

Functional Medicine – What is it?

Our body's genes are designed to protect us and to adapt to its current environment. Think of a gene like a light switch – it can be turned on or off. This light switch is typically controlled by our environment. When a person's environment has been unhealthy for a particular amount of time, the body shifts gene expression which causes an adaptation. This adaptation is what typically gets called a "disease". If we can alter the environment, we can alter gene expression and correct the adaptation.

Example – type II diabetes – the environment for these folks typically consisted of a sedentary life style and excess carbohydrate intake. The body adapts by increasing the production of insulin. Over time, the increased production of insulin negatively affects the body and insulin starts to lose its effectiveness at lower blood sugar (insulin resistance). As this process continues, diabetes is the result. But it's the adaptation to the environment – sedentary lifestyle and too much carbohydrate – that caused the problem. (and is the solution to correcting the problem)

For a Functional Medicine case, this is what needs to be evaluated:

- Vitamin/mineral deficiencies
- Infectious pathogens
- Gluten sensitivity
- Food/chemical allergies
- Heavy metals
- Gut integrity – leaky gut
- Physical issues
- Emotional issues

The process starts with an extensive blood panel – this helps to narrow down which categories require further exploration.

Example – functional medicine looks at a blood panel using a different set of lab values than the "standard reference range". This helps to show how the body's chemistry is working. An increase/decrease in the "functional ranges" can help to narrow down which of the above categories are the biggest players. A total white blood cell count above or below the functional ranges could suggest some type of infection.

Advanced lab testing may then be beneficial to gather more information.

Example – a standard panel can suggest things like digestive dysfunction, but won't give specific information on gut integrity. A comprehensive digestive stool analysis would provide much more detailed information.

Need to get the full picture to increase chances of success.

Example – if we prescribe vitamins for a deficiency, but the gut is compromised, the person won't be able to absorb the vitamin to correct the deficiency.

Once we have all the information, treatment is specific to each individual and involves diet and lifestyle modifications as well as supplements that may be helpful to correct the adaptations.

Medication History*

Please check any of the following medications you have taken in the past or are currently taking.

Noradrenergic and Specific Serotonergic Antidepressants (NaSSAs)

- Remeron®
- Zispin®
- Avanza®
- Norset®
- Remergil®
- Axit®

Tricyclic Antidepressants (TCAs)

- Elavil®
- Endep®
- Tryptanol®
- Trepiline®
- Asendin®
- Asendis®
- Defanyl®
- Demolox®
- Moxadil®
- Anafranil®
- Norpramin®
- Pertofrane®
- Thaden™
- Prothiaden®
- Adapin®
- Sinequan®
- Tofranil®
- Janamine®
- Gamamil®
- Aventyl®
- Pamelor®
- Opipramol®
- Vivaactil®
- Rhotrimine®
- Surmontil®
- Norpramin®

Selective Serotonin Reuptake Inhibitors (SSRIs)

- Paxil®
- Zoloft®
- Prozac®
- Celexa®
- Lexapro®
- Esertia®
- Luvox®
- Cipramil®
- Emocal®
- Seropram®
- Cipralax®
- Fontex®
- Priligy®
- Seromex®
- Seronil®
- Sarafem®
- Fluctin®
- Faverin®
- Seroxat®
- Aropax®
- Deroxat®
- Rexetin®
- Paroxat®
- Lustral®
- Serlain®

Serotonin-Norepinephrine Reuptake Inhibitors (SNRIs)

- Effexor®
- Pristiq®
- Meridia®
- Serzone®
- Dalcipran®
- Cymbalta®

Selective Serotonin Reuptake Enhancers (SSREs)

- Stablon®
- Coaxil®
- Tatinol®

Monoamine Oxidase Inhibitors (MAOIs)

- Marplan®
- Aurorix®
- Manerix®
- Moclodura®
- Nardil®
- Adeline®
- Eldepryl®
- Azilect®
- Marsilid®
- Iprozid®
- Ipronid®
- Rivivol®
- Propilniazida®
- Zyvox®
- Zyvoxid®

Dopamine Receptor Agonists

- Mirapex®
- Sifrol®
- Requip®

Norepinephrine-Dopamine Reuptake Inhibitors (NDRIs)

- Wellbutrin XL®

D2 Dopamine Receptor Blockers (antipsychotics)

- Thorazine®
- Prolixin®
- Trilafon®
- Compazine®
- Mellaril®
- Stelazine®
- Vesprin®
- Nozinan®
- Depixol®
- Navane®
- Fluanxol®
- Clopixol®
- Acuphase®
- Haldol®
- Orap®
- Clozaril®
- Zyprexa®
- Zydis®
- Seroquel XR®
- Geodon®
- Solian®
- Invega®
- Abilify®

GABA Antagonist Competitive Binder

- Romazicon®

Agonist Modulators of GABA Receptors (benzodiazepines)

- Xanax®
- Lexotanil®
- Lexotan®
- Librium®
- Klonopin®
- Valium®
- Prosom®
- Rohypnol®
- Magadon®
- Dalmane®
- Ativan®
- Loramet®
- Sedoxil®
- Dormicum®
- Serax®
- Restoril®
- Halcion®

Agonist Modulators of GABA Receptors (non-benzodiazepines)

- Ambien CR®
- Sonata®
- Lunesta®
- Imovane®

Acetylcholine Receptor Agonists

- Urecholine®
- Evoxac®
- Salagen®
- Isopto®
- Nicotone®

Acetylcholine Receptor Antagonists (antimuscarinic agents)

- AtroPen®
- Scopace®
- Atrovent®
- Spiriva®

Acetylcholine Receptor Antagonists (ganglionic blockers)

- Inversine®
- Nicotine (high doses)
- Hexamethonium
- Arfonad®

Acetylcholine Receptor Antagonists (neuromuscular blockers)

- Tracrium®
- Nimbex®
- Nuromax®
- Metubine®
- Mivacron®
- Pavulon®
- Zemuron®
- Anectine®
- Tubocurarine®
- Norcuron®
- Hemicholinium-3®

Acetylcholinesterase Reactivators

- Protopam®

Cholinesterase Inhibitors (reversible)

- Aricept®
- Exelon®
- Cognex®
- THC
- Carbamate insecticides
- Enlon®
- Prostigmin®
- Antilirium®
- Mestinon®

Cholinesterase Inhibitors (irreversible)

- Echothiophate
- Isoflurophate
- Organophosphate insecticides
- Organophosphate-containing nerve agents

*Please refer to prescribing physician for nutritional interactions with any medications you are taking.

Brain Health and Nutrition Assessment Form™ (BHNAF)

Name: _____ Age: _____ Sex: _____ Date: _____

Please circle the appropriate number on all questions below. 0 as the least/never to 3 as the most/always.

SECTION 1

- Low brain endurance for focus and concentration 0 1 2 3
- Cold hands and feet 0 1 2 3
- Must exercise or drink coffee to improve brain function 0 1 2 3
- Poor nail health 0 1 2 3
- Fungal growth on toenails 0 1 2 3
- Must wear socks at night 0 1 2 3
- Nail beds are white instead of pink 0 1 2 3
- The tip of the nose is cold 0 1 2 3

SECTION 2

- Irritable, nervous, shaky, or light-headed between meals 0 1 2 3
- Feel energized after meals 0 1 2 3
- Difficulty eating large meals in the morning 0 1 2 3
- Energy level drops in the afternoon 0 1 2 3
- Crave sugar and sweets in the afternoon 0 1 2 3
- Wake up in the middle of the night 0 1 2 3
- Difficulty concentrating before eating 0 1 2 3
- Depend on coffee to keep going 0 1 2 3

SECTION 3

- Fatigue after meals 0 1 2 3
- Sugar and sweet cravings after meals 0 1 2 3
- Need for a stimulant, such as coffee, after meals 0 1 2 3
- Difficulty losing weight 0 1 2 3
- Increased frequency of urination 0 1 2 3
- Difficulty falling asleep 0 1 2 3
- Increased appetite 0 1 2 3

SECTION 4

- Always have projects and things that need to be done 0 1 2 3
- Never have time for yourself 0 1 2 3
- Not getting enough sleep or rest 0 1 2 3
- Difficulty getting regular exercise 0 1 2 3
- Feel that you are not accomplishing your life's purpose 0 1 2 3

SECTION 5

- Dry and unhealthy skin 0 1 2 3
- Dandruff or a flaky scalp 0 1 2 3
- Consumption of processed foods that are bagged or boxed 0 1 2 3
- Consumption of fried foods 0 1 2 3
- Difficulty consuming raw nuts or seeds 0 1 2 3
- Difficulty consuming fish (not fried) 0 1 2 3
- Difficulty consuming olive oil, avocados, flax seed oil, or natural fats 0 1 2 3

SECTION 6

- Difficulty digesting foods 0 1 2 3
- Constipation or inconsistent bowel movements 0 1 2 3
- Increased bloating or gas 0 1 2 3
- Abdominal distention after meals 0 1 2 3
- Difficulty digesting protein-rich foods 0 1 2 3
- Difficulty digesting starch-rich foods 0 1 2 3
- Difficulty digesting fatty or greasy foods 0 1 2 3
- Difficulty swallowing supplements or large bites of food 0 1 2 3
- Abnormal gag reflex Yes or No

SECTION 7

- Brain fog (unclear thoughts or concentration) Yes or No
- Pain and inflammation Yes or No
- Noticeable variations in mental speed Yes or No
- Brain fatigue after meals 0 1 2 3
- Brain fatigue after exposure to chemicals, scents, or pollutants 0 1 2 3
- Brain fatigue when the body is inflamed 0 1 2 3

SECTION 8

- Grain consumption leads to tiredness 0 1 2 3
- Grain consumption makes it difficult to focus and concentrate 0 1 2 3
- Feel better when bread and grains are avoided 0 1 2 3
- Grain consumption causes the development of any symptoms 0 1 2 3
- A 100% gluten-free diet Yes or No

Brain Health and Nutrition Assessment Form™ (BHNAF)

Please circle the appropriate number on all questions below. 0 as the least/never to 3 as the most/always.

SECTION 9

- A diagnosis of celiac disease, gluten sensitivity, hypothyroidism, or an autoimmune disease **Yes or No**
- Family members who have been diagnosed with an autoimmune disease **Yes or No**
- Family members who have been diagnosed with celiac disease or gluten sensitivity **Yes or No**
- Changes in brain function with stress, poor sleep, or immune activation **0 1 2 3**

SECTION 10

- A loss of pleasure in hobbies and interests **0 1 2 3**
- Feel overwhelmed with ideas to manage **0 1 2 3**
- Feelings of inner rage or unprovoked anger **0 1 2 3**
- Feelings of paranoia **0 1 2 3**
- Feelings of sadness for no reason **0 1 2 3**
- A loss of enjoyment in life **0 1 2 3**
- A lack of artistic appreciation **Yes or No**
- Feelings of sadness in overcast weather **0 1 2 3**
- A loss of enthusiasm for favorite activities **0 1 2 3**
- A loss of enjoyment in favorite foods **0 1 2 3**
- A loss of enjoyment in friendships and relationships **0 1 2 3**
- Inability to fall into deep, restful sleep **0 1 2 3**
- Feelings of dependency on others **0 1 2 3**
- Feelings of susceptibility to pain **0 1 2 3**

SECTION 11

- Feelings of worthlessness **0 1 2 3**
- Feelings of hopelessness **0 1 2 3**
- Self-destructive thoughts **0 1 2 3**
- Inability to handle stress **0 1 2 3**
- Anger and aggression while under stress **0 1 2 3**
- Feelings of tiredness, even after many hours of sleep **0 1 2 3**
- A desire to isolate yourself from others **0 1 2 3**
- An unexplained lack of concern for family and friends **0 1 2 3**
- An inability to finish tasks **0 1 2 3**
- Feelings of anger for minor reasons **0 1 2 3**

SECTION 12

- A decrease in visual memory (shapes and images) **Yes or No**
- A decrease in verbal memory **0 1 2 3**
- Occurrence of memory lapses **0 1 2 3**
- A decrease in creativity **0 1 2 3**
- A decrease in comprehension **0 1 2 3**
- Difficulty calculating numbers **0 1 2 3**
- Difficulty recognizing objects and faces **0 1 2 3**
- A change in opinion about yourself **0 1 2 3**
- Slow mental recall **0 1 2 3**

SECTION 13

- A decrease in mental alertness **0 1 2 3**
- A decrease in mental speed **0 1 2 3**
- A decrease in concentration quality **0 1 2 3**
- Slow cognitive processing **0 1 2 3**
- Impaired mental performance **0 1 2 3**
- An increase in the ability to be distracted **0 1 2 3**
- Need coffee or caffeine sources to improve mental function **0 1 2 3**

SECTION 14

- Feelings of nervousness or panic for no reason **0 1 2 3**
- Feelings of dread **0 1 2 3**
- Feelings of a "knot" in your stomach **0 1 2 3**
- Feelings of being overwhelmed for no reason **0 1 2 3**
- Feelings of guilt about everyday decisions **0 1 2 3**
- A restless mind **0 1 2 3**
- An inability to turn off the mind when relaxing **0 1 2 3**
- Disorganized attention **0 1 2 3**
- Worry over things never thought about before **0 1 2 3**
- Feelings of inner tension and inner excitability **0 1 2 3**

Metabolic Assessment Form™

Name: _____ Age: _____ Sex: _____ Date: _____

PART I

Please list your 5 major health concerns in order of importance:

1. _____
2. _____
3. _____
4. _____
5. _____

PART II

Please circle the appropriate number on all questions below. 0 as the least/never to 3 as the most/always.

Category I

Feeling that bowels do not empty completely	0	1	2	3
Lower abdominal pain relieved by passing stool or gas	0	1	2	3
Alternating constipation and diarrhea	0	1	2	3
Diarrhea	0	1	2	3
Constipation	0	1	2	3
Hard, dry, or small stool	0	1	2	3
Coated tongue or "fuzzy" debris on tongue	0	1	2	3
Pass large amount of foul-smelling gas	0	1	2	3
More than 3 bowel movements daily	0	1	2	3
Use laxatives frequently	0	1	2	3

Category II

Increasing frequency of food reactions	0	1	2	3
Unpredictable food reactions	0	1	2	3
Aches, pains, and swelling throughout the body	0	1	2	3
Unpredictable abdominal swelling	0	1	2	3
Frequent bloating and distention after eating	0	1	2	3

Category III

Intolerance to smells	0	1	2	3
Intolerance to jewelry	0	1	2	3
Intolerance to shampoo, lotion, detergents, etc	0	1	2	3
Multiple smell and chemical sensitivities	0	1	2	3
Constant skin outbreaks	0	1	2	3

Category IV

Excessive belching, burping, or bloating	0	1	2	3
Gas immediately following a meal	0	1	2	3
Offensive breath	0	1	2	3
Difficult bowel movements	0	1	2	3
Sense of fullness during and after meals	0	1	2	3
Difficulty digesting proteins and meats; undigested food found in stools	0	1	2	3

Category V

Stomach pain, burning, or aching 1-4 hours after eating	0	1	2	3
Use of antacids	0	1	2	3
Feel hungry an hour or two after eating	0	1	2	3
Heartburn when lying down or bending forward	0	1	2	3
Temporary relief by using antacids, food, milk, or carbonated beverages	0	1	2	3
Digestive problems subside with rest and relaxation	0	1	2	3
Heartburn due to spicy foods, chocolate, citrus, peppers, alcohol, and caffeine	0	1	2	3

Category VI

Difficulty digesting roughage and fiber	0	1	2	3
Indigestion and fullness last 2-4 hours after eating	0	1	2	3
Pain, tenderness, soreness on left side under rib cage	0	1	2	3
Excessive passage of gas	0	1	2	3
Nausea and/or vomiting	0	1	2	3
Stool undigested, foul smelling, mucus like, greasy, or poorly formed	0	1	2	3
Frequent loss of appetite	0	1	2	3

Category VII

Abdominal distention after consumption of fiber, starches, and sugar	0	1	2	3
Abdominal distention after certain probiotic or natural supplements	0	1	2	3
Decreased gastrointestinal motility, constipation	0	1	2	3
Increased gastrointestinal motility, diarrhea	0	1	2	3
Alternating constipation and diarrhea	0	1	2	3
Suspicion of nutritional malabsorption	0	1	2	3
Frequent use of antacid medication	0	1	2	3
Have you been diagnosed with Celiac Disease, Irritable Bowel Syndrome, Diverticulosis/ Diverticulitis, or Leaky Gut Syndrome?	Yes	No		

Category VIII

Greasy or high-fat foods cause distress	0	1	2	3
Lower bowel gas and/or bloating several hours after eating	0	1	2	3
Bitter metallic taste in mouth, especially in the morning	0	1	2	3
Burpy, fishy taste after consuming fish oils	0	1	2	3
Unexplained itchy skin	0	1	2	3
Yellowish cast to eyes	0	1	2	3
Stool color alternates from clay colored to normal brown	0	1	2	3
Reddened skin, especially palms	0	1	2	3
Dry or flaky skin and/or hair	0	1	2	3
History of gallbladder attacks or stones	0	1	2	3
Have you had your gallbladder removed?	Yes	No		

Category IX

Acne and unhealthy skin	0	1	2	3
Excessive hair loss	0	1	2	3
Overall sense of bloating	0	1	2	3
Bodily swelling for no reason	0	1	2	3
Hormone imbalances	0	1	2	3
Weight gain	0	1	2	3
Poor bowel function	0	1	2	3
Excessively foul-smelling sweat	0	1	2	3

Category X

Crave sweets during the day	0	1	2	3
Irritable if meals are missed	0	1	2	3
Depend on coffee to keep going/get started	0	1	2	3
Get light-headed if meals are missed	0	1	2	3
Eating relieves fatigue	0	1	2	3
Feel shaky, jittery, or have tremors	0	1	2	3
Agitated, easily upset, nervous	0	1	2	3
Poor memory, forgetful between meals	0	1	2	3
Blurred vision	0	1	2	3

Category XI

Fatigue after meals	0	1	2	3
Crave sweets during the day	0	1	2	3
Eating sweets does not relieve cravings for sugar	0	1	2	3
Must have sweets after meals	0	1	2	3
Waist girth is equal or larger than hip girth	0	1	2	3
Frequent urination	0	1	2	3
Increased thirst and appetite	0	1	2	3
Difficulty losing weight	0	1	2	3

Category XII				
Cannot stay asleep	0	1	2	3
Crave salt	0	1	2	3
Slow starter in the morning	0	1	2	3
Afternoon fatigue	0	1	2	3
Dizziness when standing up quickly	0	1	2	3
Afternoon headaches	0	1	2	3
Headaches with exertion or stress	0	1	2	3
Weak nails	0	1	2	3
Category XIII				
Cannot fall asleep	0	1	2	3
Perspire easily	0	1	2	3
Under a high amount of stress	0	1	2	3
Weight gain when under stress	0	1	2	3
Wake up tired even after 6 or more hours of sleep	0	1	2	3
Excessive perspiration or perspiration with little or no activity	0	1	2	3
Category XIV				
Edema and swelling in ankles and wrists	0	1	2	3
Muscle cramping	0	1	2	3
Poor muscle endurance	0	1	2	3
Frequent urination	0	1	2	3
Frequent thirst	0	1	2	3
Crave salt	0	1	2	3
Abnormal sweating from minimal activity	0	1	2	3
Alteration in bowel regularity	0	1	2	3
Inability to hold breath for long periods	0	1	2	3
Shallow, rapid breathing	0	1	2	3
Category XV				
Tired/sluggish	0	1	2	3
Feel cold—hands, feet, all over	0	1	2	3
Require excessive amounts of sleep to function properly	0	1	2	3
Increase in weight even with low-calorie diet	0	1	2	3
Gain weight easily	0	1	2	3
Difficult, infrequent bowel movements	0	1	2	3
Depression/lack of motivation	0	1	2	3
Morning headaches that wear off as the day progresses	0	1	2	3
Outer third of eyebrow thins	0	1	2	3
Thinning of hair on scalp, face, or genitals, or excessive hair loss	0	1	2	3
Dryness of skin and/or scalp	0	1	2	3
Mental sluggishness	0	1	2	3
Category XVI				
Heart palpitations	0	1	2	3
Inward trembling	0	1	2	3
Increased pulse even at rest	0	1	2	3
Nervous and emotional	0	1	2	3
Insomnia	0	1	2	3

Category XVI (Cont.)				
Night sweats	0	1	2	3
Difficulty gaining weight	0	1	2	3
Category XVII (Males Only)				
Urination difficulty or dribbling	0	1	2	3
Frequent urination	0	1	2	3
Pain inside of legs or heels	0	1	2	3
Feeling of incomplete bowel emptying	0	1	2	3
Leg twitching at night	0	1	2	3
Category XVIII (Males Only)				
Decreased libido	0	1	2	3
Decreased number of spontaneous morning erections	0	1	2	3
Decreased fullness of erections	0	1	2	3
Difficulty maintaining morning erections	0	1	2	3
Spells of mental fatigue	0	1	2	3
Inability to concentrate	0	1	2	3
Episodes of depression	0	1	2	3
Muscle soreness	0	1	2	3
Decreased physical stamina	0	1	2	3
Unexplained weight gain	0	1	2	3
Increase in fat distribution around chest and hips	0	1	2	3
Sweating attacks	0	1	2	3
More emotional than in the past	0	1	2	3
Category XIX (Menstruating Females Only)				
Perimenopausal		Yes	No	
Alternating menstrual cycle lengths		Yes	No	
Extended menstrual cycle (greater than 32 days)		Yes	No	
Shortened menstrual cycle (less than 24 days)		Yes	No	
Pain and cramping during periods	0	1	2	3
Scanty blood flow	0	1	2	3
Heavy blood flow	0	1	2	3
Breast pain and swelling during menses	0	1	2	3
Pelvic pain during menses	0	1	2	3
Irritable and depressed during menses	0	1	2	3
Acne	0	1	2	3
Facial hair growth	0	1	2	3
Hair loss/thinning	0	1	2	3
Category XX (Menopausal Females Only)				
How many years have you been menopausal?				years
Since menopause, do you ever have uterine bleeding?		Yes	No	
Hot flashes	0	1	2	3
Mental fogginess	0	1	2	3
Disinterest in sex	0	1	2	3
Mood swings	0	1	2	3
Depression	0	1	2	3
Painful intercourse	0	1	2	3
Shrinking breasts	0	1	2	3
Facial hair growth	0	1	2	3
Acne	0	1	2	3
Increased vaginal pain, dryness, or itching	0	1	2	3

PART III

How many alcoholic beverages do you consume per week? _____

How many caffeinated beverages do you consume per day? _____

How many times do you eat out per week? _____

How many times do you eat raw nuts or seeds per week? _____

List the three worst foods you eat during the average week: _____

List the three healthiest foods you eat during the average week: _____

Rate your stress level on a scale of 1-10 during the average week: _____

How many times do you eat fish per week? _____

How many times do you work out per week? _____

PART IV

Please list any medications you currently take and for what conditions:

Please list any natural supplements you currently take and for what conditions:

Mars Hill Chiropractic Center
342 Carl Eller Road
Mars Hill, NC 28754
Phone: 828-689-3777
Fax: 828-689-5435

Dear Health Care Provider,

Thank you for taking the time to consider running some blood work for this patient. Here is a list of the analytes that would be useful in assessing the patient's overall health:

- CBC with differential
- CMP
- Lipid Panel
- Thyroid Panel – TSH, total T3/T4, free T3/T4, thyroid antibodies, reverse T3
- Full iron panel
- HS-Crp/Cardiac CRP
- Homocysteine
- Vitamin D
- HGB A1c

Please contact me @ 828-689-3777 or driasonleonard@hotmail.com if there are any questions.

Sincerely,



Jason J. Leonard DC, CFMP

Mars Hill Chiropractic Center