

# Top 10 Functional Medicine Home Runs (not really 10 but it sounds good)

Or

“Things that help you treat nearly every person who walks in your office”

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**Disclaimer:** This is based on my practice and personal experience and should be applied at your own risk. Your patients may get better, and it may change your thinking forever about medicine. And it may turn your world upside down. This does not reflect the views of IFM or the faculty as a whole.

**Diagnosing the Matrix:** See Matrix Quizzes for Patients for help in diagnosing imbalances.

Get the Metamatrix Case Study Book

## Creating Balance in the Matrix

### Optimize Nutrition

- Focus on the **nutrigenomic index:** Whole, real, fresh, low glycemic load foods, as part of a plant based, high fiber, phytonutrient rich diet.
- Identify the most prevalent, under diagnosed, and clinically relevant nutritional deficiencies:
  - Omega-3 fats (EPA/DHA 1-4 grams a day)
  - Vitamin D3 (2000 to 5000 U day)
  - Impaired methylation (B6 25-50 mg, MeB12 1000-5000 mcg, and folate 5-methylfolate 1-2 mg)
  - Magnesium (citrate or glycinate 200-400 mg bid)
  - Zinc citrate (20-60 mg a day)
- Focus on instituting an appropriate aerobic exercise program.

### Treat Magnesium Deficiency

- Anything that cramps or spasms or twitches is Mg deficiency.
- For people with sluggish bowels use Mg citrate – titrate to 1-2 easy BM a day – dose may vary from 150 mg to 2000 mg or more if depleted; watch for loose bowels then reduce dose.
- Check RBC Mg on Quest/Labcorp – if low, the patient is in big deficit but a mild won't show up.

## **Treat Vitamin D Deficiency**

- Check 25 OH vitamin D (80% are insufficient, which is less than 45 ng/dl).
- Ideal level is 50-100 ng/dl.
- If autoimmune or infection, check 1,25 OH vitamin D (will be high with inflammation).
- If low, think absorption issues– malabsorption also comes with many other nutrient deficiencies.
- Use high dose, long term 5000 U vitamin D3 if < 30 ng/dl, 2 a day for 2 months, then recheck level every 6 months.

## **Methylation and Sulfation (Thiol) Chemistry**

Learn how to diagnose methylation and sulfation problems (thiol chemistry) and treat them

### **Methylation**

- Test homocysteine (ideal is 6-8), serum methylmalonic acid (> 250 abnormal), and organic acids – FIGLU, MMA, and B6 markers.
- Eat greens and beans (think “foliage for folate”).
- MeB12 5000 mcg sl or im
- Folinic acid 800 mcg to 5 grams (or 5 MTHF)
- B6 (Pyridoxyl 5-phosphate) 50 to 200 mg
- Trimethylglycine 500mg 2 bid or more

### **Sulfation**

- Test using LFTs (GGT) organic acids, GSH SNPs.
- Brassicas, green tea, alliums, watercress, cocoa, polyphenols
- NAC 500-1000 mg bid
- r-lipoic acid 100mg bid to 300 mg bid
- Milk thistle 140 mg 1-2 bid or more if abnormal LFT
- Se 200-400 mcg qd
- iv GSH 2 grams 2-3 x a week or more if toxic or chronically ill (can do right after Myer’s cocktail)

## **Fix the Gut (Assimilation) – WHEN IN DOUBT DO THIS!!!**

- Start with elimination diet (see below) for food sensitivities)
- Treatment of gut dysfunction (dysbiosis)
  - Small bowel bacterial overgrowth (SIBO)
    - Rifaximin 200 mg 2 po tid x 7 d
  - Yeast overgrowth
    - Fluconazole 100 mg po qd x 30 d

- Nystatin 500,000 U 2 bid x 30 d
- Itraconazole 200 mg bid x 30 d
- Parasites and worms
  - Alinia 500 mg po bid x 6 d (most parasites) – may need higher dose and longer duration (1000 mg bid x 14 d)
  - Albendazole 200 mg 2 bid for 3 days repeat in 2 wks (for most worms)
- Fix a leaky gut (Simple 4R or 5R protocol)
  - Remove: Treat bugs (as above) and allergens (elimination diet) first
  - Replace: Support with enzymes (1-2 with each meal – may need either plant or animal enzymes – can use Creon if very bad)
  - Re-inoculate: probiotics and prebiotics (fiber)
  - Repair: Nutrient and anti-inflammatory support for gut healing (anti-inflammatory shakes, glutamine, quercetin, turmeric, GLA, Zn)

### **Treat Small Intestinal Bacterial Overgrowth or SIBO (and Yeast!)**

- Symptoms of post prandial bloating are diagnostic.
- Can also co-exist with yeast – consider hx: antibiotics, steroids, hormones, sugar intake, etc.
- Testing for SIBO – Organic acids: Indican, D-lactate, DHPPA; other dysbiosis markers.
- Need to do an elimination diet (based on IgG or gluten and dairy to start) and low fermentation diet (low in grains and sugars initially).
- Probiotics can make them worse initially.
- Start with Xifaxin (Rifaximin) 200 mg 2 tid for 1 week – some may need longer term, repeat or chronic low dose treatment 200 mg a day.
- Follow by Diflucan (fluconazole) 100 mg qd x 3-4 weeks.
- Use probiotics aggressively 50 – 450 billion units.

### **Cool Off Inflammation (Defense and Repair)**

- Use allergy elimination diets (gluten, dairy, eggs +/- corn, citrus, soy, nightshades, peanuts) – see tool kit or book resources for easy plan for patients.
- Learn the whole spectrum of gluten-related disorders and their diagnosis and treatment (see below).
- Think hidden infections - viral, atypical (Mycoplasma, Chlamydia, Ureaplasma), tick-borne (Lyme and co-infections), dental (root canals), etc.
- Think mold.

### **Food Sensitivities and Reactions**

- These are real, varied, and change over time,

- Check total IgG antibody testing (not IgG4 only)– they change over time –some are true and some are confounders (blocking antibodies); no way of knowing really.
- If very sick, eliminate all for 12 weeks then reintroduce slowly; if less ill just eliminating 2+ and greater is enough.
- Most common allergies: gluten, dairy, eggs, yeast, often soy, and then others are specific and so may need to be tested. Can just do a trial of elimination/reintroduction – see Tool Kit for plan for patients.

### **Celiac and Gluten Sensitivity**

- Think gluten for anyone who has any an inflammatory, allergic, digestive, autoimmune, mood, or cognitive disorder, or any chronic illness
- Check IgA, IgG, anti-gliadin antibodies, and tTG IgA and IgG and total IgA levels. Deaminated gliadin testing is more sensitive and is done by Labcorp.
- Consider HLA genotyping for DQ2/8 if suspect problem but antibodies are equivocal.
- Be aware of innate (cell-mediated) vs. adaptive (antibody mediated) responses and of “latent” celiac with positive antibodies but negative biopsy.
- Give 12 weeks STRICT elimination until you know full benefit.
- Think other allergies which go along with it because of leaky gut – dairy, eggs, yeast, etc.

### **Think Mold**

- If someone is chronically ill or resistant to treatment, check mold and mycotoxin IgA, IgM, and IgG antibodies.
- Check VCS testing ([www.survivingmold.com](http://www.survivingmold.com)).
- Check TGF beta 1, C4a (if very high chronic inflammation and mold likely).
- Remove from moldy environment.
- Environmental engineer needs to assess environment and remediate.
- Detox is tough – requires a comprehensive plan.
- Consider cholestyramine and charcoal– bowels need to move!

## **Balance Hormones (Communication)**

### **See Matrix Quizzes for Diagnosis**

- Need comprehensive program to address all aspects of hormonal dysfunction
- Identify and treat insulin resistance and dyslipidemia
  - Testing is important to assess degree of insulin resistance.
  - 75 gram glucose load with 1 and 2 hour insulin and glucose (nl ins < 5 fasting, < 30 at 1 and 2 hours; BS 70-90 nl fasting, < 120 at 1 and 2 hours).

- Check co-existing biomarkers – CRP, ferritin, fibrinogen, homocysteine, uric acid, LFT's, male hormones (low testosterone).
- Use PGX (glucomannan) 4 qid 5 min ac meals and qhs with 8 oz H2O (very effective viscous fiber).
- Low GL, high phytonutrient diet; protein in am and with each meal; small frequent meals – for advanced cases no grain or fruit or sugar for 6-12 weeks.
- MVI, EFA, D, Cr 500 mcg, alpha lipoic acid 300 mg bid.
- Address HPA axis dysfunction and adrenal insufficiency
  - Adrenal Stress Index saliva test.
  - Try herbs (ginseng, rhodiola, Siberian ginseng, licorice, ashwaganda, etc.).
  - Glandulars may help.
  - Stress reduction – yoga, massage, mediation, HeartMath, etc.
- Identify and treat thyroid dysfunction
  - See resources for books, etc.
  - TSH, free T3, free T4, TPO and anti-thyroglobulin as baseline.
  - TSH > 2.5, FT3 and FT4 low end normal and or TPO or ATG elevation should trigger trial of thyroid.
  - Start with Armour 15 to 30 mg qam 20 min ac meals and recheck q 6 wks till stable - 20% may need other combinations of T4/T3.
- Identify and treat progesterone, estrogen and testosterone imbalances
  - Learn simple hormone support – see below.
  - Try Bethany Hays's compounded cocktail for menopause: Estradiol 150 mg, Progesterone 6 grams, testosterone 200 mg in 30 cc propylene glycol – apply 1 drop to forearm at night and increase by one drop every 3 days until hot flashes resolve or breast tenderness occurs.
  - For PMS try Mg, B6, taurine, Chinese herb formula; avoid sugar, etoh, dairy.
  - For men – try topical testosterone prescriptions or compounded or equivalent and monitor levels (often low because of insulin resistance).

## **Biotransformation (Detoxification)**

- Always identify heavy metal toxicity by DMPS or DMSA challenge and whole blood Hg, Pb, Ar.
- Learn dietary strategies to up-regulate detox (phytonutrients, crucifers, garlic).
- Use nutrients and herbs to optimize detoxification (see above).
- Learn how to optimize methylation and sulfation (see above).
- Get advanced training on heavy metal detoxification.

## **Heavy Metal Toxicity**

- Think mercury if some is chronically ill.

- Do oral DMPS challenge with 10mg/kg per am dose (max 500 mg and 250 mg for kids or elderly).
- Empty bladder, 6-hour urine collection – anything over 50 mcg/gr/cr is very high.
- Send to lab.
- Lower levels can cause immunotoxicity and autoimmunity (consider MELISA testing).
- Prepare patient for detoxification by general nutrition and health support.
- Replete amino acids prior to detox – (customized blends if possible based on AA testing).
- Chelation – antioxidants, detox diet, saunas, exercise, liver support (NAC, ALA, Se, thisilyn), Zn, Cu, etc. and DMSA po 10 mg/kg MTW every other week for 3-12 months along with binder (modified citrus pectin or alingate).
- Repeat challenge after 3-6 months.

## Energy (Mitochondria and Redox)

- Learn how to take care of mitochondria and address redox status.
- Learn how to interpret organic acid analysis – the why and what to do?
- Learn to use mitochondrial support.
  - Phospholipids, acetyl-L-carnitine, CoQ10, D-ribose, Mg/K aspartate, alpha lipoic acid, NADH, B2, B3, NAC..

## Psycho-spiritual and Relationship

- Develop the skills to create a healing relationship with the patient.
- Develop the skills to create a healing environment with the patient.
- Address psychosocial issues that provide the context for patients life/illness.
- Develop resources for mind-body medicine (e.g., yoga, meditation, biofeedback, HeartMath).

## Essential Functional Medicine Tests

### Learn the Organic Acid Test

- Study interpretation guides from labs on their tests – some have published books on lab testing and assessment.
- Learn support of fat, CHO and energy metabolism, B vitamins, oxidative stress, NT function, detoxification, and gut dysbiosis

### Learn Stool Analysis

- CDSA or PCR testing

## Laboratories

- Metametrix
- Genova
- Doctor's Data (for metals)
- ImmunoLabs (IgG and IgE allergy testing)
- Liposcience (for NMR testing lipids)
- Quest/Labcorp
- Igenex (for tick borne infections)
- Neurosciences (for MELISA)
- Diagnos Techs (adrenal stress index)

## Supplement Companies

- Metagenics
- Prothera/Klaire
- Pure Encapsulations
- Designs for Health
- Thorne
- Researched Nutritionals

See [www.drhyman.com](http://www.drhyman.com) for more articles, resources and information.