



GI Balance

Boston Heart is proud to offer gastrointestinal microbiome testing. The GI Balance test provides a comprehensive picture of your gut microbiome by assessing the metabolic pathways and physiological properties that rely on the gut microbiome to thrive. The information provided in the report helps one to understand the health of the microbiome and which specific nutrients are needed to optimize the gut microbiome on a very personal and individual level.

Microbiome Testing

Our body is home to thousands upon thousands of different microbial species. In fact, there are more microbial cells than human cells in the body. Each microbial species has a set of specific physiological features (phenotypes), and a combination of these features is key to maintaining optimal health.

What is the microbiome?

The microbiome plays a vital role in human nutrition, digestion, immunity, and disease. Your body is full of trillions of microbes, including bacteria, viruses, and fungi, mostly inside your intestines and on your skin. In fact, in a healthy human adult, microbes outnumber human cells by a ratio of 10:1. These microbes have been working with our bodies to keep us healthy since we were born, and are inextricably linked to our health. In fact, in many disease states, the microbial composition is found to be altered, which likely exacerbates the disease.

What is microbiome testing?

Microbiome testing uses a physical specimen from the body (i.e. stool for the gut microbiome) to reveal information about the bacteria and other microorganisms present in the microbiome of interest. Current technologies allow identification of microbial communities in various body sites that have important physiological functions. Analyzing and comparing multiple microbiome samples allows one to identify health/disease associated patterns. Emerging patterns distinguish a healthy from unhealthy microbiome and subsequently inform one how to support a healthy microbiome or how to improve an unhealthy one to restore optimal function.

The GI Balance Report

The GI Balance report provides insights to whether the bacterial phenotypes in your body are within normal range or need attention, and gives an understanding of how your gut bacteria are contributing, either optimally or sub-optimally, to your bodily function. It will provide insights into the diversity of the gut bacteria, and traditional markers of gut microbiome health, including important ratios and commensal bacteria.

Biomarkers analyzed

- **Bacterial Balance:** A proper balance in the microbiome is important to gut health
- **Cardiovascular Toxin Producers:** The gut microbiome plays a key role in heart health with toxins created by bacteria being associated with increased risk for CVD.
- **Short Chain Fatty Acid (SCFA) Producers:** Robust levels of SCFAs have been associated with lower blood pressure, decreased risk of stroke, lower rates of metabolic syndrome and reduced inflammation.
- **Sugar Utilizers:** Sugars act as prebiotics for gut bacteria, which can be used to promote or suppress parts of the bacterial gut community.
- **Vitamin Producers:** B Vitamins are precursors of nearly all metabolic coenzymes essential for normal metabolism.
- **Amino Acid Producers:** Recent research has shown that certain bacteria in the gut microbiome are capable of producing some amino acids, such as histidine, tryptophan, and cysteine.

For more information, contact your **Area Sales Manager** or Customer Care at **877.425.1252** or **customercare@bostonheartdx.com**





BIOMARKER	BIOMARKER DESCRIPTION
Bacterial Balance	
Alpha Diversity	The diversity of microbial species within a sample. A higher alpha diversity score indicates greater species richness and evenness (a healthier sample)
Top 5 Taxa	A list of the top 5 most abundant taxa within your gut microbiome.
Firmicutes/ Bacteroidetes Ratio	A higher ratio is associated with obesity and metabolic disorders. A lower ratio is associated with a healthier metabolic profile and reduced risk of chronic diseases
Prevotella/ Bacteroides Ratio	A higher ratio may be associated with improved glucose and lipid metabolism, as well as a reduced risk of inflammatory bowel disease and colorectal cancer. A lower ratio has been associated with a higher risk of obesity and metabolic disorders
Cardiovascular Toxin Producers	
Lipopolysaccharides	Are in the outer membrane of gram-negative bacteria and are highly inflammatory. Elevations have been associated with higher risk of CVD.
Trimethylamine (TMA)	Is produced by gut bacteria from dietary precursors and is modified to Trimethylamine N-Oxide (TMAO) in the liver which is strongly associated with CVD.
Short Chain Fatty Acid Production	
Butyrate producers	Play an integral role in maintaining digestive health by regulating gene expression, gut tissue development, immune modulation, and oxidative stress reduction
Propionate producers	Have a significantly positive impact on the immune system, including improving lung health and increasing resistance to infection
Acetate producers	Is utilized for cholesterol synthesis and lipogenesis. Excessive production with insufficient butyrate production can lead to fat gain, particularly around the liver.
Sugar Utilization	
FOS utilizers	Bacteria that utilize FOS can be helpful in weight loss and correcting constipation.
Arabinose utilizers	Bacteria that utilize arabinose can be helpful with blood sugar balancing and metabolic syndrome.
Inositol utilizers	Inositol can be beneficial for metabolic syndrome, lipid imbalances, insulin resistance.
Lactose utilizers	Lactose intolerance is a common medical problem. Colonic bacterial adaptation can significantly improve symptoms of intolerance.
Vitamin Production	
Thiamine (B1)	Plays a critical role in energy metabolism, particularly in the brain and nervous system, as well as in the growth and function of cells.
Riboflavin (B2)	Component of two important coenzymes required for energy production and fatty acid metabolism, as well as metabolism of drugs and steroids.
Niacin (B3)	Required for the coenzyme NAD, which is involved in more than 400 enzymatic reactions in the body. NAD works to convert food into energy for our cells.
Pantothenate (B5)	Plays a major role in energy production, particularly the breakdown of fatty acids. It may play a role in reducing lipid production in certain individuals.
Pyridoxine (B6)	Required for coenzymes that play a role in enzymatic reactions mostly concerning protein metabolism, immune function, and brain development during pregnancy.
Biotin (B7)	Plays a role in energy production, histone modification, gene regulation, and cell signaling. Signs of deficiency include skin rashes, hair loss, and brittle nails.
Folate (B9)	Required to synthesize DNA, metabolize amino acids, enable methylation, and prevent anemia, as well as protect against neural tube defects in pregnancy.
Cobalamin (B12)	Important in synthesizing DNA and red blood cells, brain and nervous system function, and metabolism. It is required to prevent megaloblastic anemia.
Amino Acid Production	
Cysteine producers	Beneficial as an antioxidant, assists with collagen formation, and immune system regulation.
Tryptophan producers	Is important in the production of neurotransmitters that regulate mood, particularly depression, and intestinal barrier integrity.
Histidine producers	Histidine and its derivatives have important roles in the immune response, blood clotting pathways, and detoxification.
Area of Focus	
Nutrition	Personalized food lists that contain a high amount of the nutrients that are needed to drive the patient's underrepresented bacteria.
Supplements	Contains personalized nutrients that also drive the patient's underrepresented bacteria.

Order Code: 952

Sample Requirements: Stool sample collection tube with preservative

Payment Information: A patient payment of \$149 is required. This test is not billable to insurance.



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Boston Heart Diagnostics, a subsidiary of Eurofins Scientific (EUFI.PA), offers a comprehensive and integrated approach to enhance care management. We accomplish this by using the following three phases, each an integral part of our success:

Characterize: Diagnostics that drive reports with color coded test results, interpretations and clinical treatment considerations that help characterize risk, develop insight and communicate more reflectively with patients.

Individualize: Diagnostic reports communicate test results into actionable, individualized and easy-to-understand steps which improves patient engagement, health literacy and adherence to treatment plans.

Engage: Personalized Nutrition and Life Plan will use the patients' lab results and food preferences to provide personalized and easy-to-follow lifestyle direction so patients can improve their test results and reduce their chronic disease risk.

