

Functional Medicine and Functional Lab Profiles: 21st Century Healing Based Upon 21st Century Testing and Diagnosis

Functional Diagnostic Medicine is an amazingly fast growing approach to treating even the most difficult to treat medical conditions. It has been around for more than twenty years. In fact, its roots go back more than half a century. Most medical professionals consider Jeffrey Bland, PhD, to be the “father” of functional medicine (see http://www.jeffreybland.com//content/Dr_Jeffrey_Bland.aspx). Most truly, it offers a giant step forward in the diagnosis, treatment and prevention of many of today’s most chronic diseases.

Clinicians practicing functional diagnostic medicine are able to identify underlying causes of many health conditions by uniquely designed questionnaires, years of specialized training, utilization of assays and tests that seek to identify reasons for root causes and not simply surface symptoms. These are not your standard medical tests. These tests have been designed by researchers and scientists from the finest universities and innovative, licensed laboratories. They expand the boundaries of inquiry to include investigation of the biochemical and metabolic glitches likely to cause a specific disease process. Based on the results of these tests, physicians are then able to develop personalized, patient-specific treatment protocols designed to reverse, stop or prevent the disease and its related symptoms.

Later in this document, I have provided some basic information about three of the labs that run the kinds of functional profiles I am discussing. They are licensed and in compliance with official criteria and qualifications. In addition to reviewing the fundamental descriptions of some of the profiles I often recommend, I invite you to search their websites for descriptions of the other tests and profiles they provide. Their test menus may seem unfamiliar, but they can produce truly remarkable data that help in the treatment of the most difficult and chronic conditions. If you have “fallen through the cracks” in your attempts to get well, I know your patience is thin. I believe that you owe it to yourself to spend time researching what labs like these have to offer, especially after all the tests you have taken already that have revealed nothing much to help you).

Unlike the disease-specific approach which is geared to suppress the expression of symptoms, physicians practicing functional diagnostic medicine are delighted to discover that many diseases have a real underlying cause which when identified and corrected can have a dramatic impact on the health of their patients.

When was the last time you really felt healthy?

The reason you may not feel your best is because you have developed an unhealthy lifestyle. As we get older we tend to develop bad habits and take our health for granted. Poor eating, stress, environmental and chemical toxins, and lack of exercise all take a toll on your natural defenses. For a while your body was able to cope. However, now you may have noticed some changes: You probably don’t get enough sleep and when you do sleep you may catch yourself having to get up two, three or more times during the night. The food you eat simply does not satisfy you. Losing weight has never been more difficult. You may exercise, but something still does not feel right inside. You can’t seem to put your finger on it. You simply don’t feel well, but you don’t have any obvious symptoms that would make you want to see your healthcare professional. In fact, these puzzling, non-specific symptoms may be an early warning that one or more of your body’s systems are malfunctioning.

Symptoms are Signals

Just like the red warning light in your car that flashes when there is a problem with your engine. A physical symptom is a signal telling you that an underlying health problem needs to be corrected. Treating a symptom without uncovering the real cause is like placing a piece of black tape over the blinking red warning light. The consequences of this action are obvious and more costly than necessary. Unfortunately our bodies can't be overhauled and chronic neglect of these symptoms could eventually lead to a serious illness.

The following examples show the medical detective work involved in the diagnosis and treatment of three common conditions:

CASE 1

Traditional Medical Approach:

Patient: Male with a chief complaint of sinus infections and allergies for a period of six years. Patient had previously consulted with three medical physicians before scheduling an appointment to see a functional medicine clinician. Medical testing included a CT scan of the sinuses which was negative for any pathologies. Treatment consisted of the following prescriptions: Sudafed, Claritin-D and Allegra. Results were poor.

Functional Medical Approach:

Patient was evaluated with an extensive initial consultation and, based upon the review of his history and medical records a decision was made to order an Airborne Allergy test and Food Sensitivity test (this is not the same as food allergy testing). The results revealed that the patient was highly allergic to *Aspergillus fumigatus* and *Alternaria alternata* molds. The patient was instructed on how to identify molds in his residence and at work and what steps to take to eliminate them. Patient was prescribed a natural supplement formula that increases his immune system response to molds and fungi. After 3 weeks, the patient was completely free of symptoms and has remained that way for the last 2 years.

CASE 2

Traditional Medical Approach:

The patient was a 27 year-old female with an 11 year history of irritable bowel syndrome and fatigue. Patient had previously consulted with four medical physicians before scheduling an appointment to a functional medicine clinician.

Medical testing included an upper and lower GI study and colonoscopy. All were negative for any pathologies. Treatment consisted of the prescription Hyoscyamine. Results were poor.

Functional Medical Approach:

Based upon the completion of an extensive functional medical questionnaire and review of all tests, personal and family medical history, and other pertinent records, the clinician ordered a Digestive Stool Test and Allergy Blood test. Two bacterial pathogens were found: *Pseudomonas aeruginosa* and *Citrobacter freundii*. The medical literature clearly linked these

two pathogens to her diarrhea and related complaints. Her allergy test revealed a significant sensitivity to gluten and rice. The patient was prescribed a natural supplement formula that helped eradicate the two bacterial pathogens and was placed on an elimination diet addressing the rice and gluten. After one month she was symptom-free.

CASE 3

Traditional Medical Approach:

The patient was a 61 year old female with chief complaints of menopausal symptoms which included hot flashes, decreased libido, and weight gain for a period of five years. Patient had previously consulted with only one medical physician before scheduling an appointment to a functional medical clinician. No medical tests had yet been ordered. Treatment consisted of the prescription Estrace. Results were fair, however, patient was concerned about the potential side effects.

Functional Medical Approach:

Patient was evaluated by a functional medicine clinician and it was decided, based on an extensive history and review of her medical records, to order a Women's Hormonal Panel. The results were quite revealing. Her estrogen/progesterone balance was significantly compromised resulting in too much estrogen and not enough progesterone. This imbalance was the main cause of the patient's "roll-coaster" emotional challenges. This information was presented to her physician and she was prescribed the proper balance of estrogen and progesterone. The patient eventually went to a compounding pharmacy and had a special formula of estrogen/progesterone made. She has been symptom-free and has been experiencing an increase in energy. In addition, she has lost 54 pounds in 8 months.

The Missed Diagnosis:

Some health professionals typically interpret symptoms as indicators of a specific illness and use diagnostic assessments to identify or confirm that condition. While perhaps validating a suspected disease process, this approach often fails to identify the real roots of the condition - especially in cases of chronic illness. Most treatments based upon this approach tend to be heavily dependent upon pharmaceutical drugs. Again, this approach does not address the underlying cause of the condition. Further, many drugs have toxic side effects and cover up symptoms, making additional attempts at diagnosis even less reliable.

The Evolution of Diagnostic Assessments

Modern medicine has given humanity hope in the fight for the extension of life and the prevention of disease. However, until recently there have been few available tools with which to evaluate basic human physiology.

Traditional diagnoses have focused on pathology rather than an examination of the underlying reasons for the development of a particular health problem. Today, specialized laboratories using advanced testing procedures offer functional diagnostic assessments that can evaluate an individual's physiology. By comparing the individual's assessments with normal physiological ranges, healthcare providers practicing functional diagnostic medicine can pinpoint

abnormalities and contributing factors to health problems, often exposing the real causes of chronic illness and degenerative disease.

Common Health Complaints

Functional Medicine practitioners are particularly good at addressing the needs of those suffering from incorrectly or partially diagnosed chronic health problems which, in many cases, have yet to manifest as a specific disease.

Promoting Wellness and Longevity

Many serious health conditions develop over years of undiagnosed and seemingly unrelated symptoms. Therefore, the detection and treatment of health issues at their point of earliest inception has consequences reaching far beyond the alleviation of symptoms.

Functional assessments can identify risk factors for a wide variety of health problems long before they become symptomatic, enabling individuals to take preventive measures to reduce their risk for cancer, cardiovascular disease and other degenerative conditions. The tests also provide important data for the development of scientifically based nutritional plans, immune-enhancing strategies and life-extension programs.

Dynamic Monitoring of Therapies

Functional diagnostic assessments provide the opportunity to monitor a wide array of therapies, including customized nutritional programs. Testing is used initially to establish an individual's baseline physiological processes and subsequently to closely monitor the results of therapies in order to make necessary adjustments in therapeutic protocols

Twenty-First Century Health Care

By identifying the underlying causes of chronic health conditions, reducing the risk of degenerative disease, and addressing an individual's unique bio-chemical composition, Functional Medicine has been considered the future of medicine.

(Adapted with permission from www.functionalmedicine.net)

GENOVA DIAGNOSTICS

Genova Diagnostics is a global leader in functional laboratory testing, pioneering innovative new approaches to personalized medicine.

Patients and clinicians focusing on wellness and prevention and taking an active role in managing health prefer diagnostic tests designed to help identify problems before chronic conditions and diseases develop. Unlike traditional labs that focus on disease pathology, Genova specializes in comprehensive panels that combine standard and innovative biomarkers to provide a more complete understanding of specific biological systems.

Facts & Figures:

Genova Diagnostics...

- is a fully accredited medical laboratory, certified in the areas of clinical chemistry, bacteriology, mycology, parasitology, virology, microbiology, non-syphilis serology, general immunology, hematology, toxicology, as well as molecular genetics by six separate health agencies including the Centers for Medicare & Medicaid Services which oversees clinical labs in the United States under the federal Clinical Laboratory Improvement Amendment (CLIA).
- serves more than 8,000 primary and specialty physicians and healthcare providers.
- offers more than 125 specialized diagnostic assessments, covering a wide range of physiological areas including nutritional, digestive, immunology, metabolic function and endocrinology.
- Was established in 1986 as Great Smokies Diagnostic Lab before changing its name to Genova Diagnostics in 2003.

Digestive Function Analysis

This test analyzes stool for digestive ability, absorption, pH, and bacterial metabolism, as reflected by short chain fatty acids.

Comprehensive Digestive Stool Analysis 2.0 no Parasitology

This test evaluates digestion, absorption, gut flora, and the colonic environment, and is indicated for all chronic GI problems, for acute bowel pattern changes, and for many systemic diseases. Additionally, Genova offers a parasitology component with the CDSA 2.0 that evaluates for parasites using microscopic examination and EIA testing. The profile is indicated for all chronic GI problems, for acute bowel pattern changes, and for many systemic diseases and provides a sensitivity panel for treating pathogenic flora.

Intestinal Permeability Assessment

This test analyzes urine for the clearance of two non-metabolized sugars, lactulose and mannitol. It identifies a “leaky gut” and malabsorption. For more information about “leaky gut”, please see the PDF in this section of the website.

METATMETRIX CLINICAL LABORATORY

Metamatrix Clinical Laboratory, has been a fully licensed clinical laboratory for over 20 years. They are required by state and federal laws to undergo rigorous annual inspections by regulating agencies to ensure quality and accuracy of the test results they report. There are established procedures for ensuring quality control that each lab must follow to retain licensure and lab data is reviewed by licensing inspectors annually to verify acceptable performance. Metamatrix is regularly inspected by the Department of Health and Human Services for CLIA (Clinical Laboratory Improvement Amendments) licensure and by the Georgia Department of Human Resources for its Clinical Laboratory License.

Nutrient and Toxic Element Profile

Elements are the small but essential nutrients for proper functioning of the body. You could hold the total amount of the mineral zinc present in your body on the tip of your finger, but without it your cells could not divide and grow, and your organs would stop working in minutes. Every function of your body, from digestion to nerve impulse conduction and brain function, is critically dependent on the presence of about two dozen different elements. Your tissues cannot produce these elements, so they must be supplied regularly in your diet. Many factors, however, make it difficult for us to get adequate amounts of elements. Modern food production depletes elements from foods and our lifestyles do not always make it convenient for us to eat the right balance of foods. Additionally, inadequate digestion and absorption of these nutrients can lead to subtle yet significant deficiencies that can cause serious health problems.

Some elements can accumulate in tissues causing toxic effects. Metal toxicity is a significant environmental health concern. A toxic load of lead, cadmium, mercury, aluminum, or arsenic is capable of rendering considerable damage to the brain and nervous system, particularly in children. Toxic elements produce their many negative effects through various mechanisms. The cancer-inducing effect of arsenic seems to be due to an inhibition of DNA repair. Genotoxicity, in which chromosomes are damaged, is linked to the free radical generation abilities of cadmium, lead and nickel.

Conditions and symptoms related to abnormal element levels in urine:

- Chronic pain in muscles
- Fatigue
- Brain fog (state of forgetfulness and confusion)
- Chronic infections such as *candida*
- Gastrointestinal problems
- Food allergies
- Dizziness
- Migraines/headaches
- Visual disturbances
- Depression
- Anxiety
- Nervous system sensitivities

Why use a urine element test?

Urine element testing is primarily useful to monitor levels of toxic metals such as **aluminum, arsenic, cadmium, lead, and mercury** and special mineral uptake testing.

Comprehensive OrganiX Profile

Organic acids are metabolic intermediates produced in pathways of central energy production, detoxification, neurotransmitter breakdown, and intestinal microbial activity. Accumulation of specific organic acids in urine often signals a metabolic inhibition or block. This abnormality may be due to a nutrient deficiency, an inherited enzyme deficit, toxic build-up, or drug effect. Testing

for organic acids helps reveal activity and changes at the metabolic level, helping practitioners discover hidden issues and pinpoint where therapeutic focus is needed.

The Organix Profile provides important information in the areas of:

Vitamin and mineral insufficiencies

Amino acid insufficiencies like carnitine and N-acetyl cysteine (NAC)

Oxidative damage and antioxidant sufficiency markers

Indicators to assess detoxification sufficiency

The best functional markers of B-complex deficiency

Neurotransmitter metabolites to assess central nervous system (CNS) function

Mitochondrial energy production assessment via citric acid cycle components

Methylation sufficiency status

Lipoic acid and CoQ10 sufficiency markers

Specific dysbiosis markers for bacterial and yeast overgrowth

NEUROSCIENCE NEUROTRANSMITTER AND STRESS PROFILES

Please see the PDF entitled Neuroscience found in this same section of the website to learn more about neurotransmitter and stress profiles. These are useful to help develop treatment protocols for anxiety, depression, panic attacks, ADD, ADHD, sleep problems, all conditions that might have stress components, fatigue, brain-fog, mental confusion, emotional trauma, and chronic pain.