

# Hydrogen Breath Test

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## **What is a hydrogen breath test?**

This is a test for bacterial overgrowth, or intolerances to lactose, fructose, or sucrose. Glucose is a sugar that will be broken down by bacteria if present in the small bowel with hydrogen or methane gas as a by-product. The breath sample will be analyzed for hydrogen or methane content to determine if you are able to properly break down the lactose, fructose, or sucrose, or if you have bacterial overgrowth.

## **What can I expect from a hydrogen breath test?**

This test requires that you drink a solution of lactose, fructose, sucrose, or glucose in water. Lactose is the sugar found in milk and is normally broken down in the small bowel. Glucose is a sugar that will be broken down by bacteria if present in the small bowel with hydrogen as a by-product. Sucrose is a common sugar found in foods such as candy. After drinking the solution, you will be asked to breathe into a plastic bag. Breath samples are obtained every 15 minutes for adults, and every 30 minutes for children. The breath sample will be analyzed for hydrogen content to determine if you are able to properly break down the lactose or sucrose, or if you have bacterial overgrowth. **The test for glucose lasts about 2 hours and the tests for lactose, fructose, and sucrose last about 2 to 3 hours.** The test is performed in the Gastrointestinal Physiology Laboratory of the Medical Procedures Unit.

## **How do I prepare for a hydrogen breath test?**

Please follow these instructions to ensure a successful test.

- **Two weeks before** your test:
  - You must be off antibiotics and Pepto-Bismol™ for two (2) weeks.

- **Two days before** your test:
  - Eat a **low carbohydrate diet**. The purpose of this diet is to avoid foods that may produce gas in the intestinal tract for two days before your test, as this could cause inaccurate test results.

	Allowed	Avoid
<b>Grains/starches</b>	Rice, quinoa, potato, oatmeal, corn tortillas, popcorn, gluten-free bread/crackers/pasta, Cereal: plain cheerios, plain rice/corn chex, corn flakes, rice krispies	Wheat products (including bread, pasta, crackers, cookies, cake, cereal, flour tortilla), rye, barley
<b>Vegetables</b>	Bell peppers (any color), carrots, chives, cucumber, eggplant, green beans, kale, lettuce, olives, parsnip, spinach, summer/winter squash, zucchini, tomato <b>Limit to ½ cup portion:</b> beets, butternut squash, broccoli, Brussels sprouts, corn, fennel bulb, green peas, sweet potato	Artichoke, asparagus, cauliflower, garlic, leeks, mushrooms, okra, onion/shallots, snow peas, sugar snap peas
<b>Fruit</b>	Banana, blueberry, cantaloupe, cranberry, grapes, honeydew, kiwi, lemon, lime, orange, papaya, pineapple, pomegranate, raspberry, strawberry	Apple, apricot, blackberry, cherry, dried fruit (raisins), grapefruit, mango, nectarine, pear, peach, plum, prunes, watermelon
<b>Proteins</b>	Meat, eggs, fish, tofu, most nuts (see “avoid” column), peanut butter, almond butter	Beans, hummus, edamame, cashews, pistachios
<b>Dairy</b>	<i>Lactose free</i> milk/yogurt/ice cream, rice milk; any aged or hard cheese (including cheddar, provolone, swiss, parmesan, feta, goat, etc)	Milk, yogurt, ice cream, cottage cheese, ricotta cheese, soy milk, almond milk
<b>Beverages</b>	Water, coffee, tea, sugar-free beverages (crystal light, diet pop)	Regular soda and other beverages with high fructose corn syrup
<b>Sweeteners</b>	Pure maple syrup, sugar substitutes (such as Stevia), table sugar	Agave, honey, high fructose corn syrup

## Sample Menus:

### Day 1

**Breakfast:** 2 scrambled eggs and 1 banana

**Lunch:** salad with grilled chicken, tomato, cucumber, carrots, feta, balsamic vinegar + olive oil dressing

**Snack:** 1 cup fruit (such as blueberries and strawberries), small handful of peanuts or almonds

**Dinner:** Grilled chicken, baked potato, ½ cup steamed broccoli

**Snack:** 1 cup popcorn

### Day 2

**Breakfast:** plain cheerios with lactose-free milk (such as Lactaid brand) or oatmeal with cinnamon and blueberries

**Lunch:** sandwich with turkey, cheese, lettuce, and tomato on gluten-free bread; plain potato chips or 1 orange

**Snack:** baby carrots and 1 cheese stick

**Dinner:** grilled salmon with lemon, brown rice or quinoa, sautéed zucchini and yellow squash

**Snack:** 1 cup grapes

- **The day before** your test:
  - You should have **nothing by mouth after midnight**.
  - **Do not eat, drink, or smoke** until your examination is completed.
  - This includes any type of **gum or candy**
- **Please note:** breath tests can be done anytime *before* a colonoscopy prep; but not for four (4) weeks *after* a colonoscopy prep, or any test that requires a bowel prep.
- Before starting the test you will be asked to rinse your mouth with mouthwash. This limits the effect of bacteria in your mouth on the results.

## Can I take my medicine before a hydrogen breath test?

**Critical medicines, such as those for your heart, blood pressure, breathing, or seizures, should be taken with sips of water on the morning of the procedure.** Noncritical medicines, including over-the-counter medicines and

supplements should not be taken, unless your physician or nurse has advised you otherwise.

If you are unable to keep your appointment, please call the Medical Procedures Unit at (734) 936-9250, option 1.

### **Websites affiliated with the University of Michigan Health System:**

[Your Digestive System and How it Works](#)

[Directions to the Medical Procedures Unit](#) - Look for number 24 on the floor plan.

[Instructions for Patients with Diabetes Having Outpatient Tests \(on insulin\)](#)

[Instructions for Patients with Diabetes Having Outpatient Tests \(no insulin\)](#)

### **Other related Websites:**

[National Digestive Diseases Information Clearing House - Lactose Intolerance](#)

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