

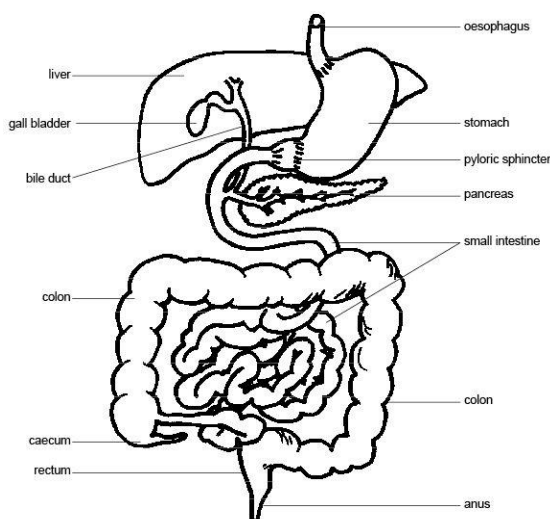
You have been referred for a Hydrogen/Methane Breath Test by your doctor. Please find enclosed your appointment letter. If you cannot attend please call us on 0131 242 1605 as we have a long waiting list. We will do our best to reschedule your appointment to suit you.

## C

A Hydrogen and methane breath Test is a safe and painless way to investigate certain types of gut problems. Certain sugars, when ingested, are usually absorbed straight away by your gut. However in patients with certain gut problems, these sugars are not absorbed and are instead fermented and digested by bacteria present in the bowel. As a result of this fermentation, Hydrogen and/or Methane gases are produced which are passed from the gut to the breath. By collecting breath samples and analysing the contents we can diagnose certain gut problems.

### Why is Hydrogen/Methane Breath testing done?

These tests are very useful in investigating symptoms which are possibly coming from the gut. The medical names for these are: Small Intestinal Bacterial Overgrowth (SIBO) and Carbohydrate Malabsorption (CM).



In all people, large numbers of bacteria live in the lower intestine (colon). The small intestine is reasonably free of bacteria. If food does not move properly through the small intestine bacteria may start to settle in this area and eventually become excessive. This is SIBO and it can interfere with normal digestion, leading to symptoms such as diarrhoea, flatulence, weight loss and tiredness. SIBO can happen because your gut does not move properly, therefore anything that obstructs or slows your gut's ability to empty itself can lead to SIBO. Examples of situations where this is more likely are: If you have had surgery on your intestine; if you are diabetic; if you take certain medications.

Sometimes we lose the ability to digest certain sugars. This can happen for a number of reasons and usually we are not sure why. This is Carbohydrate Malabsorption (CM). The most common sugar that becomes difficult to digest is Lactose. This is the sugar that is found in milk and is present in most dairy products. We usually digest lactose in

the stomach where a special enzyme (lactase) is produced which helps break down the lactose into smaller pieces which can be absorbed (digested) by our gut. If this enzyme does not work or is not produced, the lactose sugar can't be digested and it passes all the way through the gut to the bacteria that live normally in our large intestine. The lactose sugar is then digested and fermented by these bacteria producing the gases Hydrogen and/or Methane. Therefore if we find these gases in your breath after you have had Lactose we know you can't digest lactose properly ie. you have lactose malabsorption.

Digestion problems with other sugars such as Fructose (fruit sugar), Sucrose (table sugar) and Maltose (malt sugar) can also be tested using a breath test. These are less common and will usually be specially requested by your doctor if necessary.

## **What preparation is required?**

For the best (and safest) examination the stomach must be completely empty. You should have nothing to eat or drink, including water, for **12 hours** before the examination. You can take any regular medication in the morning with a small sip of water if necessary.

A low residue diet sheet is enclosed. This diet should be followed for the 48 hours before your appointment. This makes sure your gut bacteria are not too active for the test.

Please make sure you have not taken any ANTIBIOTIC medication, (eg. Amoxycillin, Metronidazole, Rifaximin) within the 4 weeks before your appointment as these can interfere with the results of the test. Please telephone if you are unsure what you are taking.

Please avoid laxatives for 48 hours before your appointment and please **DO NOT SMOKE** on the morning of your test. Both can interfere with the results of the test.

If you have had a colonoscopy in the 4 weeks before your appointment it is not recommended to have a breath test as the results will not be reliable. Please telephone us to re-schedule your appointment.

## Special Circumstances

### Diabetic patients:

If you are diet-controlled or on Metformin please continue as normal.

If you are taking long acting and short/rapid-acting insulin, please do not take your morning **short/rapid-acting dose** while you are fasting but **remain on your long-acting dose**.

If you are on mixed or intermediate insulin you may not need to adjust your dose. Please call to clarify.

**Ensure that you monitor your blood sugar during the fasting period and consume a sugary drink if your blood glucose is low**

- Long acting insulin includes: Insulin Glargine, Levemir
- Short or rapid acting insulin includes: Actrapid, Velosulin, HumulinS, Insuman rapid, Novorapid, Humalog, Apidra
- Mixed or intermediate insulin includes: Humalog Mix 25, Humalo Mix 50, Novomix 30, Humulin M3, Insuman Comb, Insulatard, Humulin I, Insuman Basal

**\*If you are unsure about the information above please speak with your diabetic nurse or contact us on 0131 242 1606\***

### How is the test done?

The person doing the test will discuss your symptoms with you and why the test is being performed.

You will be asked to blow into a special sample bag to collect your baseline breath readings.

You will then be asked to drink a special sugar solution. This depends on the test you are having.

You will be asked to blow into the sample bag every 20 mins for up to 3 hours.

You may not eat or drink during the test.

You will be able to read or use mobile phones/computing devices during the test.

Once the samples have been collected you will be allowed to go home and eat and drink normally. There are no significant risks with these tests although you may experience some abdominal discomfort and/or bloating after the sugar drink.

## What happens after the test?

The results will be sent to your referring doctor on the day of the test. We are usually able to let you know the result on the day however if this is not possible we will let you know. If any treatments might be indicated by the results this will be discussed with you on the day.

If you have any questions that have not been answered please telephone and we will discuss them with you.

## Additional information

The GI Physiology Unit is a training department for medical/scientific trainees and therefore it is possible that your test will be observed or performed (under direct supervision) by such a trainee. You are not obliged to agree to this and you will be asked for your consent prior to your procedure. A senior member of staff will always be available to perform your test.

You are safe to drive after the test. If you need to arrange ambulance transport please the Scottish Patient Transport Service on 0300 123 1236.

If you have any further questions please contact:

Sarah Douglas  
GI Physiology/Endoscopy  
Medical Daycase Unit  
Royal Infirmary of Edinburgh  
Little France Crescent  
EH16 4SA  
Tel: **0131 242 1606**

## Low Residue Diet sheet

### THIS DIET SHOULD BE FOLLOWED FOR THE 48 HOURS BEFORE YOUR APPOINTMENT

For the best results, before your breath test, only low residue foods (low fibre) are recommended as directed by your doctor. These foods are less likely to remain in your bowel.

### WHAT YOU CAN HAVE

**Fats (use sparingly):**

Butter, margarine

**Eggs:**

Boiled, poached

**Cereal:**

Crisped rice cereal,  
corn flakes (no bran)

**Cheese:**

Cream cheese,  
cottage cheese,  
cheese sauce

**Tofu**

**Potatoes (no skin):**

Boiled, creamed,  
mashed, baked

**Pasta:**

Plain macaroni,  
spaghetti, noodles

**Rice:**

Plain, boiled white rice

**Meat/Fish:**

Minced or well-cooked  
tender, lean, beef,  
lamb, ham, veal, pork,  
poultry

**Gravy:**

Using stock cubes  
(white flour or corn  
flour may be used to  
thicken)

**Bread:**

White bread/toast  
(seedless)

**Sugar/sweetener:**

White sugar, brown  
sugar, sweetener

**DRINKS:**

Water, energy drinks,  
soda water,  
herbal/fruit tea, clear  
soup or drinks made  
from stock/meat  
extract cubes

### FOODS TO AVOID

- High fibre foods such as, bran, pulses, fibrous vegetables are NOT recommended
- Cloudy/pulp containing fruit juices
- Nuts, seeds and pips