

SECTION: Clinical

Procedure No. 02130/v1/01/2018

PROCEDURE TITLE: Hydrogen Breath Test for Small Intestinal Bacterial Overgrowth (SIBO) using Glucose

Review Officer: Senior Scientist,
Gastroenterology and Hepatology

Review Summary: v1

Applicable To: All Gastroenterology and
Hepatology Department Laboratory Staff

Date Introduced: 01/2018

Next Review Date: 01/2021

Authority: Director of Gastroenterology
and Hepatology

Replaces: New procedure

Key Words: hydrogen breath test, SIBO,
glucose, lactose

PURPOSE

What is the hydrogen breath test?

The hydrogen breath test is a simple painless and non-invasive test used to identify an abnormal growth of bacteria in the small intestine.

What is bacterial overgrowth in the intestine?

Normally, only small amounts of bacteria are found in the intestine. If there is a significant increase in the amount of bacteria, food and nutrients are poorly absorbed. Bacterial overgrowth can result from a slow transit of food through the bowels or from certain medications. Symptoms may include abdominal pain, bloating, gas, and diarrhoea.

OUTCOME OF THE PROCEDURE

This procedure will minimise inconclusive or failed tests and the need for the patients to repeat the test at a later date.

AUTHORISED TO UNDERTAKE THE PROCEDURE

Who can do the procedure, what qualifications or training are required?

CONTRAINDICATIONS

The hydrogen breath test cannot be done following a colonoscopy, barium enema, or any tests that require a bowel prep to be given, since this alters the microbiota profile. Should a bowel prep be undertaken, the Hydrogen breath test should be performed at least 4 weeks post bowel prep to allow the bacteria to re-colonise.

RISKS AND PRECAUTIONS

- Equipment failure
- Patient not following instructions

STEPS OF THE PROCEDURE

Pre-Procedure Preparation

- It is important to achieve low levels of hydrogen before the test and this is accomplished by avoidance of poorly absorbed food in the evening before the test. The recommended way to achieve this is to eat chicken or fish and white rice for dinner the evening before the test followed by fasting.
- Smoking should be avoided the day before and the day of the test since smoking can affect the results.
- The test should not be conducted for at least 4 weeks following antibiotic therapy or bowel prep to allow recolonisation of bacteria.
- Avoid probiotics supplements containing lactobacillus, bifidus or acidophilus bacteria. (Yakult and yoghurt are acceptable).

Patient Teaching

- Explain the purpose and length of time of the test, techniques used.
- Provide patient with written and/or verbal instructions for conduction of the test

Solutions and Equipment - Supplier: Midmed Vendor 101241

- 75g glucose or equivalent
- Disposable drinking cup
- 7 labeled breath test bags (Qintron Q7011G/6P)
- 1 Sample discard bag (QT 00843/100P)
- 1 T-piece mouth piece assembly (Q0854/6)

- Quintron Breath Tracker SC for hydrogen, methane and CO2 detection with attachments and calibrators as per manufacturer's instructions.

Procedure

- Prepare the glucose test challenge drink: 75g glucose dissolve in 100ml boiling hot water, allow to cool and make up to 150ml. (Only one drink sample is required).
- Using Breath Tracker sample collection bags, take a basal breath sample. Instruct the patient to breath in through the nose, hold breath to the count of 10 and then exhale using the mouth piece to inflate the sample bag. Room air is trapped in the discard bag.
- Drink the prepared glucose solution.
- Repeat breath collection every 20mins for 2 hours, collecting in separate bags but transferring the same mouthpiece attachment. Discard mouthpiece when test is complete.
- (For Lactose intolerance use 25g Lactose and collect breath for 3 hrs)

Analysis of Results

Results are analysed and reported using Microsoft Excel and Word

EVALUATION METHOD

The Gastroenterology and Hepatology Clinical Laboratory Scientist will monitor the procedure and keep it updated with any appropriate changes.

REFERENCES

1. www.quintron-usa.com
2. Yao CK, Tuck CJ. The clinical value of breath hydrogen testing. J Gastroenterol Hepatol. 2017 Mar;32 Suppl 1:20-22. doi: 10.1111/jgh.13689.