested (broken down) in the small bowel and very little reaches the large bowel.

In fructose intolerance, the fructose is not broken down in the small bowel and reaches the large bowel. This causes bacteria in the large bowel to produce hydrogen or methane, which can lead to bowel symptoms.

The test substance is fructose. If you have fructose intolerance you may get symptoms such as gas, bloating or stomach ache.

Are there any side effects from the test substance?

The test substance is fructose. If you have a fructose intolerance, you may get symptoms such as gas, bloating or stomach ache.

How to prepare for the breath test

If you have ever been told you have an eye problem (retinopathy) or that you should not blow up a balloon, you must tell us as soon as possible.

Do not eat or drink for 12 hours before the test. You may take small sips of water to take medication. It may be easier to do the test first thing in the morning so that the time without food is mostly overnight.

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

Time scale	Preparation	Tick if complete
Four weeks before the test	You should not have had any test that needs you to take medicine to empty your bowels. For example, a colonoscopy or a barium enema. You should not take antibiotics. If you have taken antibiotics or a bowel cleanser in the 4 weeks before the test, you must contact us to re-schedule your appointment for a later date.	
One week before the test	- Do not take any laxatives or stool softeners, such as Ex-Lax. - Do not take any stool bulking agents, such as Fybogel. - Do not take any anti-diarrheal tablets such as Imodium or Loperamide. - Do not take any probiotics or prebiotics. - Do not take weight-loss medications (Mounjaro, Wegovy, Ozempic etc.).	
24 hours before the test	Follow the suggested meal plan (included in your kit).	
12 hours before the test	Stop eating and drinking. You may have small sips of water to take any medication. Do not smoke or vape. If you have diabetes If you have diabetes and are worried about not eating, please contact your diabetes team for advice. We recommend having some food ready to eat as soon as you have finished your test.	

On the day of your test

Time scale	Preparation	Tick if complete
On the day of the test	Do not: - eat or drink (you may take small sips 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/vapes at any point before or during your test. Doing this can give wrong readings. - sleep at any time during the test. Avoid physical activity for four hours before the test. The test will take about three hours. If you have not emptied your bowel before starting the test, we would advise that you wait until you have had a poo. You may wish to use a glycerine suppository that can be bought from any chemist.	

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:

- 10 bags labelled (A to J). These are breath collection bags with two clips attached (one on each side).
- 10 mouth pieces
- a sealed tub of fructose
- 20 blue plugs
- a symptom diary
- a meal plan

You will also need:

- A stopwatch or timer
- 300ml of water in a cup
- a toothbrush and toothpaste

If you would like to watch a video of how to collect a breath bag sample, please visit:

www.youtube.com/watch?v=UbAYKX5yk4w

How to correctly perform a breath bag sample

We recommend doing a practice breath sample before you start the test. This will help you get used to what to do.

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.

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

1. You should have 10 bags labelled A to J. Please use them in alphabetical order. The bags will come prepared as in the image below (we have provided 10 sealed mouthpieces for you to add to the bags as you go).



- 2. Make sure both bag clips are open**, allowing air to pass through the bag (see images below). Unwrap and insert the 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 mouthpiece facing towards you (as shown overleaf). 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.



Take a normal sized breath in and hold for 15 seconds. Make sure you time this. Then gently breathe through your mouth into the bag at a steady rate (see image below). This should not make you short of breath and will take about 10 seconds.

- 4.** Continue breathing out into the bag until you feel you have nearly emptied your lungs.
- 5.** 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.



close this clip first

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

close this clip second



6. The bag should contain a good amount of breath and appear quite full.

If it appears empty or if something goes wrong then do not worry. Open both clips to empty the bag and breathe normally for at least 30 seconds. Repeat the instructions above until you are happy.



8. Once you are happy with your sample, make sure both clips are closed securely. Remove the mouthpiece 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

Please follow the instructions below very carefully. It describes the timing of the samples and will ensure the test data is valid for the investigation.

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 'A'.
3. Open the fructose tub and stir the powder in a jug with 300ml of water until it is well mixed.
4. Drink the fructose mixture as quickly as you can manage and start your timer.
5. Brush your teeth again to ensure there is no fructose left in your mouth or on your teeth.
6. **15 minutes after drinking the fructose mixture perform the breath sample using bag "B".** (as outlined in the table below). After each sample, make sure the clips are firmly closed and seal the ends with the blue plugs. Remember to write down on the symptom sheet any symptoms that you are having.
7. **Continue to take breath samples every 15 minutes until 90 minutes (bag G) have passed** (as outlined in the table below). After each sample, make sure the clips are firmly closed and seal the ends with the blue plugs. Remember to write down on the symptom sheet any symptoms that you are having.

Please note after the 90 minute sample the timings change to 30 minute intervals.

8. **120 minutes after drinking the fructose mixture, take another breath sample using the bag labelled 'H'.** 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'.
9. **Continue to take breath samples every 30 minutes until 180 minutes (bag J) have passed** (as outlined in the table below). After each sample, make sure the clips are firmly closed and seal the ends with the blue plugs. Remember to mark down on the symptom sheet any symptoms that you are having.

Bag	Time Interval	Tick when sample performed
A	Before the test	
B	15 minutes after drinking the fructose mixture	
C	30 minutes after drinking the fructose mixture	
D	45 minutes after drinking the fructose mixture	
E	60 minutes after drinking the fructose mixture	
F	75 minutes after drinking the fructose mixture	
G	90 minutes after drinking the fructose mixture	
H	120 minutes after drinking the fructose mixture	
I	150 minutes after drinking the fructose mixture	
J	180 minutes after drinking the fructose mixture	

After the test has been performed

Once you have finished the test, make sure that all your breath sampling bags are properly sealed and place them in a suitable sized bag along with your symptom diary.

Please then return everything to: **the nuclear medicine reception desk, level -1, blue zone, just next to the dome, Poole Hospital.**

Our phone number is 0300 019 2590 if you have any questions.

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

When will I know the results?

When we receive your samples, we will look at them and write a report. We will give this report to the clinician who sent you for the test. They will give you the results of the test.

What if I have questions?

If you wish to talk about your test before your appointment day, please call the telephone number on your appointment letter

Data sharing:

University Hospitals Dorset is a teaching hospital and we may use your anonymised data for training and research purposes. If you do not wish for your data to be used please let a member of the team know.

Spread of infections

We actively seek to prevent the spread of infections to others. Please do not come to hospital if you, or someone you are in close contact with, experiences diarrhoea and/or vomiting 48 hours before your scan. Please telephone us to rebook your appointment.

Getting to the hospital

Please refer to our hospital website for information regarding car parking, bus access and hospital car transport services. **www.uhd.nhs.uk/visit/travel**

The Clinical Measurement Department is located within Medical Physics. You should report to the Nuclear Medicine Department. This is situated on the lower ground floor (level -1) in the blue zone.

Enter the hospital via the main entrance and head towards the dome. Take the left exit from the dome to Blue Zone and then turn immediately left. Go through 2 sets of doors then keep left for the Nuclear Medicine reception.

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To ask for this leaflet in larger print, please contact the patient experience team on **0300 019 8499**
or email **uhd.patientexperienceteam@nhs.net**.

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