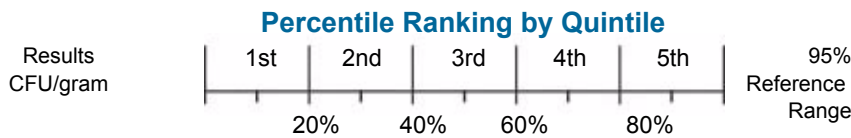


Accession Number: **A1201270083**  
Reference Number:  
Patient: Ben G Greenfield  
Age: 30 Sex: Male  
Date of Birth: 12/20/1981  
Date Collected: 1/25/12  
Date Received: 1/27/12  
Report Date: 2/9/12  
Telephone: (888) 371-1033  
Fax:  
Reprinted:  
Comment:

Ordering Physician:  
Palladium Health / Bioletics  
Rick Cohen MD  
2947 NW Shevlin Meadows  
Bend, OR 97701

## 2100 Gastrointestinal Function Profile

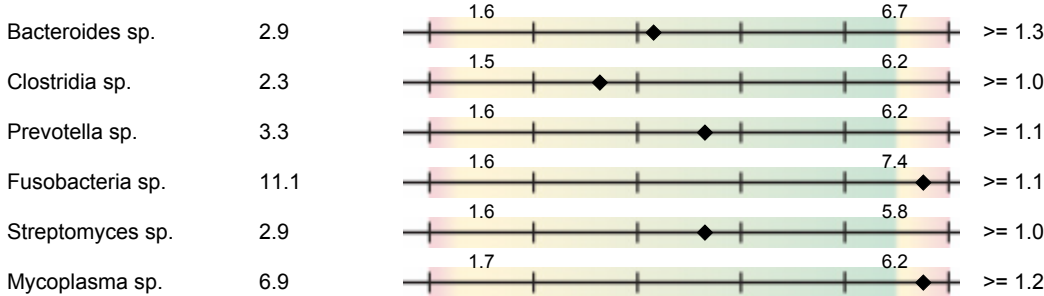
Methodology: DNA Analysis, GC/MS, Microscopic, Colorimetric, Automated Chemistry, ELISA



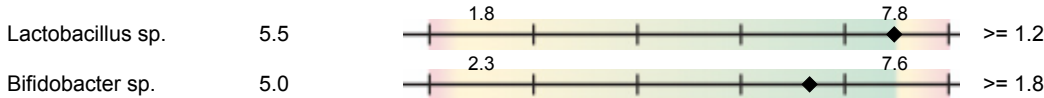
Consistency = Formed/Normal

### Predominant Bacteria (E+007) E+007

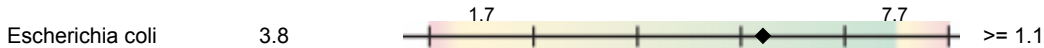
#### Obligate anaerobes



#### Facultative anaerobes



#### Obligate aerobes



### Opportunistic Bacteria

No clinically significant amounts.

**Units and Reference Ranges**

Organisms are detected by DNA analysis. One colony forming unit (CFU) is equivalent to one bacterium. Each genome detected represents one cell, or one CFU. Results are expressed in scientific notation, so an organism reported as 2.5 E7 CFU/gram is read as 25 million colony forming units per gram of feces. The cutoff for significance of Opportunistic Bacteria has been set at 1.0E+ 005 (100,000). These are levels above which clinically significant growth may be present. Rather than reporting semi-quantitative +1 to +4 levels, the new methodology provides full quantitative analysis.

**Predominant Bacteria** play major roles in health. They provide colonization resistance against potentially pathogenic organisms, aid in digestion and absorption, produce vitamins and SCFA's, and stimulate the GI immune system. DNA probes allow detection of multiple species (sp.) within a genus, so the genera that are reported cover many species.

**Opportunistic Bacteria** may cause symptoms and be associated with disease. They can affect digestion and absorption, nutrient production, pH and immune state. Antibiotic sensitivity tests will be performed on all opportunistic bacteria found, although clinical history is usually considered to determine treatment since the organisms are not generally considered to be pathogens.

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### Pathogenic Bacteria

95% Reference Range

Organism	Result	Reference Range
Helicobacter pylori	6.7E+005 <b>H</b>	<=1.0E+005
E.H.E. coli	<0.01	<=1.0E+005
Clostridium difficile	<0.01	<=1.0E+005
Campylobacter sp.	<0.01	<=1.0E+005

### Yeast/Fungi

Expected Value

No clinically significant amounts.

#### Yeast/Fungi

Yeast overgrowth has been linked to many chronic conditions, in part because of antigenic responses in some patients to even low rates of yeast growth. Potential symptoms include diarrhea, headache, bloating, atopic dermatitis and fatigue. Positives are reported as +1, +2, +3 or +4 indicating >100, >1000, >10000 or >100000 pg DNA/g.

### Parasites

Expected Value  
Neg

Parasite present; taxonomy unavailable. **Positive**

A taxonomy unavailable finding likely indicates an ingested protozoan and not a human parasite. It does not indicate treatment unless patient symptoms and other inflammatory markers are consistent with parasite infection.

#### Parasites

Parasite infections are a major cause of non-viral diarrhea. Symptoms may include constipation, gas, bloating, increased allergy response, colitis, nausea and distention.

### Adiposity Index

Phylum	Value	Reference Range
Firmicutes	74	<= 80
Bacteroidetes	26	>= 20

The **Adiposity Index** is derived by using DNA probes that detect multiple genera of the phyla Firmicutes and Bacteroidetes. Abnormalities of these phyla may be associated with increased caloric extraction from food.

### Drug Resistance Genes

aacA, aphD	Pos	gyrB, ParE	Neg
mecA	Neg	PBP1a, 2B	Neg
vanA, B, and C	Neg		

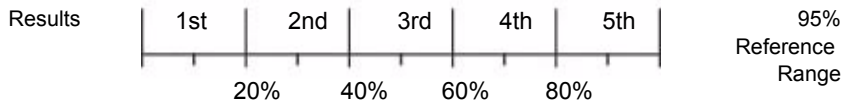
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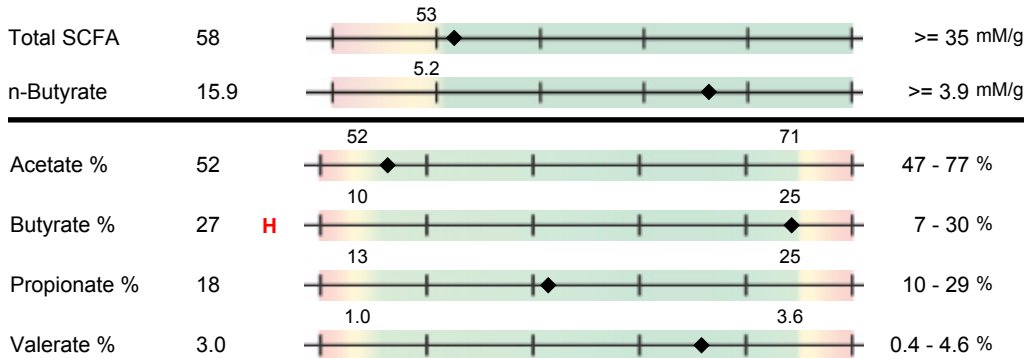
## 2100 Gastrointestinal Function Profile

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### Percentile Ranking by Quintile



#### Beneficial SCFA



#### Beneficial SCFA

**Short chain fatty acids (SCFA)** are produced by bacterial fermentation of dietary polysaccharides and fiber. The product, N-butyrate, is taken up and used to sustain the normal activity of colonic epithelial cells. Butyrate has been shown to lower the risk of colitis and colorectal cancer. A healthy balance of GI microbes depends on production of SCFA by one specie to allow the normal growth of another one in a complex cross-feeding network.

#### Inflammation



#### Inflammation

**Lactoferrin**, an iron-binding glycoprotein, is released in IBD but not in non-inflammatory IBS. High levels are found in Crohn's, UC or infection. WBC's are elevated in general inflammation/infection. Mucus is often visualized in acute GI inflammation.

#### Immunology



#### Immunology

High fecal slgA indicates immune system reactions to the presence of antigens from bacteria, yeast or other microbes. Low slgA can result from stress or malnutrition. Anti-gliadin slgA is a screening marker for gluten sensitivity.

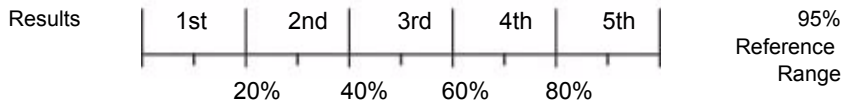
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### Percentile Ranking by Quintile



### Additional Tests

pH	6.1	5.9	6.9	5.7 - 7.1	Neg
RBCs	Neg				
Color	Brown				

### Additional Tests

pH is influenced by numerous factors, but it is strongly related to the bacterial release of pH-lowering organic acids and pH-raising ammonia. Positive **RBCs** can signify GI tract bleeding. **Color** (other than brown) abnormalities can be due to upper GI bleeding, or bile duct blockage, steatorrhea or antibiotic use.

### Digestion

Elastase 1	297	L	321	>= 184 ug/g
Triglycerides	111		119	<= 181 mg/dL
Putrefactive SCFA	2.9		4.4	<= 7.4 mM/g
Vegetable Fibers	Few			None-Few

### Digestion

**Pancreatic elastase 1** levels below the reference limits are strongly correlated with pancreatic insufficiency. High triglycerides signify fat maldigestion. Putrefactive SCFA are a result of bacterial fermentation of undigested protein. High numbers of vegetable fibers indicate maldigestion.

### Absorption

LCFAs	14.3	H	9.1	<= 15.1 mmol/L
Total Fat	17.1	H	12.9	<= 18.9 mmol/L
Cholesterol	62		142	<= 191 mg/dL

### Absorption

High **LCFA** indicates fat malabsorption due to pancreatic or biliary insufficiency, or acute bacterial infection that produces intestinal cell destruction. High total fat usually signals malabsorption, as does elevated fecal cholesterol.

UC\*\* = Unable to Calculate

Decisions involving diagnosis and treatment are the responsibility of the clinician.