

H₂-Breath Gas Test

biovis'
DIAGNOSTIK MVZ

Determination of Lactose Intolerance



This breath-gas test kit is for the determination of lactose intolerance. In case of questions please call us (06431-21248-0)

Test Procedure – H₂ Breath gas test for the determination of lactose intolerance:

Lactose intolerance is caused by lactose decomposing enzyme deficiency. Lactose is not metabolised to absorbable monosaccharide (glucose, galactose) after consumption. It reaches the large intestine where it is metabolized by intestinal bacteria. During this process large amounts of hydrogen are developed, which find way from the intestines into blood and from there to the lung, where it is exhaled by normal breathing.

What is required?

For the H₂-breath gas test the following requirements have to be complied with:

- On the day before taking the test please avoid high-fibre foods (wholemeal products, nuts, fruits, beans, lentils and peas). Only eat light food like for example fish, turkey and rice dishes.
- The test has to be taken on an empty stomach. 12 hours before the test and during the test period the patient is not allowed to eat. Sugar-containing drinks (including "light" drinks) are not allowed. After starting the test moderate amounts of mineral water or unsweetened tea are allowed.
- The breath gas test should preferably be carried in the morning - 1-2 hours after getting up.
- Smoking should already be stopped 6 hours before starting the test. During the test period you are also not allowed to smoke (not even passively).
- Antibiotics or laxatives should be stopped at least 1 week before the test. The patient should not suffer from diarrhoea.
- The patient is not allowed to sleep directly before or during the test period.

It is recommendable to carry out tests within three months after receipt of the sampling material. The filled sample containers should be sent to the laboratory immediately. If the period of 3 months is exceeded, the vacuum in the test tubes may have decreased and leading to false-negative results.

Test Procedure

I. Test Preparation:

- a) Please check if the sampling material is complete. It should contain the following:
- 1 x mouthpiece with bag and sampling device attached at the side
 - 5 x sample tubes, with label numbered consecutively.
- Attention: Test tubes are in vacuo; for this reason they should not be opened, as otherwise they become useless
- 1x container with 50 g lactose
 - 1x test protocol
- b) Take the numbered sample tubes out of the white outer tubes in the shipping box.
- c) Label the tubes with your name and the date of test and put them in the correct numerical sequence (no. 1-5).
- d) In the shipping box you also find a jar with 50 g lactose. Dissolve the complete content in 240 ml warm water, stir until the powder is completely dissolved. (Please note: It is recommended to prepare the test solution already on the day before. The finished test solution can be kept in the fridge until use.)

II. Test Completion/ Taking Breath Gas Samples

Phase 1:

Taking the reference sample (before drinking the test liquid)

1. Take the mouthpiece with the breathing bag in one hand while holding the labelled sample tube No. 1 in the other hand.
2. Breathe in normally (do not breathe deep) and then blow the breathing air through the mouthpiece in the bag, so this fills slowly (Picture 1).
3. While breathing out, the bag still being filled your breath, put the test tubes (the side of the rubber stopper) with slight pressure on the sampling device to the side of the mouthpiece. A needle will penetrate the rubber stopper of the test tube and your breath flows into the vacuum tube (Picture 2). After completely breathing out you pull the test tube out of the sampling device and lay it out ready for shipment.

Phase 2:

Drinking the Test Liquid

4. After taking the reference sample (test tube no.1), please drink the test solution. Important: The doses for children are calculated based on their body weight. The required amounts are listed in the table below.

Dosage for Children:

Body weight / Dosage

3 – 6 kg = **30 ml**, 6 – 9 kg = **60 ml**, 9 – 12 kg = **90 ml**, 12 – 15 kg = **120 ml**
15 – 18 kg = **150 ml**, 18 – 21 kg = **180 ml**, 21 – 25 kg = **210 ml**, über 25 kg = **240 ml**

- Please note the time you drink the liquid on the test protocol (this corresponds with Test Time 0). Please do not smoke during the test period (not even passively), do not eat or sleep.

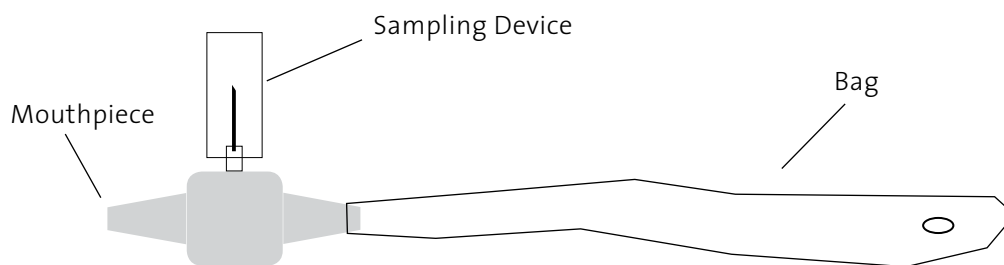
Phase 3:

Take Breathgas Samples No. 2 - 5

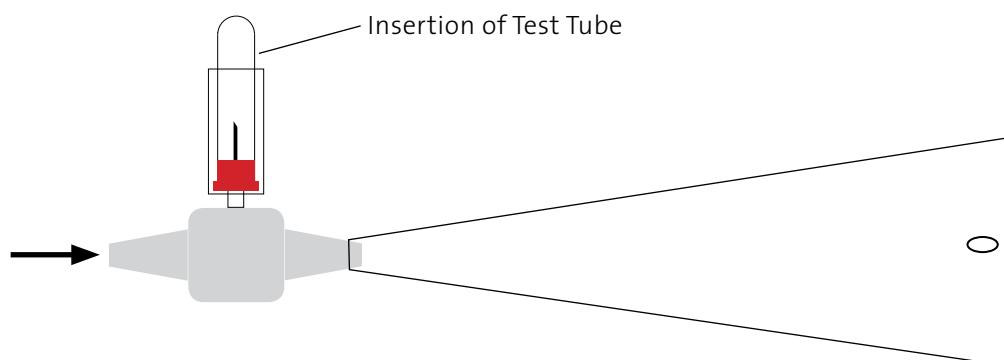
- After 30, 60, 120 and 180 min you take the other breath gas samples like described under Point 1 to 3 (see above). Always write the time you take the respective breath gas sample on the test protocol. The complete test duration is 3 hours.
- Put the filled breath gas tubes back into the shipping box; add the completed test protocol and the request form. Ship or send the box immediately. (The complete sampling utensils should also be returned, so we can dispose them properly.)

Sampling Device:

Picture I:



Picture II:



Take sample when breathing out. During sampling the bag has to be filled with breath gas. The contact of mouth and mouthpiece is not to be interrupted.

Please be careful when handling the sampling devices: Do not touch inside the sampling device because there is a pointed needle. You may injure yourself!