CDSA 2.0 Comprehensive Digestive Stool Analysis 2.0

The Comprehensive Digestive Stool Analysis 2.0 (CDSA 2.0) is the most advanced non-invasive evaluation of ***specific gastrointestinal imbalances.*** *In addition to identifying general dysfunction, this assay provides direct measures to pinpoint the diagnosis and treatment of patients with many digestive conditions such as Irritable Bowel Syndrome (IBS) and Inflammatory Bowel Disease (IBD).*

Digestive complaints are among the most common reasons that individuals seek medical care. Recent evidence now confirms that GI abnormalities are associated with many conditions outside the GI tract.

General GI Dysfunction:	***Extra-intestinal Indications:***	***Specific GI Indications:***
Indigestion	Osteoporosis	Post Inflammatory IBS
Constipation	Diabetes	Crohns Disease or Ulcerative Colitis (IBD)
Diarrhea	Arthritis	Family history of IBD
Gas and Bloating	Autoimmune disease	Family history of Gastrointestinal cancers
Recent use of antibiotics	Fibromyalgia	Pancreatic Insufficiency
GI infection/Dysbiosis	Chronic Fatigue	Gallstones
		Abdominal Pain

Digestion/Absorption Markers:
(Pancreatic Elastase, Putrefactive SCFAs, n-Butyrate)

- Direct measure of Pancreatic Digestive Enzyme output without interference from digestive supplements, changes in stool transit time or marker variability. Low levels of digestive enzyme output are associated with intestinal and Extra-intestinal conditions.

Gut Immunology Markers:
(Calprotectin, Eosinophil Protein X)

- This quantitative analysis identifies mild, moderate or severe inflammation within the GI tract. Elevations of these markers are associated with infection (bacterial, viral, & parasitic), food allergy, NSAID enteropathy, IBD and neoplasia.
- GI inflammation is associated with Intestinal and Extra-intestinal conditions.

Metabolic Markers:
(Short Chain Fatty Acids, pH, Beta-glucuronidase, Bile Acids)

- Abnormal levels of Short Chain Fatty Acids may indicate alterations in gut flora, insufficient dietary fiber, altered transit time and small bowel bacteria overgrowth.
- The chemistry markers identify imbalances that are associated with increased toxic burden within the colon, increasing long-term risk for colon and breast cancers.

Microbiology Markers:
(Bacteriology, Mycology)

- Quantitative measures of the beneficial flora Lactobacillus and Bifidobacterium
- Quantitative measures of additional flora, including strict pathogenic bacteria and potentially pathogenic and bacteria and yeast.
- An imbalance in GI flora is associated with Intestinal and Extra-intestinal conditions.

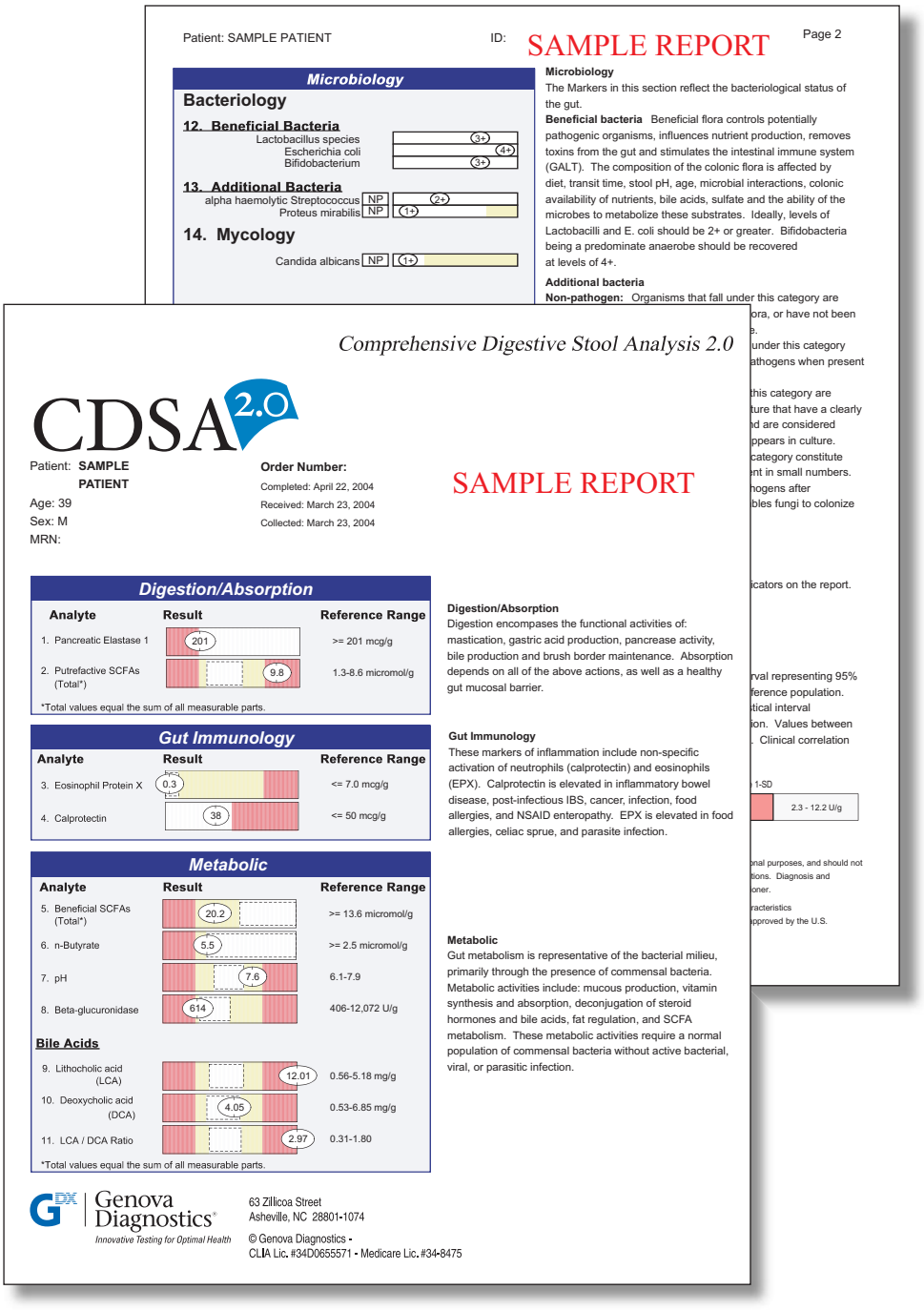
Parasitology:
(EIA and microscopic evaluation)

- With the highest documented recovery rates (22% positivity rate), this Parasitology exam quantifies all ova and parasites identified.
- Includes microscopic evaluation for yeast and blood cells.

- ***Analytes:***
  Pancreatic Elastase 1, Putrefactive SCFAs, Short Chain Fatty Acids, n-Butyrate, Calprotectin, Eosinophil Protein X. pH, Beta-glucuronidase, Bile Acids, Bacteriology, Mycology, EIA, microscopic evaluation

- **Specimen Requirements:**
  5cc stool in each vial–3 SAF, 2 Cary Blair, 1 Formalin; 40ml stool in yellow-top cup; 20 ml stool in clean vial. May be random stool or purge.

- ***Before Taking this Test:***
  - **Avoid antibiotics, antifungals, laxatives, and anti-diarrheals (for 3 days)**
  - **Avoid use of non-steroidal anti-inflammatories (for 2 days)**
  - **See instructions inside test kit for more details**



Patient: SAMPLE PATIENT ID: SAMPLE REPORT Page 2

Microbiology

Bacteriology

12. Beneficial Bacteria

Lactobacillus species 3+
Escherichia coli 4+
Bifidobacterium 3+

13. Additional Bacteria

alpha haemolytic Streptococcus NP 2+
Proteus mirabilis NP 1+

14. Mycology

Candida albicans NP 1+

Microbiology
The Markers in this section reflect the bacteriological status of the gut.

Beneficial bacteria Beneficial flora controls potentially pathogenic organisms, influences nutrient production, removes toxins from the gut and stimulates the intestinal immune system (GALT). The composition of the colonic flora is affected by diet, transit time, stool pH, age, microbial interactions, colonic availability of nutrients, bile acids, sulfate and the ability of the microbes to metabolize these substrates. Ideally, levels of Lactobacilli and E. coli should be 2+ or greater. Bifidobacteria being a predominate anaerobe should be recovered at levels of 4+.

Additional bacteria
Non-pathogen: Organisms that fall under this category are
ora, or have not been
under this category
athogens when present

this category are
ture that have a clearly
d are considered
ppears in culture.
category constitute
nt in small numbers.
nogens after
bles fungi to colonize

icators on the report.

rval representing 95%
ference population.
tical interval
ion. Values between
. Clinical correlation

1-SD
2.3 - 12.2 U/g

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Comprehensive Digestive Stool Analysis 2.0

CDSA 2.0

Patient: SAMPLE PATIENT
Age: 39
Sex: M
MRN:

Order Number:
Completed: April 22, 2004
Received: March 23, 2004
Collected: March 23, 2004

SAMPLE REPORT

Digestion/Absorption

Analyte	Result	Reference Range
1. Pancreatic Elastase 1	201	>= 201 mcg/g
2. Putrefactive SCFAs (Total*)	9.8	1.3-8.6 micromol/g

*Total values equal the sum of all measurable parts.

Digestion/Absorption
Digestion encompases the functional activities of: mastication, gastric acid production, pancrease activity, bile production and brush border maintenance. Absorption depends on all of the above actions, as well as a healthy gut mucosal barrier.

Gut Immunology

Analyte	Result	Reference Range
3. Eosinophil Protein X	0.3	<= 7.0 mcg/g
4. Calprotectin	38	<= 50 mcg/g

Gut Immunology
These markers of inflammation include non-specific activation of neutrophils (calprotectin) and eosinophils (EPX). Calprotectin is elevated in inflammatory bowel disease, post-infectious IBS, cancer, infection, food allergies, and NSAID enteropathy. EPX is elevated in food allergies, celiac sprue, and parasite infection.

Metabolic

Analyte	Result	Reference Range
5. Beneficial SCFAs (Total*)	20.2	>= 13.6 micromol/g
6. n-Butyrate	5.5	>= 2.5 micromol/g
7. pH	7.6	6.1-7.9
8. Beta-glucuronidase	614	406-12,072 U/g
Bile Acids		
9. Lithocholic acid (LCA)	12.01	0.56-5.18 mg/g
10. Deoxycholic acid (DCA)	4.05	0.53-6.85 mg/g
11. LCA / DCA Ratio	2.97	0.31-1.80

*Total values equal the sum of all measurable parts.

Metabolic
Gut metabolism is representative of the bacterial milieu, primarily through the presence of commensal bacteria. Metabolic activities include: mucous production, vitamin synthesis and absorption, deconjugation of steroid hormones and bile acids, fat regulation, and SCFA metabolism. These metabolic activities require a normal population of commensal bacteria without active bacterial, viral, or parasitic infection.

Genova Diagnostics®
Innovative Testing for Optimal Health

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This test reveals important information about:

- ***Calprotectin*** *as an important marker of gastrointestinal inflammation. It can help to distinguish IBD & IBS, as well as other inflammatory conditions.*
- ***Pancreatic Elastase*** *to distinguish maldigestion from pancreatic versus gastric sources.*
- ***Decreased exocrine pancreatic function*** *is linked to gallstones, diabetes, osteoporosis, and autoimmune diseases.*
- ***Gastrointestinal tract inflammation*** *occurring in response to food allergy, protein-sensitive enteropathy, helminthic infection, IBD, allergic colitis, or neoplasm.*
- ***Bile Acids*** *play an important role in fat emulsion and fat absorption. High levels of some bile acids are associated with increased toxin buildup, increased risk of gallstones, and gastro-intestinal neoplasms.*

For test kits, clinical support, or more information contact:

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More detailed publications with references are also available:

- **www.GDX.net**