

Non-invasive breath analysis for the detection of gastrointestinal disorders...

...with the Gastrolyzer® range

NEW



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Improving quality of life, one breath at a time

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Hydrogen Breath Testing: Otherwise known as HBT (Gastro⁺™)

HBT is a non-invasive, sensitive and specific means of diagnosing small bowel sugar malabsorption. They make use of gut bacteria's ability to digest sugars and convert these to hydrogen, which is then absorbed into the blood and can be measured in exhaled breath ¹.

The test is commonly used in neonate, paediatric and adult gastroenterology departments to diagnose malabsorption of the sugars lactose, fructose and sucrose. It is also used to investigate small intestinal bacterial overgrowth ².

The Gastrolyzer range is world renowned for delivering accurate hydrogen breath testing, cited by clinical leaders in gastroenterology, such as Robert Heuschkel ¹ and Way Seah Lee ³.

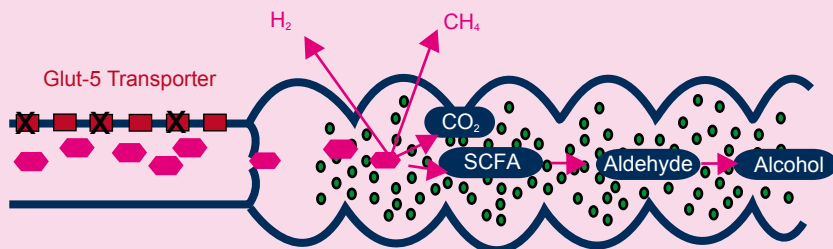
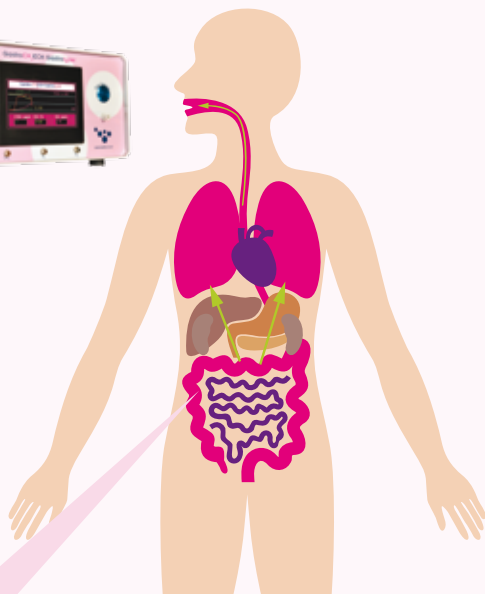


The role of Methane alongside HBT (GastroCH₄ECK™)

A percentage of patients do not produce hydrogen and therefore would not be diagnosed by the use of HBT alone. Therefore the role of methane is to ensure that patients who are non-hydrogen producers but produce methane instead are not miss-diagnosed.

“Medical literature shows that the level of methane producers varies by gender and population group from approximately 33-41%^{4,5,6}”

How H₂ & CH₄ is produced



Gastro⁺™ Gastrolyzer®

The Gastro⁺™ is an easy to use, non-invasive breath hydrogen monitor, with two sampling modes.

Battery Indicator

the Gastro⁺ requires 3 AA batteries, making it totally portable and easy to transport.

Colour Touch Screen

quick and easy use, with visual prompts for patients whilst taking a test to ensure correct results every time.

ABS Body

for easy grip and cleaning to ensure optimum infection control every test.

Two Sampling Modes

to enable breath hydrogen testing for patients of all ages.

Facemask sampling system

This sampling system is recommended for use with younger or older patients who are unable to co-operate with the test. The Gastro⁺ is attached to a facemask, which is then placed over the mouth and nose of the patient. Once 'Facemask' mode is selected the Gastro⁺ will take a real-time reading until the operator is happy the reading is correct. The reading is then held on the screen to be downloaded to the GastroCHART™ database or recorded manually depending on preference.



Gastro⁺™ Gastrolyzer® Technical Specification:

Concentration range:	0-500ppm hydrogen (H ₂)
Display:	Colour LCD with 1ppm increments
Detection principle:	Electrochemical sensor
Accuracy (repeatability of reading):	± 10%
Carbon monoxide cross-sensitivity:	0%
Batteries:	3 x AA (LR6 or equivalent) alkaline batteries
Response time:	Typically <45 seconds
Operating temperature range:	15-35°C (Storage 0-50°C)
Operating humidity:	10-90% (Storage 0-95%) non-condensing
Sensor operating life:	2-3 years, 6 month warranty
Sensor sensitivity:	1ppm
Dimensions:	Approx. 44 x 77 x 138 mm
Weight:	Approx. 250g including batteries
Construction:	Case - Polycarbonate/ABS blend with elastomeric overmould. D-piece - Polypropylene

Mouthpiece sampling system

This sampling system is recommended for use with adults or patients able to hold their breath for a short period of time. The patient takes a deep breath in, holds, then exhales slowly through a sampling system. Within 45 seconds their result will be displayed on the screen to be either downloaded to the GastroCHART™ database or recorded manually depending on preference.



Gastro⁺™ Consumables

Flatpak™ Mouthpieces - These mouthpieces take up less than a third of the space of round cardboard mouthpieces. They are also packed in batches of 50 to reduce handling and the risk of cross-infection.



Order codes - FP-MP/50S (50 per box)
FP-MP/250S (250 per box)

D-Piece™ - The D-piece™ incorporates a one-way valve to prevent air being drawn back from the monitor. The breath then passes through an infection control filter, proven to remove and trap >99.9% of airborne bacteria⁷.



Order Code - D-PIECE (12 per box)

Face Mask Sampling System - This sampling system is single patent use and allows the patient to breath normally through a face mask in order to produce a breath sample.



Order Code - ISSA-V (1 sampling kit)

Monitor Cleaning wipes - Free from alcohol, ensuring the continued performance of your monitor.



Order Code - WIPES (pack of 25)

Hand Foam - Free from alcohol, to clean your hands between patients, further reducing the risk of cross-infection.



Order Code - HAND FOAM (120+ applications)

Calibration Kit - The Gastro⁺™ requires calibration once per month using 100ppm H₂ gas provided as a kit or replacement cylinder.



Order Code - 020-14-12010K-V (approx 32 calibrations)
020-14-12010-V (replacement cylinder)

GastroCH₄ECK™ Gastrolyzer® Features

O₂ Reading Correction

for accurate results every test

Real-time Reading Graph

motivates patients and gives instant results

NEW



Online Breath Sampling

for instant results

Breath Bag Sampling

for simultaneous testing of larger groups

GastroCH₄ECK™ Gastrolyzer®

Accurate and real-time combined CH₄, H₂ and O₂ monitoring

The GastroCH₄ECK™ portable breath CH₄, H₂ and O₂ monitor allows health professionals to accurately detect a range of gastrointestinal disorders. An O₂ reading is taken to motivate patients into providing an end-tidal sample. If they are unable to do this the GastroCH₄ECK™ will automatically correct the reading saving the patient from embarrassment and having to carry out another test.

Applications

The GastroCH₄ECK can be used as an aid to diagnose the following disorders:

- Carbohydrate Breakdown Deficiency
- Carbohydrate Malabsorption
- Lactose Intolerance
- Bacterial Overgrowth
- Determination of time passage through gut

Features / Benefits

- Online breath sampling for instant results
- Breath bag sampling for simultaneous testing of larger groups
- Requires calibration just once per month, saving precious time and calibration gas costs
- Fast warm up time of less than 20 minutes
- O₂ correction for accurate results
- Real-time reading graph shown on screen to motivate patients and give instant results
- Consumables contain anti-bacterial filters for optimum infection control

“Medical literature shows that the level of methane producers varies by gender and population group from approximately 33-41%^{4,5,6}”

GastroCH₄ECK™ Technical Specification:

Power Supply:	Mains power 230 V [110 V compatible]
Warm-up time:	< 20 minutes
Calibration frequency:	Once a month
Detection Principle:	Electrochemical and Optical sensors
Operating temperature:	15 - 35 degrees °C
Operating Humidity:	30 – 75% non condensing
Dimensions:	300 x 265 x 140 mm
Weight:	Approx. 6kg
Gases measured:	CH ₄ (Methane) H ₂ (Hydrogen) O ₂ (Oxygen)
Range:	CH ₄ 0 – 200 ppm, H ₂ 0 – 200 ppm, O ₂ 0 – 100%
Accuracy:	
CH ₄	Resolution: 1 ppm Accuracy: +/- (10% of range or 10% of reading)*
H ₂	Resolution: 1 ppm Accuracy: ± 5%**
O ₂	Resolution: 0.1% Accuracy: +/-2% full scale
Test time:	CH ₄ / H ₂ / O ₂ Typically <45 seconds

*Conditions during factory calibration, typically 20°C, 1,000 mBar

**Calibrated and used at the same temperature

GastroCH₄ECK™ Consumables

GastroCH₄ECK™ Mouthpieces - specifically designed with the latest moisture removal and bacterial filtration to remove 99.9% of airborne bacteria from the patient's breath.⁸ GastroCH₄ECK™ mouthpieces are 'per patient use' so can be used for the duration of a patients testing procedure and disposed of. DO NOT REUSE AFTER THE 1ST DAY OF TESTING.



Order code - GASTROCHECK-MP (box of 250)

GastroCH₄ECK™ Breath Bags - specifically designed to capture as much end-tidal air as possible, with a one-way mouthpiece to prevent loss of sample. GastroCH₄ECK™ breath bags are 'per patient use' so can be used for the duration of a patients testing procedure and disposed of. DO NOT REUSE AFTER THE 1ST DAY OF TESTING.



Order Codes - GASTROCHECK-BAG (250 breath bags and bag mouthpieces)

Moisture Removal Filters - for use with the breath bag sampling mode. These will last for approximately 150 samples and need to be changed when the filter changes from orange to dark green.



Order Code - GASTROCHECK-DESS (5 filters)
GASTROCHECK-DESS-XL (10 filters)

Calibration Kit - The GastroCH₄ECK™ requires calibration once per month using 100ppm H₂, 100ppm CH₄ & 20.9% air provided as a kit or replacement cylinder.



Order Code - GASTROCHECK-CAL-KIT (approx 5 calibrations)
GASTROCHECK-CAL (replacement cylinder)

¹R. Heuschkel, H. Shelley and M. Brennan. Hydrogen Breath Testing in Children: What is it and why is it performed?. Gastrointestinal Nursing, Vol 7: 18-27, 2009.

²A Eisenmann, A Amann, M Said, B Datta, M Ledochowski. Implementation and Interpretation of Hydrogen Breath Tests. J Breath Res 2: 1-9, 2008.

³Lee W S et al. Analysis of breath hydrogen test for carbohydrate malabsorption: validation of a pocket-size breath analyser. J Paediatr Child Health 36: 340-342.

⁴D. Roccarina et al - The Role of Methane in Intestinal Diseases – 2010

⁵MD Levitt et al - The possible role of breath methane measurement in detecting carbohydrate malabsorption

⁶P Pitt et al – Studies on breath methane: the effect of ethnic origins – Gut pg 951-959, 21 – 1980

⁷Health Protection Agency (HPA). Porton Down, Report No. 43/06. pp10-11

GastroCHART™ Patient Database (included with every Gastro+™ & GastroCH₄ECK™)

The GastroCHART™ is designed specifically for use with the Gastro+™ and GastroCH₄ECK™. On the Gastro+™ It allows the health professional to save up to 10 patients on the monitor for satellite breath tests. If the Gastro+™ or GastroCH₄ECK™ are connected to a PC, readings can be downloaded to an unlimited patient database immediately.

The readings can then be shown in tabular format or in a graph to show whether the patient has presented a positive/negative result. Results can be easily printed for the patient to retain and record in their medical history.





Contact Bedfont or one of our worldwide **Gastrolyzer[®]** distributors for a free demonstration

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A full list of our worldwide distributors can be found at
<http://www.bedfont.com/uk/english/distributors>

breath analysis is the new blood test

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