

# Gastrointestinal Health Panel™

*Saliva and Stool Testing for Infectious & Functional Problems*



DIAGNOS-TECHS, INC.  
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# The GI Health Panels™

*The prevalence of gastrointestinal complaints in general practice is rather impressively large. Although many of these complaints are vague, the long-term clinical consequences of untreated complaints seems to be impaired nutrient assimilation with reduced regenerative capacity, and increased rate of aging. The causes of these complaints are ferreted out and investigated in the GI Health Panels™. The GI Health Panel™ is a 15 or 22 conjoint parameter analysis (refer to Test Listing) intended to evaluate gastrointestinal function and health non-invasively. The panel employs three stool and two saliva specimens.*

## Causes of GI Dysfunction

Pathogenic	Neuroenteric (not part of panel)	Non-Pathogenic	External Stressors
Parasitic Infestations	Dystonia of GI smooth muscle	Acquired or genetically determined functional and structural GI complaints	Dietary intolerances and allergies
Yeast Overgrowth			Environmental factors
Fungal Infections	Dysrhythmia of GI smooth muscle	Acquired or genetically determined functional and structural GI complaints	Pharmacological factors
Normal Flora Imbalances	Sympathetic/Parasympathetic imbalance		
Bacterial Overgrowth and Infections			

## Clinical Indications for GI Testing

- Inflammatory bowel disease
- Loose stool/diarrhea after travel or camping
- Chronic loose stool or constipation
- Sudden changes in bowel habits
- Insomnia
- Hyperactivity
- Fat, grain, and food intolerance
- Bloating, maldigestion, heartburn
- School and pool acquired GI problems
- Excess gas and flatulence
- Chronic abdominal discomfort/pain
- Chronic skin conditions
- Chronic fatigue and fibromyalgia
- Excessive eating or Anorexia

## Parasites - The Underestimated Invasion

The pathogen associated aspect of GI complaints is gaining increased recognition as evidenced by the U.S. based statistics shown below.

Percentage of U.S. Population Infected With:		
Clostridium difficile	5% of Population	Extrapolated = 13 million people
Giardia lamblia	7.2% Population	Extrapolated = 19 million people
Entamoeba coli	4.2% Population	Extrapolated = 11 million people
Endolimax nana	4.2% Population	Extrapolated = 11 million people
Toxoplasma gondii	40-50% Population	Extrapolated = 110 million people
Blastocystis hominis	2.6% Population	Extrapolated = 7 million people

## Saliva Based Testing:

Non-Invasive, Early Immuno-Detection of Parasites and Sophisticated Testing of Inherited Food Intolerances.



### Toxoplasma gondii

Description:  
Tissue Parasite

**Transmission:** Under cooked meats and contaminated food consumption. Exposure to cat feces.

**Method:** Salivary detection of secretory IgA antibodies to Toxoplasma by ELISA

**Sensitivity:** 80%

**Findings:** Persistent brain cysts leading to behavioral, cognitive and memory disorders; muscle cysts, depression, insomnia, reduced stress intolerance.



### Trichinella spiralis

Description:  
Tissue Worm

**Transmission:** Wildlife contact, eating improperly processed meat or eating food contaminated with such meat.

**Method:** Salivary detection of secretory IgA antibodies to Trichinella by ELISA

**Sensitivity:** 83%

**Findings:** Abdominal cramping, nausea, diarrhea, muscle soreness and pain, leading to fibromyalgia, edema of the upper eye lids, fever.



### Pork Tapeworm

Description:  
T. Solium

**Transmission:** Under cooked pork; Fecal-oral (including swine-to-human)

**Method:** Salivary detection of secretory IgA antibodies to tapeworm by ELISA

**Sensitivity:** 86%

**Findings:** Abdominal discomfort, brain cysts leading to cognitive decline, headaches and seizures; skeletal muscle cysts, blurry vision



### Roundworm (Ascaris lumbricoides)

Description:  
Ascaris Worm

**Transmission:** Fecal-oral; contaminated water, fruits/vegetables

**Method:** Salivary detection of secretory IgA antibodies to Ascaris lumbricoides by ELISA

**Sensitivity:** 92%

**Findings:** Most common worm infection worldwide; Nutritional deficiencies (macro and micro); reduced liver and pancreas function, intestinal colic, diarrhea, dyspepsia, spasmodic cough



### Entamoeba histolytica

Description:  
Luminal and Tissue Parasite

**Transmission:** Fecal-oral contamination; household; homosexuality

**Method:** Salivary detection of secretory IgA antibodies to Entamoeba histolytica by ELISA

**Sensitivity:** 80%

**Findings:** Episodic diarrhea, perianal itch, causing colon ulceration. Locally invasive causing liver and lung abscesses.



### Food Intolerance Testing

Common Food Intolerances

Analyzes the antigen specific Secretory IgA in saliva to detect genetically inherited food intolerances to:

- **Wheat (gluten)**
- **Eggs (ovalbumin)**
- **Cow's milk (casein)**
- **Soy protein**

Predisposed individuals often experience intestinal inflammation after consumption of offending foods. Subsequently, the intestinal mucosa releases Secretory IgA to neutralize the antigens. SIgA testing, unlike IgG, allows the detection of mild, subclinical, and latent intolerance cases. Furthermore, the short SIgA half-life insures earlier and more effective compliance and follow up assessments.



## Case Study 1

Missed Diagnosis

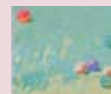
### BACKGROUND

Patient had mild discomfort in left abdomen with some irregular bowel movements. Patient had a stool exam at another laboratory. Results showed normal values with a so called mild "dysbiosis." Patient was treated with herbs and lactobacilli, six months later patient consults another physician for same problem. A GI Health Panel™ was then ordered from Diagnos-Techs.

### FINDINGS

Elevated Lysozyme	Colon inflammation marker
Occult blood	Positive

Our laboratory recommended endoscopy due to lysozyme increase. Patient had a colonic tumor (CA) the size of an orange. Surgery was required.



## Case Study 2

Wrong Diagnosis

### BACKGROUND:

A 28 year old male had mild abdominal discomfort and fragmented stools. Patient had a stool analysis at another laboratory which showed alleged "dysbiosis" with some citrobacter spp. and reduced content of short chain fatty (SCF) acids in stool. He was treated with antibiotics over six years and still had symptoms in spite of citrobacter elimination. The SCF acids reverted to normal. Patient sought help at another clinic. A GI Health Panel™ with a transit retention time capsule was ordered.

### FINDINGS:

Clostridium Antigen	Positive
reduced transit time of 8 hours	normally 20-28 hours
ACHY	Elevated

C. difficile was treated with tinidazole for 7 days. Transit time was normalized with 1/3 tablet Loperamide. Elevated ACHY which indicated small intestine irritation was rectified using a gooseberry paste supplement (Amla Paste™) for 30 days. Follow up showed that all parameters were within range and patient was healthy and symptom-free.

Other available test panels:



### Regular Gastrointestinal Health Panel™ (GI-1™)

**No of Samples:** 2 Saliva + 3 Stool

**Includes tests for:** Stool culture for yeast, ova and parasites microscopy, bacterial stool pathogens, clostridium difficile antigens, giardia antigen, cryptosporidium antigen, ameba histolytica Ab, H. pylori Ab, chymotrypsin, occult blood, fecal pH, total intestinal SIgA, intestinal lysozyme, alpha anti-chymotrypsin, and gluten intolerance test

#### Indications:

- General fatigue and loss of vitality
- See GI-2™ indications

### Expanded Gastrointestinal Health Panel™ (GI-2™)

**No of Samples:** 2 Saliva + 3 Stool

**Includes all tests in GI-1™ panel plus:** Tapeworm Ab, roundworm Ab, tissue worm Ab, toxoplasma Ab, cow's milk intolerance, soy intolerance, and egg intolerance

#### Indications:

- Inexplicable loss of body weight
- Diarrhea, loose stools
- Indigestion/Reflux
- Constipation
- Nutritional deficiencies
- Inflammatory conditions

### Food Intolerance Panel™ (FIP™)

**No of Samples:** 1 saliva

**Includes tests for:** Intolerance of gluten, cow's milk, egg and soy protein

#### Indications:

- Diarrhea, loose stools
- Indigestion/Reflux
- Constipation
- Poor assimilation of nutrients
- Inflammatory conditions
- \* It is quite common not to display symptoms and yet still have 1 or more food intolerances

## WHAT DIAGNOS-TECHS DOES

### Improved Parasitic Detection:

Many parasites are elusive and difficult to visualize in routine microscopic stool examinations because they are fragmented, or the stool was not collected during their shedding cycle, or obligate intracellular buried in intestinal cells. To circumvent these limitations, DTI uses parasitic antigens and secretory antibody based methods to detect Giardia, Cryptosporidium, Ameba, Roundworm, Tapeworm, Toxoplasma, Trichinella, and Flukes.

### MicroFlora Evaluation / Pathogen Detection:

The colonic microflora is comprised of over 600 species of bacteria. DTI globally assesses the normal gut flora and will speciate all isolated fungi, yeast, overgrowing flora and pathogens. Examples: Staphylococcus, streptococcus, Aeromonas, corynebacterium, Klebsiella, Enterobacter, Citrobacter, Morganella pseudomonas, proteus, etc.

Our panels routinely include reflex sensitivity testing for relevant bacterial pathogens. DTI dropped all yeast sensitivity testing a long time ago due to lack of correlation with clinical efficacy of substances.

### Food Intolerance and Allergies:

We test for the constitutional intolerances to grain, soy, egg and milk proteins using antigen-specific Secretory IgA. Intolerant patients experience a toxic reaction when the food in question is consumed. This reaction will trigger an inflammatory/immune response leading to SIgA production. SIgA, unlike IgG, has a short memory of several weeks, allowing you to monitor compliance within 60 days of treatment.

### Digestive Capacity / Malabsorption:

We test for Chymotrypsin, a reliable marker for all digestive enzymes from the pancreas. We also test for occult blood and fecal pH. We do not quantitate any short chain fatty acids (SCFA) in stool.

### Mucosal Immunity and other Markers:

Our panel includes parameters of mucosal immunity, colonic inflammation and small intestinal irritation which help diagnose and localize the site of GI problems (colon vs. small intestine). The test results allow you to detect subtle insults to the gut.

## WHAT OTHER LABS DO

The competition offers a purge which is traumatic to patients, and will burst many parasites precluding the ability to visualize them microscopically. Many companies use immunofluorescence slide visualization for parasite detection which requires presence of intact organisms. Many parasites are missed by only using microscopic visualization techniques.

Other laboratories presume that a partial non-quantitative evaluation of 1-2% of the microflora species, allows them to make general statements such as "Dysbiosis." This unscientific reporting ignores the important quantitative relationships between the climax microfloral communities and underestimates the role of a majority of non-tested species. In vitro yeast sensitivity testing does not correlate with clinical efficacy of antimicrobials tested. A natural / herbal product may show inhibition to specific yeast in a Petri dish at a certain concentration. However, this does not imply that the ingested herb will achieve comparable concentrations in the actual tissue sites infected by the yeast.

Other labs do not include food intolerance tests in their GI panels.

Note: Serum IgG is an indirect way of testing for food intolerance; the fact that a patient has a positive response to a food item does not mean that there is an accompanying GI reaction or toxicity. Many patients show an IgG response to foods they have never eaten in their lifetime. Clinically, patients may not experience any difference after avoiding the foods in question.

SCFA'S are end-products of bacterial fermentation of dietary fiber. The relative SCFA stool composition depends on diet choice, transit time, and the actual gut flora of a specific individual. Published papers show that random stool SCFA are poor markers of GI health or colonic cancer risk.

Other labs do not offer any gut immunity and inflammation markers. The leaky gut test they offer is only symptom/condition detection without examining the causative factors that include inflammation, foreign organisms, offensive foods.... DTI avoids diagnosing a symptom without reporting on the causes.



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