

# *Your Ultimate Guide to Functional Medicine Testing*

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## *TRADITIONAL LABORATORY TESTS*

THESE TESTS CAN BE INTERPRETED THROUGH THE FUNCTIONAL MEDICINE OPTIMAL LENS VERSUS THE NORMAL LENS.

### COMPLETE BLOOD COUNT (CBC)

Blood test that checks:

- White blood cells (WBC)
- Different types of WBC
- Platelets
- Red blood cells (RBC)
- Markers for sizes of RBCs

### HEMOGLOBIN A1c (HbA1c)

Blood test that shows a 3-month marker of blood sugar management.

### COMPREHENSIVE METABOLIC PROFILE (CMP)

Blood test that checks:

- Glucose (blood sugar)
- Liver function
- Kidney function
- Electrolytes

### FASTING INSULIN

A marker for insulin sensitivity which is important for blood sugar control.



## LIPID PANEL

Blood test that checks:

- Triglycerides
- Low-density lipoprotein (LDL) cholesterol
- High-density lipoprotein (HDL) cholesterol
- Very-low-density lipoprotein (VLDL)

There are a lot of advanced lipid marker options as well.

## NUTRIENTS

Blood test that checks:

- Vitamin D (both 25-OH and 1,25 OH)
- Vitamin A
- B Vitamins: B1, B2, B3, B5, B6, folate (B9), and B12
- Red blood cells (RBC) magnesium
- Zinc, copper, ceruloplasmin, selenium, and iron panel

## HOMOCYSTEINE

Blood test that's a marker for methylation and vascular disease risk.

## HIGH SENSITIVITY C-REACTIVE PROTEIN (CRP) AND/OR ERYTHROCYTE SEDIMENTATION RATE (ESR)

CRP is a blood test to check for inflammation. If you suspect you may have an autoimmune disease like lupus or rheumatoid arthritis, you can also do an ESR.

## HORMONES

Adrenal: Blood test to check DHEA-S and AM Cortisol

Thyroid: Blood test to check TSH, free T3, free T4, total T3, and reverse T3

Sex Hormones: Blood tests to determine hormone levels based on gender

- Female - LH, FSH, progesterone, estradiol, free testosterone, total testosterone, and sex hormone-binding globulin
- Male - free testosterone, total testosterone, dihydrotestosterone, sex hormone-binding globulin, estrone, and prostate-specific antigen (PSA) if over age 40

## ANTIBODY MARKERS

- Thyroid peroxidase antibodies (TPO)
- Thyroglobulin
- Thyroid-stimulating immunoglobulins
- Celiac panel
- Rheumatoid factor
- Anti-cyclic citrullinated peptide (anti-CCP)
- Anti-nuclear antibody (ANA) – This screens for lupus, Sjogren's, scleroderma, and mixed connective tissue disease.

## IgE FOOD ALLERGIES

Blood test to measure the presence of immunoglobulin E (IgE) antibodies. These antibodies trigger symptoms of food allergies.

## IgE ENVIRONMENTAL ALLERGIES

Blood test to measure the presence of immunoglobulin E antibodies. This checks for your specific environmental allergens.

## INFECTIONS

Blood test to check for both acute and chronic infections such as:

- Epstein Barr virus panel
- Lyme screening panel
- MANY other infections (bacterial, fungal, and yeast) can be present as well and tested specifically based on symptoms.

## OTHER IMMUNE SYSTEM MARKERS

Blood tests to check for:

- Immunoglobulin levels (IgE, IgG, IgA, and IgM), C3a, and C4a
  - These can be abnormal in autoimmune disease, certain infections like Lyme, and certain toxic exposures like mold.
- Additional immune markers interleukins (IL), natural killer cells (NK), tumor necrosis factor alpha (TNF-a), and flow cytometry may be ordered when indicated.



## COMPREHENSIVE URINALYSIS

Screens the urine for:

- Blood
- Glucose
- Protein
- Urinary tract infection

## BASIC STOOL STUDIES

Screens the stool for:

- Ova and parasites
- Culture for infection
- Calprotectin and fecal fats (to help look for inflammation related to inflammatory bowel diseases like Crohn's disease and ulcerative colitis)

## ADDITIONAL TESTING

Can screen urine or blood for exposure to heavy metals such as:

- Mercury
- Lead
- Arsenic
- Cadmium

*All of the traditional laboratory tests from pages 1-4 can be ordered via conventional labs like LabCorp and Quest.*



# ADVANCED FUNCTIONAL MEDICINE TESTS

## HORMONES

Dried Urine Testing for Comprehensive Hormones (DUTCH)

- This looks at adrenal and male and female sex hormone metabolites, as well as several other markers.



## TOXINS

- Environmental Toxins test for water-soluble environmental toxins which have a half-life of about three hours to three days. These include:
  - Pesticides, perchlorates, benzenes, styrenes, MTBE/ETBE, acrylamides, exposure to things like plastics, foams, resins, fumes, etc.
- Environmental Toxins test for glyphosate, fat-soluble, and some water-soluble analytes which includes things such as:
  - BPA, parabens, phthalates, PCSs, atrazine, etc.
- Mycotoxin test (to look for mold toxins)
- Provoked heavy metals (shows total body burden of metals)

## IMMUNE SYSTEM

Multiple arrays by Cyrex that include:

- Arrays 3, 4, and 10 to look at IgA and IgG food sensitivities
- Array 5 – Multiple Autoimmune Reactivity Screen
- Array 8 – Joint Autoimmune Reactivity Screen
- Array 11 – Chemical Immune Reactivity Screen
- Array 12 – Pathogen-Associated Immune Reactivity Screen



## GUT

- Comprehensive Stool Analysis detects infections as well as gives data on inflammation, digestion markers, and microbiome assessment
- Small Intestinal Bacterial Overgrowth (SIBO) 3-hour lactulose breath test
- Organic acids test (OAT) to look for yeast, clostridia, bacteria, and oxalate markers
- IBS Smart – looks at antibodies to tell if IBS/SIBO is from previous a food poisoning

## NEUROLOGICAL SYSTEM

- Organic Acids Test to check neurotransmitter metabolites, mitochondrial function, and amino acids
- Cyrex Alzheimer's LINX – Alzheimer's-Associated Immune Reactivity
- CYREX Array 7x – Neurological Autoimmune Reactivity Screen
- Cyrex Array 20 – Blood-Brain Barrier Permeability

## MINERALS

Hair tissue mineral analysis (HTMA) looks at minerals and toxins in hair. This is the closest to looking at our tissue stores.

## MICRONUTRIENTS

Micronutrient test looks at more of a six-month picture of nutrient status.

## GENOMICS

Looks at the carrier status of genes and single-nucleotide polymorphisms (SNPs) to help evaluate methylation, detoxification, cognition, inflammation, anti-aging, endocrine, structural, energy metabolism, estrogen metabolism, androgen metabolism, and cardiometabolic risk.

*I have used the following laboratories to order the Advanced Functional Medicine tests from pages 5-6: Genova, Doctor's Data, Diagnostic Solutions, Great Plains, Precision Analytical, Cyrex, Trace Minerals, SpectraCell, BioHealth, US BioTek, and Nutrigenomic Analysis.*

This list is by far not comprehensive, but it's a great start to get you thinking about what tests you might want to talk to your functional medicine practitioner about ordering for you. You can check out the Institute for Functional Medicine's website at IFM.org to find a certified functional medicine practitioner near you if you aren't already working with one.

If you live locally here in Arizona and you'd like to have Dr. Emily Parke or another one of our certified practitioners at Arizona Wellness Medicine help you, [click here](#) to fill out our contact form. Our friendly staff will help you schedule an appointment and answer any questions you may have. During your visit, we'll work together to develop a personalized plan that's unique to you and your specific needs to treat the root causes of your symptoms and disease.

