Metametrix
Clinical Laboratory
3425 Corporate Way
Duluth, GA 30096
770.446.5483 Fax:770.441.2237

Wellcome
May 29, 2012

Ordering Physician:

Forrest Health Center
Steven Forrest DC
430 Monterrey Avenue
Suite 2
Los Gatos, CA 95030

Need to Improve

2105 Microbial Ecology Profile

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

Consistency = Formed/Normal

Percentile Ranking by Quintile

	Results CFU/gram	1st	2nd	3rd	4th	5th	95% Reference Range
			20%	40%	60%	80%	

Predominant Bacteria E+007

E+007

Obligate anaerobes

2012 Balance

2012 Feb = ●

	2011 Sep	2012 Feb	May		1.6	6.7	
Bacteroides sp.	2.9	8.6	3.4	Better			>= 1.3
Clostridia sp.	1.7	1.7	3.8	Better	1.5	6.2	>= 1.0
● Prevotella sp.	2.0	2.0	2.1	Same	1.6	6.2	>= 1.1
● Fusobacteria sp.	2.0	2.0	2.7	Better	1.6	7.4	>= 1.1
Streptomyces sp.	2.0	1.8	5.7	Better	1.6	5.8	>= 1.0
● Mycoplasma sp.	7.7	1.8	1.8	Same	1.7	6.2	>= 1.2

Facultative anaerobes

● Lactobacillus sp.	5.3	5.2	2.8	Worse	1.8	7.8	>= 1.2
Bifidobacter sp.	2.5	3.0	4.3	Better	2.3	7.6	>= 1.8

Obligate aerobes

● Escherichia coli (E. coli)	2.6	1.6	2.5	Better	1.7	7.7	>= 1.1

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
Helicobacter pylori	<0.01	<=1.0E+005
E. coli 0157:H7	<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

Parasite present; taxonomy unavailable. **Positive** Neg

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

Firmicutes	60		<= 80
Bacteroidetes	40		>= 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	Neg	gyrB, ParE	Neg
mecA	Neg	PBP1a, 2B	Neg
vanA, B, and C	Neg		

Drug Resistance Genes
aacA, aphD - Gentamycin, Kanamycin, and Tobramycin
mecA - Methicillin
VanA, vanB, vanC - Vancomycin and Teicoplanin
GyrB, ParE - Ciprofoxacin and later quinolones
PBP1a, PBP2B - Penicillin

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