



INDIANA UNIVERSITY HEALTH

GI MOTILITY LAB & GASTRIC ELECTRICAL STIMULATION PROGRAM

HYDROGEN BREATH TEST

HYDROGEN BREATH TEST- A hydrogen breath test provides information about the digestion of certain sugars or carbohydrates, such as milk sugar (lactose) or fruit sugar (fructose). This will help determine if you are intolerant to certain sugars.

This is a very simple and non-painful test to do. But it does require some planning and preparation on your part. Please follow all instruction as listed below.

How Do I Prepare For The Procedure?

1. For **two weeks before** your test
 - a. You **cannot** take any antibiotics
 - b. You **cannot** take any probiotics (over-the-counter).
2. For **one week before** your test, **do not** take any laxatives or stool softeners (for example Colace, Milk of Magnesia, Ex-Lax) or stool bulking agents (for example Metamucil or Citrucel) if possible. You should also **not undergo** any test that requires cleansing of the bowel, such as colonoscopy or barium enema.
3. For **48 hours prior to** your test, **do not** take Prokinetic drugs (metoclopramide [Reglan], domperidone [Motilium], erythromycin, azithromycin) and opiate pain meds (hydrocodone, oxycodone, morphine, hydromorphone).
4. For **48 hours prior to** your test **avoid** beans, pasta, fiber cereals, and high fiber foods.
5. The **day before** your test:
 - a. You may consume only the following foods and drinks: plain white bread, plain white rice, plain white potatoes, baked or broiled chicken, fish, or turkey, eggs, clear chicken or beef broth, water, non-flavored black coffee or tea.
 - b. Only salt and pepper may be used to flavor your food. Butter or margarine is not permitted. Artificial sweeteners and sugar is not permitted
 - c. Soda Pop/cola drinks are not permitted.
 - d. **DO NOT EAT OR DRINK ANYTHING ELSE** – it could give false results for the test.. The night before the test, have an early dinner of rice and meat.
6. For **12 hours before** your test:
 - a. You must stop eating and drinking 12 hours before the test. For example, if your test is at 9:00 a.m., you would stop eating and drinking at 9:00 pm the night before.

- b. Please bring a list of your prescription medications to your appointment.
7. On **the day of** your test:
 - a. You should not eat or drink anything in the morning.
 - b. You may take your medications with a small amount of water.
 - c. If you are diabetic requiring insulin or diabetic pills, ask your physician if you should change your morning dose. Generally, half of your normal long acting insulin is given. Oral hypoglycemic (diabetic) medications are usually not taken that morning until completion of the test and resumption of eating meals.
 - d. Two hours before the test, brush your teeth.
 - e. DO NOT EAT, DRINK, CHEW GUM OR TOBACCO, SMOKE CIGARETTES, EAT BREATH MINTS OR CANDY BEFORE OR DURING THE TEST.
 - f. Do not sleep or exercise while the test is being done.
 - g. Your test may last for two to five hours. Please allow yourself sufficient time to complete your test.
 8. **Please complete the enclosed forms and bring a copy of your medication list. Bring all up-to-date insurance information and identification to your appointment, as well as complete names, addresses, phone and fax of all doctors you want to receive a copy of the report.** We recommend you contact your insurance company prior to your procedure, if you have any questions about coverage.
 9. **PLEASE ARRIVE 30 MINUTES PRIOR TO YOUR SCHEDULED PROCEDURE TIME.**
 - a. Check-in at the Front Admitting Area located on the first floor of University Hospital, 550 N. University Blvd, Indianapolis Indiana.
 - b. Once registration is completed, the registration clerk will notify the Motility Clinic of your arrival. Proceed to the Central Elevators.
 - c. Take them to the 5th floor, (5601) and wait in the chairs immediately to the left of the elevators. The motility nurses will escort you to the Motility Lab.
 - d. Please use valet parking, which is available under the glass cano

What does the procedure involve?

1. The technician will verify that you have not had anything to eat or drink after midnight and your preparation is adequate.
2. A breath sample will be collected by having you exhale into a bag.
3. A solution of glucose, lactose, lactulose, or fructose will be given to drink. You should drink this whole amount.
4. Breath samples will be collected every 15 or 30 minutes. After each sample is collected, the sample will be removed from the bag with a syringe, allowing collection of another sample into the bag.
5. **During the test**, you should take notice of your symptoms and document in your diary if you have your typical symptoms for which the test is being performed.
6. **During the test**, you should not eat, chew candy, smoke, sleep, or exercise.
7. When the test is over, generally after two or five hours (depending on the test ordered by your doctor), you may leave. You may return to your usual diet and activity after the test.
8. The report will be sent to your doctor

Principles of Hydrogen Breath Testing

Hydrogen gas in the body is produced from intestinal bacteria. Bacteria, normally in the large intestine, produce hydrogen through fermentation of carbohydrates – such as lactose, lactulose, and fructose which are substrates given for the hydrogen breath test. Some of the hydrogen produced by bacteria is absorbed by intestinal mucosa whereby it enters the vasculature and is transported to the lungs. Hydrogen is then exhaled by the lungs by normal breathing. This is collected in the bag for subsequent analysis.

In small intestinal bacterial overgrowth, the small intestinal bacteria metabolize the lactulose given and produce an early rise in the breath hydrogen.

In lactose intolerance, the individual has a deficiency in lactase, the enzyme that breaks down lactose. Normally, lactose is broken down in the small intestine by lactase and very little lactose reaches the large intestine where the bacteria break it down to produce hydrogen. In lactose intolerance (lactase deficiency), the ingested lactose is not metabolized in the small intestine and reaches the colon where it is metabolized by colonic bacteria producing a large amount of hydrogen which is measured in the breath sample.

****If you should have any questions regarding your medications please contact your prescribing doctor. If you need to change your appointment for this test, please contact the Motility Lab scheduler 317-944-7817.**