

# The GastroPanel® -innovation from Finland

## GastroPanel® - test for stomach health

- **GastroPanel® is a unique *Helicobacter pylori* test based on four biomarkers (Pepsinogen I, Pepsinogen II, Gastrin-17 and *H. pylori* antibodies)**
- **Reimbursed by NHI (KELA) when remitted by a doctor**
- **[www.biohithealthcare.com/test-request-form](http://www.biohithealthcare.com/test-request-form)**
- **GastroSoft® aids the doctor in interpreting the results ([www.gastropanel.com](http://www.gastropanel.com))**
- **Based on vertical measurement- and ELISA-technologies of the company**
- **[www.biohithealthcare.com/history](http://www.biohithealthcare.com/history)**
- **[www.biohithealthcare.com/additional-information](http://www.biohithealthcare.com/additional-information)**

### UPPER ABDOMINAL SYMPTOMS

- Present in some 20–40% of the population
- Correct diagnosis cannot be reached on the basis of symptoms alone
- Treatment trial with anti-acid compounds (eg. PPI-medication) may obscure the correct diagnosis and preclude the timely access to curative therapy

#### Dyspepsia may be accompanied by:

- *Helicobacter pylori* -infection (5–70% of population)
- as well as HP-induced or autoimmune-type atrophic gastritis (over 10% of the elderly people)
- These are accompanied by increased risk of gastric and oesophageal cancer
- And malabsorption of B12-vitamin, iron, calcium, magnesium and zinc (with severe sequels)
- As well as of some medicines, and particularly among elderly, severe and even fatal gastrointestinal and respiratory infections
- Dyspeptic symptoms can be of colorectal origin, particularly among the elderly, thus advocating the use of another Finnish innovation (**ColonView-FIT**, specific for human blood) to screen for the risk of colorectal cancer and early detection of its precursors

#### Among the dyspeptic patients, the unique GastroPanel® – *Helicobacter* test diagnoses

- ***Helicobacter pylori* -infection**
- **Atrophic gastritis** (gastric mucosal atrophy and dysfunction) and its location in antrum and/or corpus
- **Level of gastric acid output.** Continuous high acid output predisposes to oesophageal reflux disease, with associated ulcerative oesophagitis, Barrett's oesophagus and lower oesophageal cancer

### THE GASTROPANEL-DETECTED

- i) **symptomatic post-treatment *Helicobacter* infection,**
  - ii) **atrophic gastritis or**
  - iii) **symptomatic high acid output**
- are indications for gastroscopy and biopsies**

- The Finnish recommendations of the current management guidelines for “*Dyspepsia and reflux symptoms*” (PPI-test treatment and use of UBT- or SAT-tests) are incapable of accurately diagnosing *H. pylori*-infection and completely fail to detect atrophic gastritis, with the risk of gastric and oesophageal cancer and other conditions

### BIOMARKERS

- **Pepsinogen is the precursor of pepsin**
  - Pepsinogen I level reflects the function of gastric corpus (body) mucosa
  - Pepsinogen II level reflects the mucosal function of the whole stomach
- **Gastrin-17 is a peptide hormone synthesized by the G-cells in the gastric antrum**
  - regulates the acid output of gastric corpus and reacts to changes in this output
- ***Helicobacter pylori* -antibody levels disclose an ongoing *H.pylori* infection or previous exposure to this bacteria**
- Jointly with pepsinogen I and II levels, *H. pylori* –antibody test also discloses whether eradication has been successful
- Use of GastroSoft application for interpretation of the results of 4 biomarkers, together with the anamnestic data, gives a more comprehensive and accurate view on gastric mucosal function and integrity than possible to obtain by the stand-alone use of each marker ([www.gastropanel.com](http://www.gastropanel.com))

## WHY IS STOMACH HEALTH SO IMPORTANT

Atrophic gastritis (AG) is mostly asymptomatic (mucosal injury and dysfunction), and has two divergent etiologies:

- *H. pylori* -infection can progress to AG if untreated
- Autoimmune mechanism

AG results in hypoacidic or acid-free stomach, which increases the risk of gastric and oesophageal cancer

- This risk can be reduced by **Acetium-capsules** which bind carcinogenic acetaldehyde born in acid-free stomach
- Autoimmune-type AG is frequently accompanied by another autoimmune disease, e.g. celiac disease, IBD, rheumatoid arthritis, SLE, type 1 diabetes (DM1) and autoimmune thyroid disease (AITD)

**As compared to subjects with healthy stomach, AG-patients have an increased risk for gastric cancer (GC) that remains asymptomatic for a long time:**

- AG in the corpus: 5 x risk
- AG in the antrum: 18 x risk
- AG in both corpus and antrum: 90 x risk for GC

## GASTRIC AND OESOPHAGEAL CANCER IN FINLAND

- Annually, 570 new cases of GC are encountered and 460 patients die of GC, the respective numbers for oesophageal cancer being 330 and 270 (high >70% mortality)
- *Dyspepsia and Reflux symptoms* - Best Practice Guidelines- recommended measures (PPI-test treatment and UBT- or SAT-testing) do not reliably detect *H.pylori*-infection and completely fail to diagnose AG with the risks of GC, oesophageal cancer and others
- AG remaining undetected on time (increases with age; 10% among elderly) or prolonged unnecessary PPI (test) treatment might delay the correct diagnosis and preclude the patients' access to curative therapy
- Nationwide implementation of GastroPanel in the first-line diagnosis and screening could potentially avoid unnecessary cancer deaths and numerous other diseases as well as reduce the ever increasing health care costs

## WHY GASTROANEL BLOOD TEST

**1. To increase patient safety and to reduce costs, for symptomatic dyspeptic patients and for health checks of asymptomatic subjects, GastroPanel as the first-line diagnostic test before endoscopy, unless the patient has alarming symptoms**

- Endoscopy with biopsies is an expensive procedure and as the first-line examination, up to 80% are unnecessary and felt unpleasant by most patients
  - Current management guidelines make referral for endoscopy often only when the patient has alarming symptoms, when the outlook is poor
  - GastroPanel-diagnosis and screening help on timely finding of the subjects for endoscopy, treatment and follow-up

**2. GastroPanel corrects the severe shortcomings of the current management guidelines (*Dyspepsia and reflux symptoms*). The recommended UBT (13C-urea breath test) and SAT (stool antigen test) do not detect AG, and in addition, they can give false negative results on *H. pylori*, and do not give any information on gastric acid output.**

- Without correct *H. pylori* -diagnosis and/or timely diagnosis of AG, patients may develop or even succumb of gastric and oesophageal cancer or *H. pylori* -associated peptic ulcer disease
- Atrophic gastritis is the major cause of vitamin-B12 deficiency and the resulting diseases, like peripheral neuropathy, depression, dementia and possibly Alzheimer's disease
- Atrophic gastritis can contribute to calcium deficiency, and the resulting osteoporosis with bone fractures, as well as iron deficiency and the consequent diseases

**3. Coinciding the increased age, B12-vitamin-, calcium- and iron deficiency have become an increasing burden**

**4. AG remaining undetected by UBT- and SAT tests, can cause severe and even fatal respiratory and gastrointestinal infections particularly among elderly people**

***Dyspepsia and Reflux symptoms* -Management Guidelines do not include any warning about the severe shortcomings of the UBT and SAT tests.**

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**HUSLAB laboratory test directory includes the following indications for GastroPanel test:**

- The tests are used for the diagnostic workup of the symptoms in dyspeptic patients,
- in diagnosis of *Helicobacter pylori* infection, as well as
- for early detection of atrophic gastritis

<http://www.huslab.fi/Tutkimusohjekirja> search with *heliobakteeri*: 20609 fP-Mabi-La fP-Mahalaukun biomerkkiainetutkimus, laaja

## ADDITIONAL INFORMATION:

GastroPanel, ColonView-FIT and Acetium-innovations: [www.gastropanel.com](http://www.gastropanel.com), [www.colonview.com](http://www.colonview.com), [www.acetium.com](http://www.acetium.com)

State of the art diagnosis of *Helicobacter pylori*: [www.biohithealthcare.com](http://www.biohithealthcare.com) Links / State of the art diagnosis of *Helicobacter pylori* [www.biohithealthcare.com/Biohit-state-of-art-diagnosis-of-heliobacter-pylori-and-its-clinical-sequels](http://www.biohithealthcare.com/Biohit-state-of-art-diagnosis-of-heliobacter-pylori-and-its-clinical-sequels)

GastroPanel test request form: [www.biohithealthcare.com/test-request-form](http://www.biohithealthcare.com/test-request-form)

Screening model: [www.gastropanel.com/decision-makers/screening-model](http://www.gastropanel.com/decision-makers/screening-model)

Criticism about current care recommendations: [www.biohithealthcare.com/Criticism-about-current-care-recommendations](http://www.biohithealthcare.com/Criticism-about-current-care-recommendations)

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