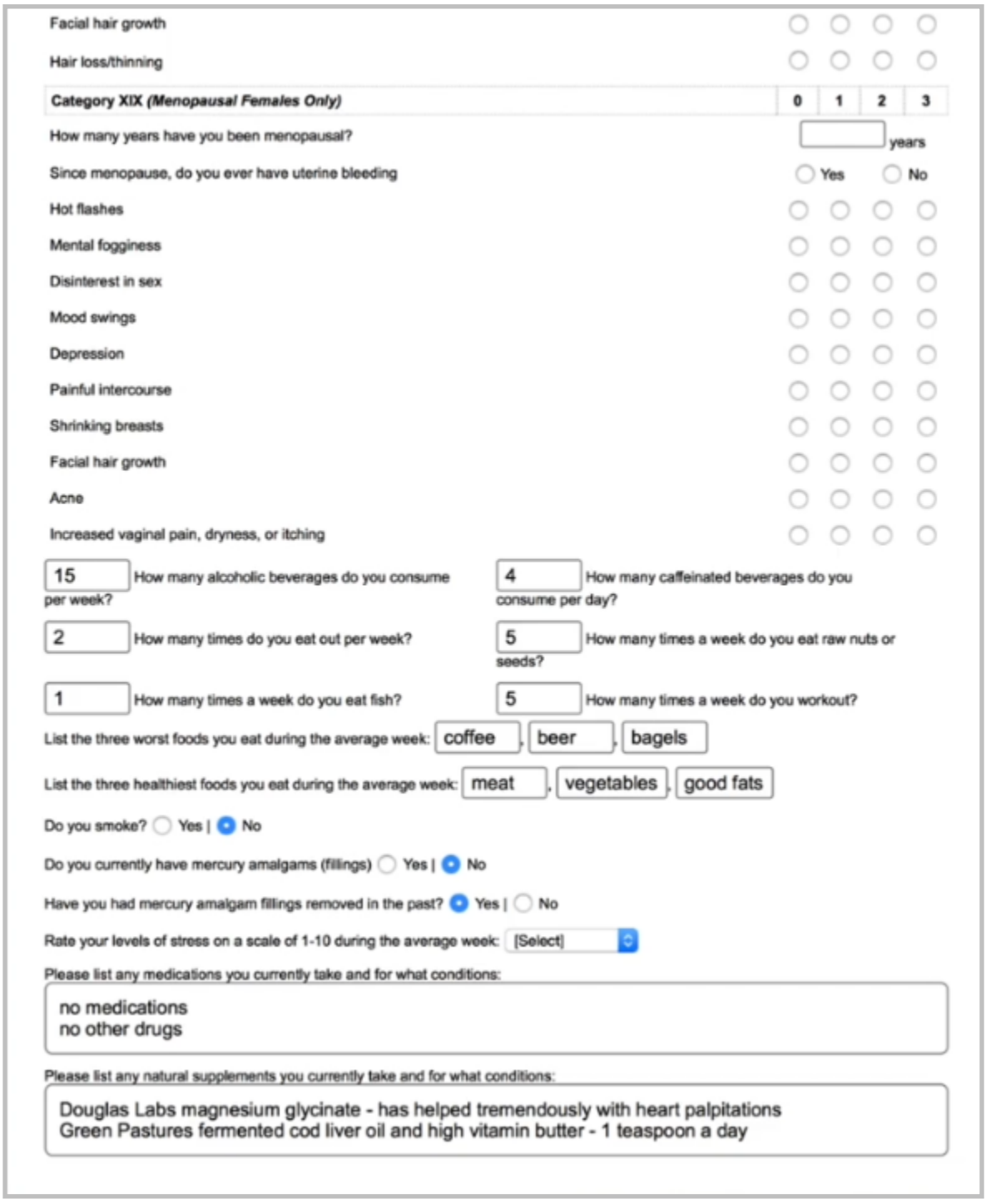
KRESSER INSTITUTE FOR FUNCTIONAL AND EVOLUTIONARY MEDICINE

Full Case Reviews I - Part Three

Tolerance to sugars reduced	●	○	○	○
"Splitting" - type headaches	●	○	○	○
Category XVI *(Males Only)*	**0**	**1**	**2**	**3**
Urination difficulty or dribbling	●	○	○	○
Frequent urination	○	●	○	○
Pain inside of legs or heels	●	○	○	○
Feeling of incomplete bowel emptying	●	○	○	○
Leg twitching at night	●	○	○	○
Category XVII *(Males Only)*	**0**	**1**	**2**	**3**
Decreased libido	○	●	○	○
Decreased number of spontaneous morning erections	○	○	●	○
Decreased fullness of erections	○	○	●	○
Difficulty maintaining morning erections	○	○	●	○
Spells of mental fatigue	○	●	○	○
Inability to concentrate	○	●	○	○
Episodes of depression	●	○	○	○
Muscle soreness	○	○	●	○
Decreased physical stamina	○	○	●	○
Unexplained weight gain	○	○	○	●
Increase in fat distribution around chest and hips	○	●	○	○
Sweating attacks	●	○	○	○
More emotional than in the past	○	○	●	○
Category XVIII *(Menstruating Females Only)*	**0**	**1**	**2**	**3**
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	○	○	○	○
Scanty blood flow	○	○	○	○
Heavy blood flow	○	○	○	○
Breast pain and swelling during menses	○	○	○	○
Pelvic pain during menses	○	○	○	○
Irritable and depressed during menses	○	○	○	○
Acne	○	○	○	○



	0	1	2	3
Facial hair growth	○	○	○	○
Hair loss/thinning	○	○	○	○
Category XIX *(Menopausal Females Only)*	**0**	**1**	**2**	**3**
How many years have you been menopausal?				____ years
Since menopause, do you ever have uterine bleeding				○ Yes ○ No
Hot flashes	○	○	○	○
Mental fogginess	○	○	○	○
Disinterest in sex	○	○	○	○
Mood swings	○	○	○	○
Depression	○	○	○	○
Painful intercourse	○	○	○	○
Shrinking breasts	○	○	○	○
Facial hair growth	○	○	○	○
Acne	○	○	○	○
Increased vaginal pain, dryness, or itching	○	○	○	○

15 How many alcoholic beverages do you consume per week?

4 How many caffeinated beverages do you consume per day?

2 How many times do you eat out per week?

5 How many times a week do you eat raw nuts or seeds?

1 How many times a week do you eat fish?

5 How many times a week do you workout?

List the three worst foods you eat during the average week: coffee, beer, bagels

List the three healthiest foods you eat during the average week: meat, vegetables, good fats

Do you smoke? ○ Yes | ● No

Do you currently have mercury amalgams (fillings) ○ Yes | ● No

Have you had mercury amalgam fillings removed in the past? ● Yes | ○ No

Rate your levels of stress on a scale of 1-10 during the average week: [Select]

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

no medications
no other drugs

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

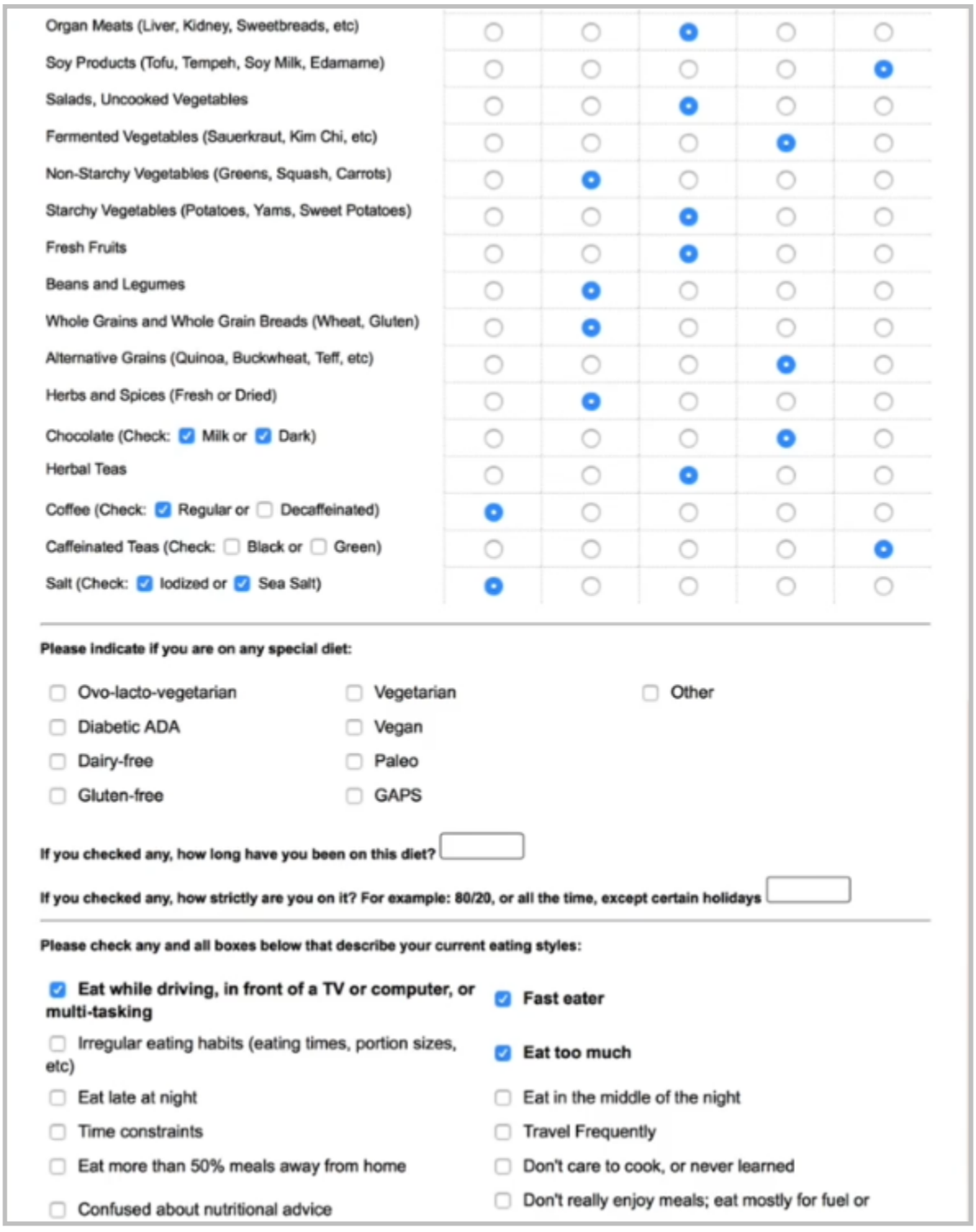
Douglas Labs magnesium glycinate - has helped tremendously with heart palpitations
Green Pastures fermented cod liver oil and high vitamin butter - 1 teaspoon a day

He also has some symptoms of “manopause.” Look at the Category XVII for male hormones: decreased morning erections, decreased libido, increased muscle soreness, and decreased stamina. Notice his alcohol intake. He is consuming 15 drinks a week, so that is highly significant, and he also consumes four caffeinated beverages per day. He is eating bagels and drinking beer, so diet could obviously be better. No medications or drugs, and he is taking magnesium and fermented cod liver

oil as a supplement. The alcohol and the caffeine intake are going to have to be addressed in order for this patient to recover in all likelihood given his symptoms and history.

Indicate the frequency with which you eat the following foods by marking in the appropriate box. **FREQUENT**= at least once a day, **OFTEN**= several times per week, **OCCASIONAL**= once a week or less, **SELDOM**= once or twice a month or less, **NEVER**= total avoidance.

	Frequent	Often	Occas.	Seldom	Never
Alcoholic Beverages	○	●	○	○	○
Eat Out at Restaurants	○	○	●	○	○
Pastries, Cookies, Candy, Ice Cream and Other Sweets	○	●	○	○	○
White Flour: Bread, Pasta, Pancakes, Crackers, Muffins, etc	●	○	○	○	○
Add Sugar to Coffee, Tea, Cereals, or Other Foods	○	○	○	○	●
Sodas or Soft Drinks	○	○	○	○	●
Diet Soft Drinks	○	○	○	○	●
Fruit Juices	○	○	○	●	○
Artificial Sweeteners (NutraSweet, Saccharin, etc)	○	○	○	○	●
Natural Sweeteners (Honey, Maple Syrup, Agave, etc)	○	○	○	○	●
Breakfast Cereals (Hot or Cold)	○	○	○	○	●
Packaged Foods:Chips, Crackers, Puffs, Pretzels	○	●	○	○	○
Vegetable Oils (Sunflower, Safflower, Canola, Corn, Soy)	○	○	○	●	○
Margarine or Tub Vegetable Oil Spreads	○	○	○	○	●
Deep-Fried Foods	○	●	○	○	○
Olive Oil	●	○	○	○	○
Avocados	○	●	○	○	○
Saturated Fats (Butter, Ghee, Lard, Coconut, Palm, Tallow)	○	●	○	○	○
Fatty Fish (Salmon, Mackerel, Sardines, Herring)	○	○	●	○	○
Nuts and Seeds, Nut/Seed Butters	○	●	○	○	○
Pasteurized Dairy (Check: ☐ Nonfat, ☐ Low-Fat, ☑ Whole)	○	●	○	○	○
Raw Dairy Products (Check: ☐ Nonfat, ☐ Low-Fat, ☐ Whole)	○	○	○	○	●
Fermented Dairy Products (Yogurt, Kefir, Cheese)	○	○	○	●	○
Eggs (Check: ☑ Free-Range, ☑ Pastured, ☑ Organic, or ☐ Conventional)	●	○	○	○	○
Poultry or Fowl (Chicken, Turkey, Duck, etc)	○	●	○	○	○
Pork	○	○	●	○	○
Red Meat (Beef, Lamb)	○	●	○	○	○
Processed Meats (Bacon, Sausage, Salami, Ham, etc)	○	○	●	○	○



Organ Meats (Liver, Kidney, Sweetbreads, etc)	○	○	●	○	○
Soy Products (Tofu, Tempeh, Soy Milk, Edamame)	○	○	○	○	●
Salads, Uncooked Vegetables	○	○	●	○	○
Fermented Vegetables (Sauerkraut, Kim Chi, etc)	○	○	○	●	○
Non-Starchy Vegetables (Greens, Squash, Carrots)	○	●	○	○	○
Starchy Vegetables (Potatoes, Yams, Sweet Potatoes)	○	○	●	○	○
Fresh Fruits	○	○	●	○	○
Beans and Legumes	○	●	○	○	○
Whole Grains and Whole Grain Breads (Wheat, Gluten)	○	●	○	○	○
Alternative Grains (Quinoa, Buckwheat, Teff, etc)	○	○	○	●	○
Herbs and Spices (Fresh or Dried)	○	●	○	○	○
Chocolate (Check: ☑ Milk or ☑ Dark)	○	○	○	●	○
Herbal Teas	○	○	●	○	○
Coffee (Check: ☑ Regular or ☐ Decaffeinated)	●	○	○	○	○
Caffeinated Teas (Check: ☐ Black or ☐ Green)	○	○	○	○	●
Salt (Check: ☑ Iodized or ☑ Sea Salt)	●	○	○	○	○

Please indicate if you are on any special diet:

☐ Ovo-lacto-vegetarian	☐ Vegetarian	☐ Other
☐ Diabetic ADA	☐ Vegan	
☐ Dairy-free	☐ Paleo	
☐ Gluten-free	☐ GAPS	

If you checked any, how long have you been on this diet?

If you checked any, how strictly are you on it? For example: 80/20, or all the time, except certain holidays

Please check any and all boxes below that describe your current eating styles:

☑ **Eat while driving, in front of a TV or computer, or multi-tasking**	☑ **Fast eater**
☐ Irregular eating habits (eating times, portion sizes, etc)	☑ **Eat too much**
☐ Eat late at night	☐ Eat in the middle of the night
☐ Time constraints	☐ Travel Frequently
☐ Eat more than 50% meals away from home	☐ Don't care to cook, or never learned
☐ Confused about nutritional advice	☐ Don't really enjoy meals; eat mostly for fuel or

Diet survey: Again, alcohol is listed here often. Pastries, cookies, sweets, and white flour are often or frequent. Packaged foods are often as well. , So you're definitely going to have some work to do with this patient related to diet and lifestyle.

calories

- [ ] Eat lots of pre-made or pre-packaged foods and snacks
- [ ] Lack of choice of healthy foods in neighborhood
- [x] **Don't eat breakfast or dinner together as a family unit**
- [ ] Don't share same meals, even if seated together at table (special dietary needs and/or food preferences)
- [ ] Emotional eater (when sad, bored)
- [ ] Have a negative relationship to food
- [x] **Diet often for weight control**
- [ ] Struggle with eating issues or history of eating disorders
- [ ] Eat too much or too little under stress

Additional Comments

The food we eat is probably the single-most important factor determining whether we are healthy or ill. The goal of this survey is not to pass judgment, but instead to get an accurate idea of what you're eating and how it may (or may not) be contributing to your health problems. The more accurate and honest you can be in your responses, the more I will be able to help you make choices that support health and well-being.

1) Describe a typical breakfast (including what time you eat it).

McDonald's breakfast burrito or two hard boiled eggs from home, coffee; eaten when I get to work at 7:45am

2) Do you have a morning snack? ○ Yes ◉ No ○ Sometimes

3) Describe a typical lunch (including what time you eat it).

leftovers from dinner from night before. Typically very healthy with all macronutrients but includes grain/bread. I eat it just after I work out at noon time.

4) Do you have an afternoon snack? ○ Yes ◉ No ○ Sometimes

No snack

5) Describe a typical dinner (including what time you eat it).

healthy dinner with all macronutrients but including grain/legumes but typically after drinking two cans of beer. usually eaten at 6:30 or 7.

6) Do you eat a bedtime snack? ○ Yes ○ No ○ Sometimes

No snack

7) Do you eat dessert after: ○ lunch? ◉ dinner? ○ both? ○ "I don't eat dessert"
Please describe what you eat for dessert

Here is where I eat my trash. sugar and high glycemic carbs in combo. (i.e. ice cream, doritos, etc.)

8) Do you wake up hungry in the middle of the night? ○ Yes ◉ No ○ Sometimes
If so, do you eat? What do you eat?

Additional Comments

This description is my typical diet PRIOR to the 30 day reset. I always emphasize good fats EXCEPT when I eat the after dinner trash described above.

Continuing along that theme, breakfast at McDonald's every morning, so I think we can certainly do better. Lunch includes grain and bread on a daily basis. A healthier dinner for sure but still eating grains, which may or may not be a problem. I think you know how I feel about that at this point, but he is drinking two beers at least every night, frequently eats junk food after dinner, which is probably in part influenced by drinking those beers. We know that alcohol consumption can really affect food choices. One thing worth noting is he did do a 30-day reset between the

initial consult and the case review, and what he listed here was his previous diet. He did the reset, so he is willing to make changes.

ENVIRONMENTAL EXPOSURE

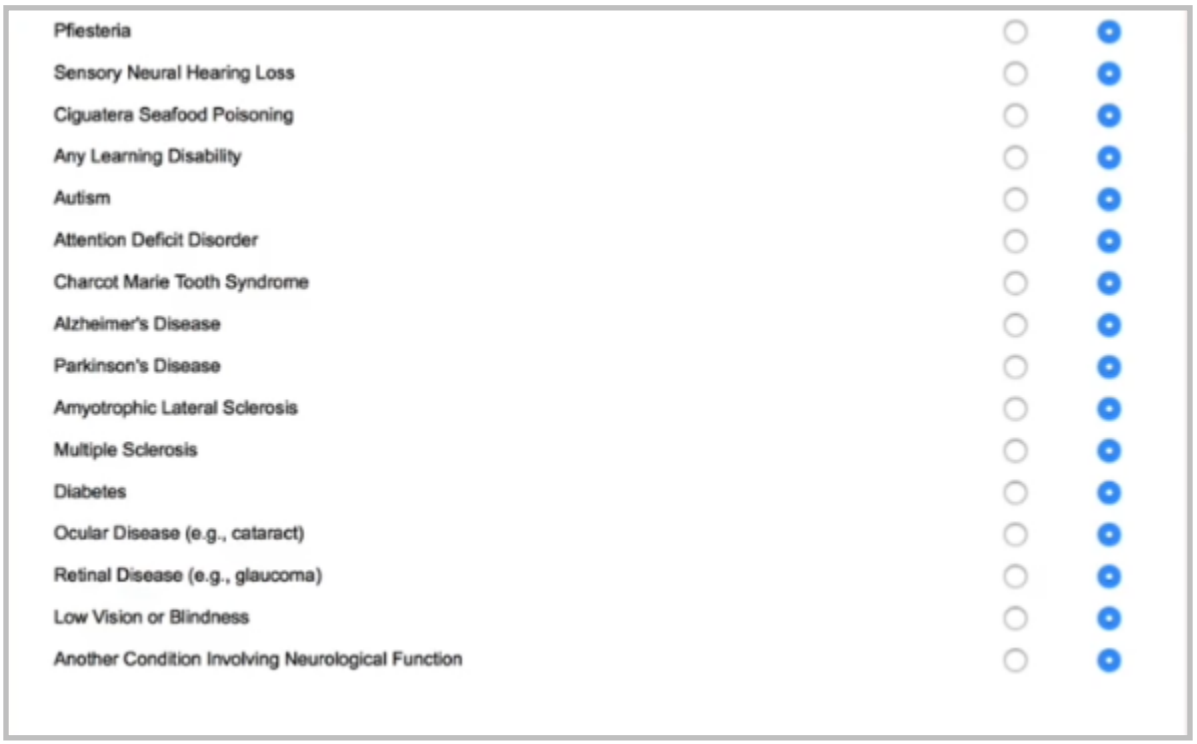
Please answer the following questions:

	Yes	No	Unknown
1) Do you have exposure to the interior building of a water damaged building and/or microbial growth? If yes, please answer the next three (3) questions:	○	●	○
a. Do you have samples/evidence of spore or genus and species of fungus (air test, ERMI test, etc.)	○	○	○
b. Is there visible microbial growth (mold)?	○	○	○
c. Is there a presence of musty smells?	○	○	○
2) Do you remember a tick bite occurring before your illness beginning? If yes, please answer the next two (2) questions:	○	●	○
a. Did you have an unexplained rash after the bite?	○	○	○
b. Did you experience flu-like illness after the bite?	○	○	○
3) Have you had a brown recluse or other poisonous spider bite? If yes:	○	●	○
a. Did you experience flu-like illness after the bite?	○	○	○
4) Did you become ill after eating fish?	○	●	○
5) Did you become ill after exposure to a body of fresh water?	○	●	○
6) Did you become ill after exposure to the ocean during a 'Red Tide' or other bloom?	○	●	○
7) Did you become ill after exposure to an estuary fish kill?	○	●	○
8) Did you become ill after exposure to a closed shell fish bed area?	○	●	○

ASSOCIATED ILLNESSES

Please mark yes or no:

Illness	Yes	No
Tick borne illness	○	●
Lyme Disease	○	●
Fibromyalgia	○	●
Chronic Fatigue Syndrome	○	●
Gulf War Syndrome	○	●
Chemical Sensitivity	○	●
Sick Building Syndrome	○	●
Fungus or Mycotoxicosis	○	●
Depression	○	●
Chronic Soft Tissue Injury	○	●
Irritable Bowel Syndrome	○	●
Bacteria	○	●
Bell's Palsy	○	●



Pfiesteria	○	●
Sensory Neural Hearing Loss	○	●
Ciguatera Seafood Poisoning	○	●
Any Learning Disability	○	●
Autism	○	●
Attention Deficit Disorder	○	●
Charcot Marie Tooth Syndrome	○	●
Alzheimer's Disease	○	●
Parkinson's Disease	○	●
Amyotrophic Lateral Sclerosis	○	●
Multiple Sclerosis	○	●
Diabetes	○	●
Ocular Disease (e.g., cataract)	○	●
Retinal Disease (e.g., glaucoma)	○	●
Low Vision or Blindness	○	●
Another Condition Involving Neurological Function	○	●

Environmental survey is unremarkable. However, he did mention that he developed skin issues while he was serving in Iraq, so you may want to revisit that later.

The single most important criteria for effective case management is a comprehensive and detailed health history. Please answer the following questions with as much detail as possible. It is important for me to know everything about you and your case. Even when you feel the questions may not be directly relevant to your situation, please do your best to answer them.

It takes tremendous time and energy for any healthcare provider to manage a complicated case. My practice is limited to a small number of patients and therefore the case review process is very important.

Instructions: Please type answers to the following questions with as much detail as possible. Please answer each question independently.

HEALTH HISTORY QUESTIONS

1) Please list the following

Education: B.S. Science M.B.A. Business

Profession: Securities Compliance Examiner; Commonwealth of PA

Interests (sports, hobbies, etc.):

Adventure racing (think triathlon in the woods)
Trail running
Glider flying
Family stuff

2) List your chief complaints in order of your importance:

heart palpitations
high body fat %

I have others but they are the big two

3) List all diagnoses given to you in a timeline sequence and your personal opinions about them.

newest to oldest
Feb 2016 - hypothyroid - went to ER for irregular heartbeat (which resolved on it's own) and EKG and all tests were normal except TSH of 6.8 - opinion: if true it accounts for many of my symptoms
Dec 2015 - rhabdomyelosis - went to ER on third day of intense fitness camp with CK total of 6000: had palpitations at 200 bpm that needed to be resolved with IV drug. Prior to this event, my BP was always normal but after the event I have been monitoring my BP as it has been averaging 135/95.
Feb 2014 - right shoulder rotator cuff surgery. Had supraspinatus tendon reattached after separating it while conducting a heavy olympic lift
2010 - Hypercholesterimia - had weight gain and total cholesterol rose to 240. My PCP at the time put me on a daily of 40mg Simvastatin. Did that for a couple years and total cholesterol taken to 125. About two years ago, I started reading Chris' blog and began to question this with my new PCP. She took me to 10mg and I stayed there about 6 months then about a year ago, with yet another new PCP (my HMO doesn't keep them for long) he allowed me to stop taking Simvastatin altogether since I was working out so much. I don't believe it contributed to my rhabdo since I had been off it for over a year.
That concludes my diagnoses.

4) What's your opinion on what has happened to your health?

In my opinion, I take pretty darn good care of myself. I eat well and at least satisfy the 80/20 rule; I get adequate sleep and always at night. I practice stress management through breathing and yoga and I exercise more than sufficiently.

I have never used any types of prescription or illegal drugs. My only bad habits are two beers 5 times a week and now 1 cup of coffee a day, although I used to do 6 cups of coffee a day till the end of 2015.

I believe that my health has degraded for metabolic reasons and not for reasons of bad behavior.

5) List any treatments, medications, or supplements that have improved your health.

Magnesium glycinate has improved (lessened the frequency) of my heart palpitations

March 2nd 2016 - I have received today Chris' "hypothyroid supplement pack" and will begin taking today. I'll let you know the results.

Have been taking Green Pasture cod liver/butter oil for a month and will continue but don't see any difference (1 teaspoon a day of gel)

I also have taken intermittently Chris' "weight loss supplements" as sold on the website and have noticed no difference in my weight attributed to these supplements

6) List any treatments, medications, or supplements that have caused reactions or decreased your health.

The IV drug given to me at Scripps Encinitas to control my heartbeat definitely decreased my health.

7) List in a timeline sequence any medical procedures or surgeries you have had:

December 2015 - rhabdo and heart palpitations; see item 3 above
Feb 2014 - rotator cuff surgery; see item 3 above

PERSONAL OPINION QUESTIONS

**Please* do not answer "I don't know" to any of these questions.*

1) Why do you think healthcare practitioners have failed with your case?

everything they do up till now is reactive to something going wrong. I need a proactive approach to treat the underlying cause; not the symptoms. I transferred all my healthcare to Johns Hopkins over 10 years ago hoping for this. They are good but I have gone through all my tests in my online health record "My Chart" and have found they never even checked my thyroid that whole time. Disappointing.

2) What are you looking for in a healthcare practitioner?

a combo of east and west. I need functional medicine to get me healthy and keep me healthy but if something really goes wrong, I need an organization like Hopkins to fall back on if something really bad happens to me. They have great specialists and a great hospital and I can drive there.

3) What do you consider a realistic window of time to see changes in your health under our care?

6 months

4) Are you prepared to pay for the laboratory testing, consulting fees and nutritional supplements that may be required to successfully manage your condition?

yes

5) On a scale of 1 to 10, how committed are you to recovering your health? 10 Why?

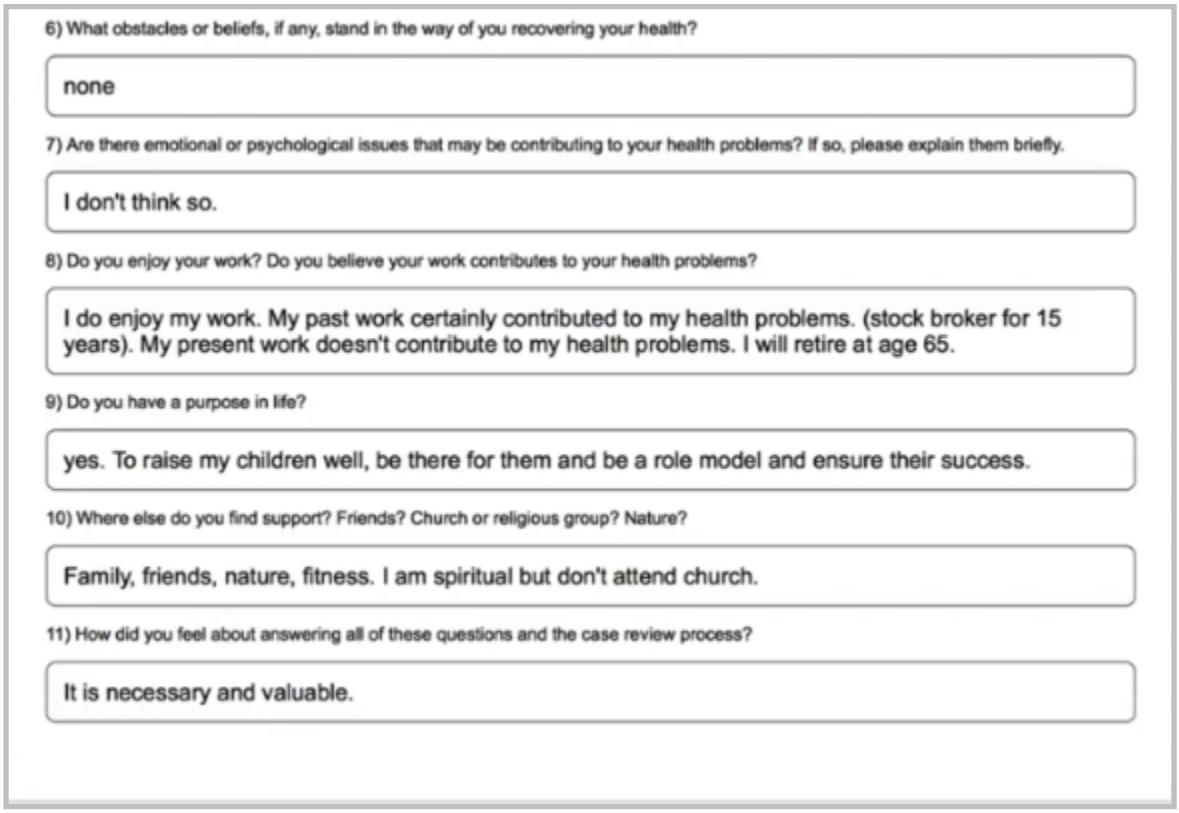
I've got 25 years left if I'm lucky. I want them to be great. I don't want to be limited in any way by my health, fitness or mobility.

Case review questionnaire: Again, I'm just going to point out the highlights. In February 2016, he went to the ER for arrhythmia, and he had a TSH of 6.8 at that point. Hypothyroidism can cause palpitations. In December 2015, he had rhabdomyolysis, which is rapid breakdown of skeletal muscle tissue after participating in an intense fitness camp. This can happen. It does happen with crossfit

people or people doing these kinds of boot camps, and it is potentially fatal, so it is something to be aware of. In 2010, he was diagnosed with hypercholesterolemia and went on statins, which could have contributed to muscle pain and even rhabdomyolysis. Rhabdomyolysis is a rare side effect of statin use. It is possible. It's probably not likely, but in some cases, statins do cause irreversible muscle damage, and it would be really hard to know one way or the other at this point.

He mentions in the narrative responses here that he eats well, and yet the dietary survey tells a different story, so again, there is often these kinds of contradictions in the intake process. You want to ask some questions to get more clarity there.

He expects to see changes in six months. That's reasonable. The red flag is when someone writes two weeks there. You would want to definitely explore their expectations further if they write that on the questionnaire. On a scale of 1 to 10 in terms of his commitment, he is a 10, and that is definitely what we want to see.



6) What obstacles or beliefs, if any, stand in the way of you recovering your health?

none

7) Are there emotional or psychological issues that may be contributing to your health problems? If so, please explain them briefly.

I don't think so.

8) Do you enjoy your work? Do you believe your work contributes to your health problems?

I do enjoy my work. My past work certainly contributed to my health problems. (stock broker for 15 years). My present work doesn't contribute to my health problems. I will retire at age 65.

9) Do you have a purpose in life?

yes. To raise my children well, be there for them and be a role model and ensure their success.

10) Where else do you find support? Friends? Church or religious group? Nature?

Family, friends, nature, fitness. I am spiritual but don't attend church.

11) How did you feel about answering all of these questions and the case review process?

It is necessary and valuable.

Nothing significant here. I do pay attention to these answers, especially to the last question: "How did you feel about answering all these questions in the case review process?" In the instructions, we specifically ask people not to answer with yes or no or one-word answers, but oftentimes, particularly men will answer with just "fine" or "okay." That's just something to be aware of. That may indicate that the patient is less willing to explore some of the stress-related, psychological, or emotional aspects of their illness, and it may indicate that there is some unwillingness to do that

kind of introspection. It doesn't mean that I'm not going to work with them, but it is something we may actually address in the treatment. I might have a conversation with them about that, or I might consider it as part of the whole-core pathology or presentation that we need to address.

Marker	Value	Functional Range	Lab Range
Glucose	97	75 - 90	65 - 99
Hemoglobin A1c	5.7	4.4 – 5.4	4.8 - 5.6
Uric Acid	6.7	3.7 – 6.0	3.7 - 8.6
BUN	15	13 – 18	6 - 24
Creatinine	1.06	0.85 – 1.1	0.76 - 1.27
BUN/Creatinine Ratio	14	8 – 19	9 - 20
Sodium	140	135 – 140	134 - 144
Potassium	4.8	4.0 – 4.5	3.5 - 5.2
Chloride	100	100 – 106	97 - 108
C02	22	25 – 30	18 - 29
Calcium	9.3	9.2 – 10.1	8.7 - 10.2
Phosphorus	3.5	3.5 – 4.0	2.5 - 4.5
Magnesium	2.1	2.0 – 2.6	1.6 - 2.3
Protein, total	6.8	6.9 – 7.4	6.0 - 8.5
Albumin	4.3	4.0 – 5.0	3.5 - 5.5
Globulin	2.5	2.4 – 2.8	1.5 - 4.5
A/G ratio	1.7	1.5 – 2.0	1.1 - 2.5
Bilirubin, total	0.6	0.1 – 1.2	0.0 - 1.2
Alkaline Phosphatase	65	42 – 107	39 - 117
LDH	176	140 - 180	121 - 224
AST	24	10 - 30	0 - 40
ALT	21	10 - 29	0 - 44
GGT	16	0 - 40	0 - 65
TIBC	266	250 – 350	250 - 450
UIBC	159	150 - 375	111 - 343
Iron	107	85 – 135	38 - 169
Iron saturation	40	15 – 45	15 - 55
Ferritin	212	30 - 150	30 - 400
Vitamin B-12	637	450 – 2000	211 - 946
Vitamin D, 25-hydroxy	22.9	35 - 60	30.0 - 100.0
Cholesterol, total	224	150 - 240	100 - 199
Triglycerides	111	50 – 100	0 - 149
HDL	50	55 – 85	> 39
LDL	152	0 - 175	0 - 99
T. Chol / HDL Ratio	4.5	< 3	0 - 5.0
Triglycerides / HDL Ratio	2.22	< 2	< 3.8
CRP-hs	0.66	< 1.0	0.00 - 3.00
Homocysteine	11.6	< 7.0	0.0 - 15.0

Marker	Value	Functional Range	Lab Range
TSH	2.220	0.5 – 2.5	0.45 - 4.50
T4, total	9.8	6.0 – 12	4.5 - 12
T3 Uptake	29	30 - 38	24 - 39
T3, Total	101	100 – 180	71 - 180
T3, Free	3.2	2.5 - 4.0	2 - 4.4
T4, Free	1.52	1 - 1.5	0.82 - 1.77
Thyroid – TPO Ab	<6		0 - 34
Thyroid – TGA	<1.0		0 - 0.9
Copper	105		72 - 166
Zinc	79		56 - 134
Zinc / Copper Ratio	0.75	> 0.85	
Serum Methylmalonic Acid (MMA)	256	0 - 325	0 - 378
WBC	5.7	5.0 – 8.0	3.4 - 10.8
RBC	5.36	4.4 – 4.9	4.14 - 5.8
Hemoglobin	15.5	14 - 15	12.6 - 17.7
Hematocrit	45.9	40 - 48	37.5 - 51.0
MCV	86	85 – 92	79 - 97
MCH	28.9	27.7 – 32.0	26.6 - 33.0
MCHC	33.8	32 – 35	31.5 - 35.7
RDW	14.5	11.5 – 15.0	12.3 - 15.4
Platelets	255	150 – 415	150 - 379
Neutrophils	50	40 – 60	
Lymphocytes	35	25 – 40	
Monocytes	11	4.0 – 7.0	
Eosinophils	3	0.0 – 3.0	
Basophils	1	0.0 – 3.0	

Blood work: Fasting glucose is 97. A1c is 5.7. Uric acid is functionally high at 6.7, and triglycerides are functionally high at 111. There is definitely something going on here with blood sugar. Ferritin is also high at 212, which is consistent with blood sugar dysregulation, as you know. Other iron markers are normal, so that ferritin elevation may be more related to inflammation, although CRP is normal and not supporting that here.

Total cholesterol-to-HDL ratio is high at 4.5. His total cholesterol is 224, which isn't super high, but his HDL is on the lower side at 50. That is what is causing the ratio to be elevated. His triglycerides-to-HDL ratio is higher than optimal at 2.22. This also supports the idea of a metabolic issue, as does low vitamin D at 23.

Homocysteine is 11.6, so that is high-normal, high in the functional range. Serum B12 is normal at 637, so we'd want to look at FIGLU and urine MMA because serum MMA is normal here. Red blood cells and hemoglobin are functionally high. This is likely dehydration, especially given his high intake of caffeine and alcohol, both of which have a diuretic effect.

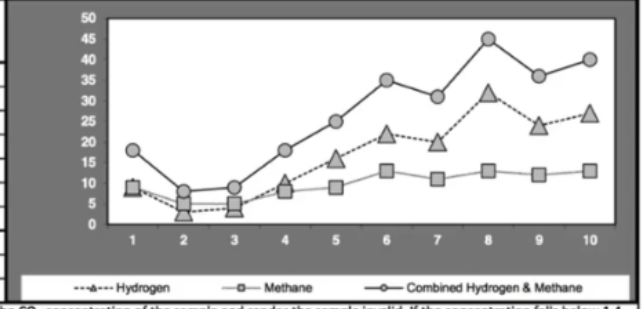
Zinc-to-copper ratio is a little low at 0.75. TSH is 2.2, which is very slightly above the optimal range of 2. I had a different range when I did this test, but free T4 and free T3 are completely normal. In fact, free T4 is just above the upper end of the functional range, but I don't think it is significant, and thyroid antibodies are normal.

However, he did have a TSH of 6 when he went into the hospital and had the palpitations, and these markers are all quite variable, so I would want to do another retest of the thyroid panel in a month or two, maybe three months, after addressing some of these issues and see what is going on, especially given all of his hypothyroid symptoms.

Data

H_2 = Hydrogen CH_4 = Methane CO_2 = Measured

	Sample	ppm H_2	ppm CH_4	Total H2 + CH4	CO_2 %*
1	Baseline	9	9	18	OK
2	20 min	3	5	8	OK
3	40 min	4	5	9	OK
4	60 min	10	8	18	OK
5	80 min	16	9	25	OK
6	100 min	22	13	35	OK
7	120 min	20	11	31	OK
8	140 min	32	13	45	OK
9	160 min	24	12	36	OK
10	180 min	27	13	40	OK



*Dilutions of the sample may occur during the sampling procedure which may decrease the CO_2 concentration of the sample and render the sample invalid. If the concentration falls below 1.4 %, the entry for CO_2 will be marked as Quantity Not Sufficient (QNS) and the entries for H_2 and CH_4 will be highlighted. If the sample is otherwise unusable the entry for CO_2 will be marked as Not Available (N/A) and the entries for H_2 and CH_4 will be highlighted. See notes section for details if cells are highlighted and blank or highlighted and contain N/A or QNS.

Analysis	Result	Flag	Normal
Combined baseline total =	18	-	≤20ppm
Greatest H_2 increase over the lowest preceding value within first 120 minutes =	19	-	≤20ppm
Greatest CH_4 increase over the lowest preceding value within first 120 minutes =	8	-	≤12ppm
Greatest combined H_2 & CH_4 increase over the lowest preceding value within first 120 minutes =	27	H	≤15ppm

Interpretation		
SIBO Suspected - Elevated Hydrogen	Increases of hydrogen greater than 20ppm over the lowest preceding value within the first 120 minutes (+/- 5min deviation) are indicative of bacterial overgrowth.	**NEGATIVE**
SIBO Suspected - Elevated Methane	Increases of methane greater than 12ppm over the lowest preceding value within the first 120 minutes (+/- 5min deviation) are indicative of bacterial overgrowth.	**NEGATIVE**
SIBO Suspected - Elevated Combined Hydrogen & Methane Gasses	Increases in combined hydrogen and methane gas values greater than 15ppm over the lowest preceding value are indicative of bacterial overgrowth.	**POSITIVE**

SIBO results are somewhat equivocal here. The QuinTron criteria marked it positive for combined gases, negative for hydrogen and methane individually, but would be positive for methane according to the Dr. Pimentel criteria. If this were the only test that we had, I would say it would be equivocal whether to go on and treat. You can make that determination based on symptoms and clinical presentation, but we have some other tests to look at, too.

Comprehensive Stool Analysis / Parasitology x3

BACTERIOLOGY CULTURE

Expected/Beneficial flora	Commensal (Imbalanced) flora	Dysbiotic flora
4+ Bacteroides fragilis group	1+ Alpha hemolytic strep	
4+ Bifidobacterium spp.	1+ Gamma hemolytic strep	
NG Escherichia coli	1+ Klebsiella pneumoniae ssp pneumoniae	
NG Lactobacillus spp.		
NG Enterococcus spp.		
4+ Clostridium spp.		

NG = No Growth

BACTERIA INFORMATION

Expected /Beneficial bacteria make up a significant portion of the total microflora in a healthy & balanced GI tract. These beneficial bacteria have many health-protecting effects in the GI tract including manufacturing vitamins, fermenting fibers, digesting proteins and carbohydrates, and propagating anti-tumor and anti-inflammatory factors.
Clostridia are prevalent flora in a healthy intestine. Clostridium spp. should be considered in the context of balance with other expected/beneficial flora. Absence of clostridia or over abundance relative to other expected/beneficial flora indicates bacterial imbalance. If *C. difficile* associated disease is suspected, a Comprehensive Clostridium culture or toxigenic *C. difficile* DNA test is recommended.
Commensal (Imbalanced) bacteria are usually neither pathogenic nor beneficial to the host GI tract. Imbalances can occur when there are insufficient levels of beneficial bacteria and increased levels of commensal bacteria. Certain commensal bacteria are reported as dysbiotic at higher levels.
Dysbiotic bacteria consist of known pathogenic bacteria and those that have the potential to cause disease in the GI tract. They can be present due to a number of factors including: consumption of contaminated water or food, exposure to chemicals that are toxic to beneficial bacteria; the use of antibiotics, oral contraceptives or other medications; poor fiber intake and high stress levels.

YEAST CULTURE

Normal flora	Dysbiotic flora
No yeast isolated	

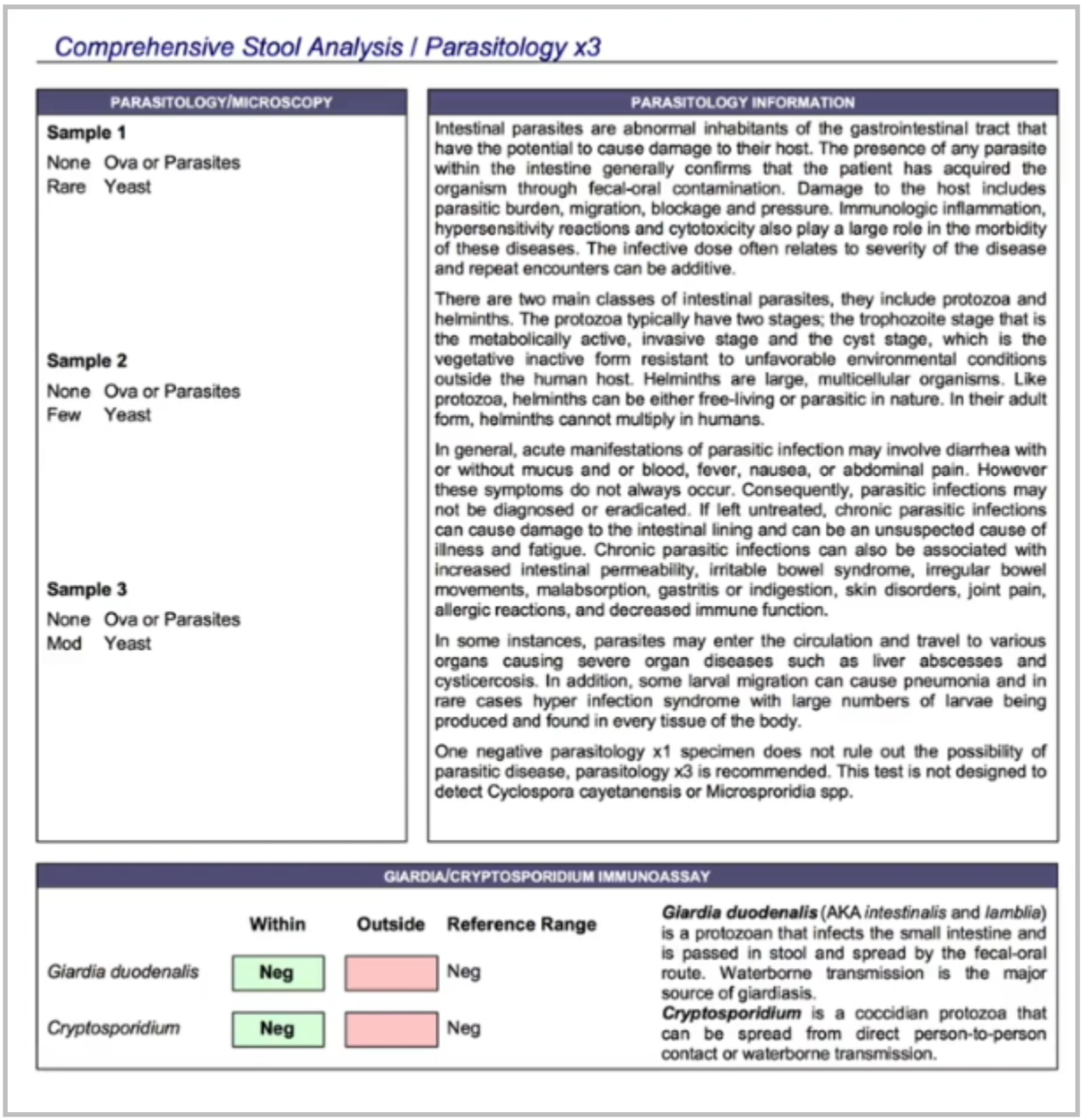
MICROSCOPIC YEAST

Result:	Expected:
Mod	None - Rare

The microscopic finding of yeast in the stool is helpful in identifying whether there is proliferation of yeast. Rare yeast may be normal; however, yeast observed in higher amounts (few, moderate, or many) is abnormal.

YEAST INFORMATION

Yeast normally can be found in small quantities in the skin, mouth, intestine and mucocutaneous junctions. Overgrowth of yeast can infect virtually every organ system, leading to an extensive array of clinical manifestations. Fungal diarrhea is associated with broad-spectrum antibiotics or alterations of the patient's immune status. Symptoms may include abdominal pain, cramping and irritation. When investigating the presence of yeast, disparity may exist between culturing and microscopic examination. Yeast are not uniformly dispersed throughout the stool, this may lead to undetectable or low levels of yeast identified by microscopy, despite a cultured amount of yeast. Conversely, microscopic examination may reveal a significant amount of yeast present, but no yeast cultured. Yeast does not always survive transit through the intestines rendering it unviable.



Comprehensive Stool Analysis / Parasitology x3

PARASITOLOGY/MICROSCOPY	PARASITOLOGY INFORMATION
Sample 1 None Ova or Parasites Rare Yeast **Sample 2** None Ova or Parasites Few Yeast **Sample 3** None Ova or Parasites Mod Yeast	Intestinal parasites are abnormal inhabitants of the gastrointestinal tract that have the potential to cause damage to their host. The presence of any parasite within the intestine generally confirms that the patient has acquired the organism through fecal-oral contamination. Damage to the host includes parasitic burden, migration, blockage and pressure. Immunologic inflammation, hypersensitivity reactions and cytotoxicity also play a large role in the morbidity of these diseases. The infective dose often relates to severity of the disease and repeat encounters can be additive. There are two main classes of intestinal parasites, they include protozoa and helminths. The protozoa typically have two stages; the trophozoite stage that is the metabolically active, invasive stage and the cyst stage, which is the vegetative inactive form resistant to unfavorable environmental conditions outside the human host. Helminths are large, multicellular organisms. Like protozoa, helminths can be either free-living or parasitic in nature. In their adult form, helminths cannot multiply in humans. In general, acute manifestations of parasitic infection may involve diarrhea with or without mucus and or blood, fever, nausea, or abdominal pain. However these symptoms do not always occur. Consequently, parasitic infections may not be diagnosed or eradicated. If left untreated, chronic parasitic infections can cause damage to the intestinal lining and can be an unsuspected cause of illness and fatigue. Chronic parasitic infections can also be associated with increased intestinal permeability, irritable bowel syndrome, irregular bowel movements, malabsorption, gastritis or indigestion, skin disorders, joint pain, allergic reactions, and decreased immune function. In some instances, parasites may enter the circulation and travel to various organs causing severe organ diseases such as liver abscesses and cysticercosis. In addition, some larval migration can cause pneumonia and in rare cases hyper infection syndrome with large numbers of larvae being produced and found in every tissue of the body. One negative parasitology x1 specimen does not rule out the possibility of parasitic disease, parasitology x3 is recommended. This test is not designed to detect Cyclospora cayetanensis or Microsproridia spp.

GIARDIA/CRYPTOSPORIDIUM IMMUNOASSAY

	Within	Outside	Reference Range
Giardia duodenalis	Neg		Neg
Cryptosporidium	Neg		Neg

Giardia duodenalis (AKA *intestinalis* and *lamblia*) is a protozoan that infects the small intestine and is passed in stool and spread by the fecal-oral route. Waterborne transmission is the major source of giardiasis.
Cryptosporidium is a coccidian protozoa that can be spread from direct person-to-person contact or waterborne transmission.

He had no growth of E. coli, Lactobacillus, or Enterococcus on the stool test, so there is insufficiency dysbiosis there. He had 1+ for alpha and gamma hemolytic strep and Klebsiella pneumoniae in the commensal column, but then he had moderate fungal overgrowth. Now, we add this to the SIBO breath test, and I'm pretty certain there is a GI issue, and I would definitely treat.

Comprehensive Stool Analysis / Parasitology x3

DIGESTION /ABSORPTION

	Within	Outside	Reference Range
Elastase	> 500		> 200 µg/mL
Fat Stain	Mod		None - Mod
Muscle fibers	None		None - Rare
Vegetable fibers	Rare		None - Few
Carbohydrates	Neg		Neg

Elastase findings can be used for the diagnosis or the exclusion of exocrine pancreatic insufficiency. Correlations between low levels and chronic pancreatitis and cancer have been reported. **Fat Stain:** Microscopic determination of fecal fat using Sudan IV staining is a qualitative procedure utilized to assess fat absorption and to detect steatorrhea. **Muscle fibers** in the stool are an indicator of incomplete digestion. Bloating, flatulence, feelings of "fullness" may be associated with increase in muscle fibers. **Vegetable fibers** in the stool may be indicative of inadequate chewing, or eating "on the run". **Carbohydrates:** The presence of reducing substances in stool specimens can indicate carbohydrate malabsorption.

INFLAMMATION

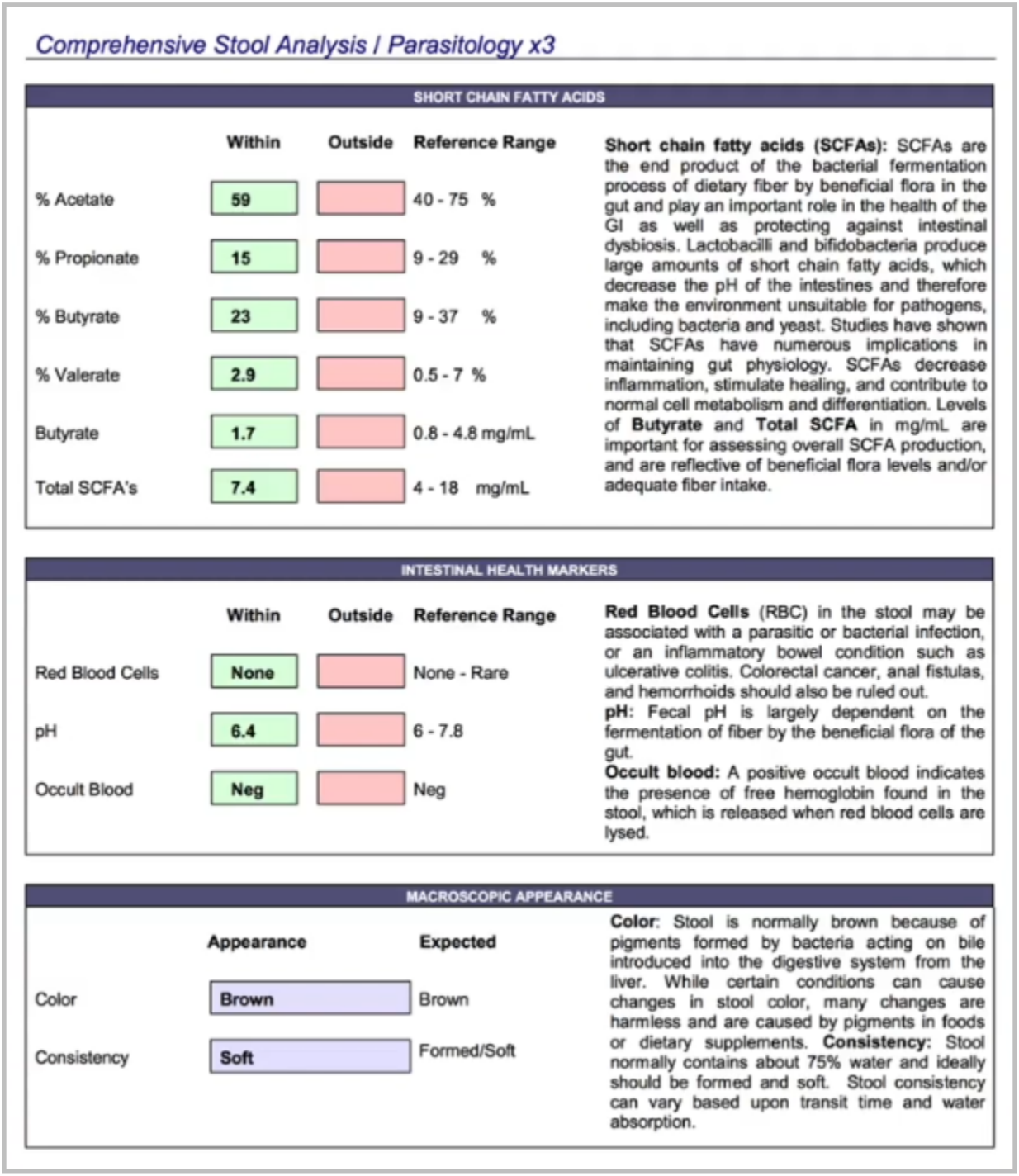
	Within	Outside	Reference Range
Lactoferrin	< 0.5		< 7.3 µg/mL
Calprotectin*	< 10		<= 50 µg/g
Lysozyme*	311		<= 600 ng/mL
White Blood Cells	None		None - Rare
Mucus	Neg		Neg

Lactoferrin and **Calprotectin** are reliable markers for differentiating organic inflammation (IBD) from function symptoms (IBS) and for management of IBD. Monitoring levels of fecal lactoferrin and calprotectin can play an essential role in determining the effectiveness of therapy, are good predictors of IBD remission, and can indicate a low risk of relapse. **Lysozyme*** is an enzyme secreted at the site of inflammation in the GI tract and elevated levels have been identified in IBD patients. **White Blood Cells** (WBC) and **Mucus** in the stool can occur with bacterial and parasitic infections, with mucosal irritation, and inflammatory bowel diseases such as Crohn's disease or ulcerative colitis.

IMMUNOLOGY

	Within	Outside	Reference Range
Secretory IgA*		932	51 - 204 mg/dL

Secretory IgA* (sIgA) is secreted by mucosal tissue and represents the first line of defense of the GI mucosa and is central to the normal function of the GI tract as an immune barrier. Elevated levels of sIgA have been associated with an upregulated immune response.



Comprehensive Stool Analysis / Parasitology x3

SHORT CHAIN FATTY ACIDS

	Within	Outside	Reference Range
% Acetate	59		40 - 75 %
% Propionate	15		9 - 29 %
% Butyrate	23		9 - 37 %
% Valerate	2.9		0.5 - 7 %
Butyrate	1.7		0.8 - 4.8 mg/mL
Total SCFA's	7.4		4 - 18 mg/mL

Short chain fatty acids (SCFAs): SCFAs are the end product of the bacterial fermentation process of dietary fiber by beneficial flora in the gut and play an important role in the health of the GI as well as protecting against intestinal dysbiosis. Lactobacilli and bifidobacteria produce large amounts of short chain fatty acids, which decrease the pH of the intestines and therefore make the environment unsuitable for pathogens, including bacteria and yeast. Studies have shown that SCFAs have numerous implications in maintaining gut physiology. SCFAs decrease inflammation, stimulate healing, and contribute to normal cell metabolism and differentiation. Levels of **Butyrate** and **Total SCFA** in mg/mL are important for assessing overall SCFA production, and are reflective of beneficial flora levels and/or adequate fiber intake.

INTESTINAL HEALTH MARKERS

	Within	Outside	Reference Range
Red Blood Cells	None		None - Rare
pH	6.4		6 - 7.8
Occult Blood	Neg		Neg

Red Blood Cells (RBC) in the stool may be associated with a parasitic or bacterial infection, or an inflammatory bowel condition such as ulcerative colitis. Colorectal cancer, anal fistulas, and hemorrhoids should also be ruled out.
pH: Fecal pH is largely dependent on the fermentation of fiber by the beneficial flora of the gut.
Occult blood: A positive occult blood indicates the presence of free hemoglobin found in the stool, which is released when red blood cells are lysed.

MACROSCOPIC APPEARANCE

	Appearance	Expected
Color	Brown	Brown
Consistency	Soft	Formed/Soft

Color: Stool is normally brown because of pigments formed by bacteria acting on bile introduced into the digestive system from the liver. While certain conditions can cause changes in stool color, many changes are harmless and are caused by pigments in foods or dietary supplements. **Consistency:** Stool normally contains about 75% water and ideally should be formed and soft. Stool consistency can vary based upon transit time and water absorption.

Not much to see here except for quite high sIgA of 932. The upper end is 204, so that is pretty elevated. That may be actually related to the insufficiency dysbiosis because, as you recall, sIgA is kind of the protector, or mother if you will, of the beneficial bacteria.

GI Pathogen Screen with H. pylori Antigen - 401H

Parameter	Result
***** Stool Culture *****	
Preliminary Report	Normal flora after 24 hours
Final Report	* Escherichia coli isolated *
Amount of Growth	Moderate
***** Ova & Parasites *****	
Ova & Parasites #1	No Ova/Parasites detected
Ova & Parasites #2	No Ova/Parasites detected
Ova & Parasites #3	No Ova/Parasites detected
Trichrome Stain	No Ova/Parasites detected
***** Stool Antigens *****	
Cryptosporidium Antigen	Not detected
Giardia lamblia Antigen	Not detected
***** Additional Tests *****	
Fungi	No fungi isolated
C. difficile Toxin A	Not detected
C. difficile Toxin B	Not detected
Yeast	No yeasts isolated
Occult Blood	Not detected
*****Helicobacter Pylori Stool Antigen*****	
H. pylori Antigen	* Detected *

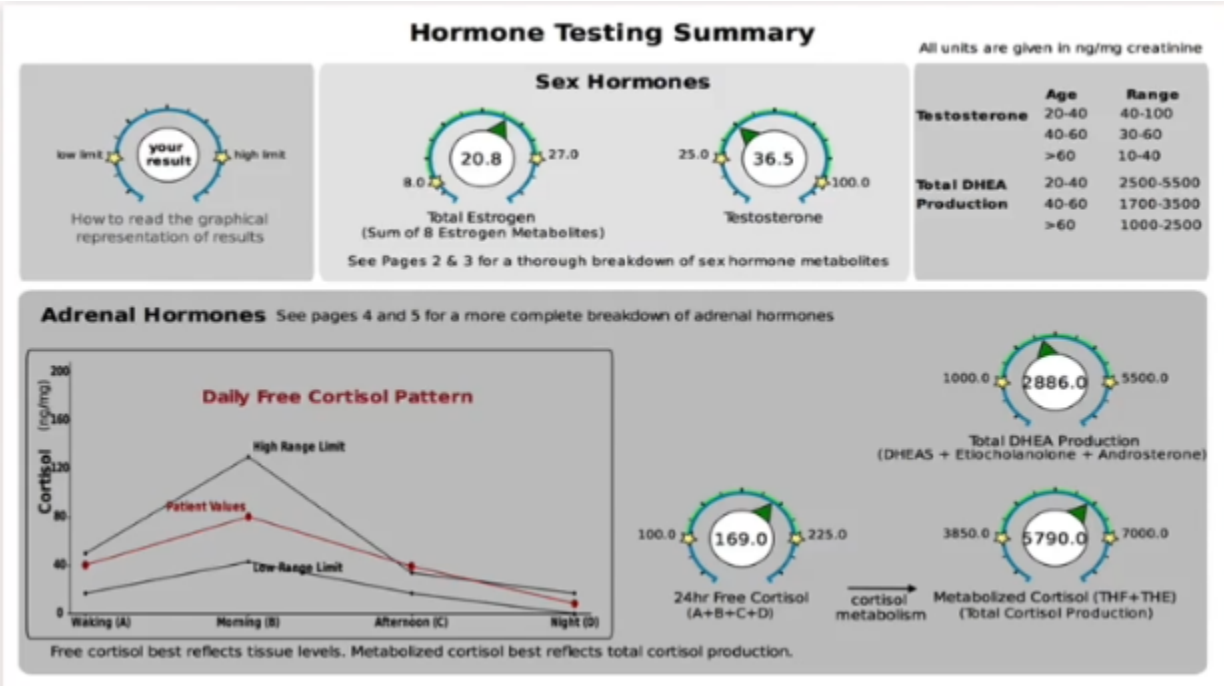
Also, was positive for H. pylori, like the last patient. Note here that there is no fungal overgrowth detected on BioHealth. I do trust the Doctor's Data panel more for this, since they use proteomics, and that is more sensitive for detecting fungal organisms.

TEST	RESULT			
Array 3 – Wheat/Gluten Proteome Reactivity & Autoimmunity	**IN RANGE (Normal)**	**EQUIVOCAL***	**OUT OF RANGE**	**REFERENCE (ELISA Index)**
Wheat IgG	1.16			0.3-1.5
Wheat IgA			1.34	0.1-1.2
Wheat Germ Agglutinin IgG	0.74			0.4-1.3
Wheat Germ Agglutinin IgA	0.69			0.2-1.1
Native & Deamidated Gliadin 33 IgG		1.03		0.2-1.2
Native & Deamidated Gliadin 33 IgA		1.07		0.1-1.1
Alpha Gliadin 17-mer IgG	0.91			0.1-1.5
Alpha Gliadin 17-mer IgA	0.80			0.1-1.1
Gamma Gliadin 15-mer IgG	1.01			0.5-1.5
Gamma Gliadin 15-mer IgA			1.60	0.1-1.0
Omega Gliadin 17-mer IgG		1.05		0.3-1.2
Omega Gliadin 17-mer IgA	0.80			0.1-1.2
Glutenin 21-mer IgG			2.47	0.1-1.5
Glutenin 21-mer IgA			1.55	0.1-1.3
Gluteomorphin + Prodynorphin IgG	0.65			0.3-1.2
Gluteomorphin + Prodynorphin IgA	0.56			0.1-1.2
Gliadin-Transglutaminase Complex IgG	0.88			0.3-1.4
Gliadin-Transglutaminase Complex IgA	0.95			0.2-1.5
Transglutaminase-2 IgG	1.00			0.3-1.6
Transglutaminase-2 IgA	0.57			0.1-1.6
Transglutaminase-3 IgG	0.51			0.2-1.6
Transglutaminase-3 IgA	0.56			0.1-1.5
Transglutaminase-6 IgG	0.88			0.2-1.5
Transglutaminase-6 IgA	0.68			0.1-1.5

Uh-oh. Bagels, beer, and breakfast burritos are definitely not doing him any favors. He is reacting clearly to wheat, gamma gliadin, and glutenin, which is the second major protein in the wheat complex. Equivocal reactions to native and deamidated gliadin and omega gliadin. It is very possible that he has celiac. As you recall, Mayo Clinic is using native and deamidated gliadin now as their main screening tool for celiac disease. Yet, this is a perfect example of someone who would probably be missed by the standard laboratory testing for celiac or gluten intolerance, which only measures alpha gliadin. As you can see, he is not producing antibodies to those, but he is definitely producing antibodies to glutenin, which is the other major component of wheat and also to some of the other epitopes of gliadin as well as to the whole wheat protein itself. This is where the Cyrex testing can be very valuable.

TEST	RESULT			
Array 4 – Gluten-Associated Cross-Reactive Foods and Foods Sensitivity **	**IN RANGE (Normal)**	**EQUIVOCAL***	**OUT OF RANGE**	**REFERENCE** (ELISA Index)
Rye, Barley, Spelt, Polish Wheat	0.95			0.4-1.4
Cow's Milk	0.23			0.1-1.3
Casein (Alpha & Beta)	0.60			0.1-1.7
Casomorphin	0.52			0.2-1.6
Milk Butyrophilin	0.83			0.2-1.8
Whey Protein	0.88			0.1-1.3
Chocolate (Milk)	0.64			0.1-1.4
Oats	0.63			0.2-1.0
Yeast			1.28	0.2-1.2
Coffee	1.36			0.3-1.9
Sesame	0.27			0.1-1.3
Buckwheat	0.64			0.4-1.3
Sorghum	0.51			0.3-1.2
Millet		1.19		0.3-1.5
Hemp	1.08			0.3-1.5
Amaranth			1.47	0.2-1.3
Quinoa	0.60			0.5-1.5
Tapioca	0.69			0.1-1.1
Teff			1.40	0.2-1.1
Soy	0.81			0.5-1.5
Egg	1.12			0.2-1.7
Corn		1.31		0.3-1.4
Rice	0.69			0.4-1.6
Potato	0.57			0.6-1.4

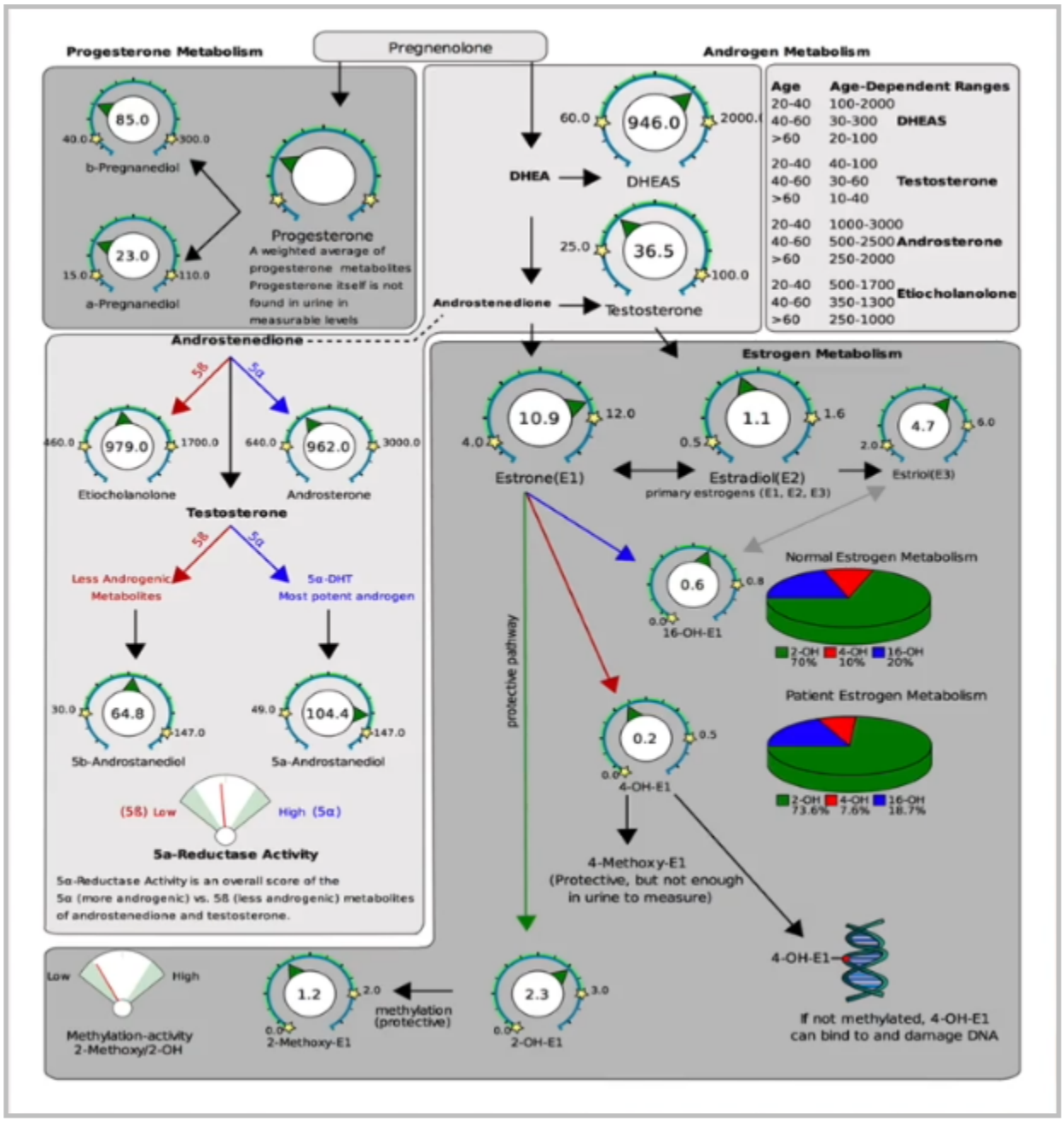
He is also reacting to yeast, which makes beer and bread not a good thing for him, as well as amaranth and teff, and equivocal antibodies to millet and corn.



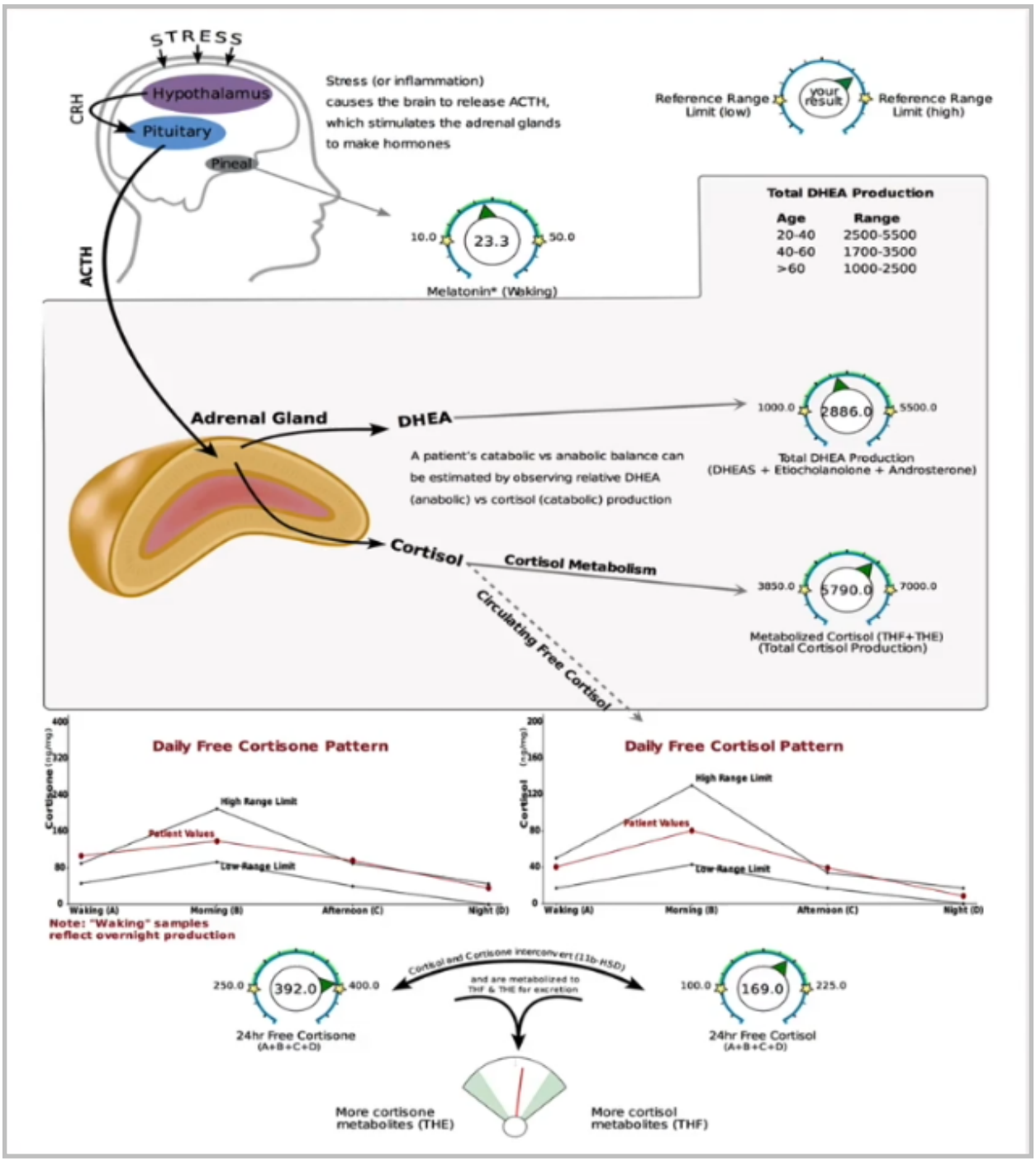
Category	Test		Result	Units	Normal Range
Progesterone Metabolism					
	b-Pregnanediol	Low end of range	85.0	ng/mg	40 - 300
	a-Pregnanediol	Low end of range	23.0	ng/mg	15 - 110
Androgen Metabolism					
	DHEAS	Within range	946.0	ng/mg	60 - 2000
	Androsterone	Low end of range	962.0	ng/mg	640 - 3000
	Etiocholanolone	Within range	979.0	ng/mg	460 - 1700
	Testosterone	Low end of range	36.5	ng/mg	25 - 100
	5a-DHT	Below range	6.8	ng/mg	9 - 16.7
	5a-Androstanediol	Within range	104.4	ng/mg	49 - 147
	5b-Androstanediol	Within range	64.8	ng/mg	30 - 147
	Epi-Testosterone	Within range	83.1	ng/mg	25 - 100
Estrogen Metabolites					
	Estrone(E1)	High end of range	10.9	ng/mg	4 - 12
	Estradiol(E2)	Within range	1.1	ng/mg	0.5 - 1.6
	Estriol(E3)	Within range	4.7	ng/mg	2 - 6
	2-OH-E1	Within range	2.3	ng/mg	0 - 3
	4-OH-E1	Within range	0.2	ng/mg	0 - 0.5
	16-OH-E1	Within range	0.6	ng/mg	0 - 0.8
	2-Methoxy-E1	Within range	1.2	ng/mg	0 - 2
	2-OH-E2	Within range	0.37	ng/mg	0 - 0.5

DUTCH panel results were pretty good overall. Free cortisol is a little high in the afternoon, but total free cortisol and total metabolized cortisol and DHEA were normal, as were estrogen and testosterone.

Category	Test		Result	Units	Normal Range
Creatinine					
	Creatinine A (Waking)	Within range	1.22	mg/ml	0.3 - 3
	Creatinine B (Morning)	Within range	0.8	mg/ml	0.3 - 3
	Creatinine C (Afternoon)	Within range	0.64	mg/ml	0.3 - 3
	Creatinine D (Night)	Within range	1.46	mg/ml	0.3 - 3
Daily Free Cortisol and Cortisone					
	Cortisol A (Waking)	Within range	40.4	ng/mg	17 - 50
	Cortisol B (Morning)	Within range	80.4	ng/mg	43 - 130
	Cortisol C (Afternoon)	Above range	39.4	ng/mg	17 - 34
	Cortisol D (Night)	Within range	8.5	ng/mg	0 - 17
	Cortisone A (Waking)	Above range	106.8	ng/mg	46 - 90
	Cortisone B (Morning)	Within range	139.1	ng/mg	93 - 210
	Cortisone C (Afternoon)	Above range	96.3	ng/mg	40 - 90
	Cortisone D (Night)	Within range	35.8	ng/mg	0 - 45
	24hr Free Cortisol	Within range	169.0	ug	100 - 225
	24hr Free Cortisone	High end of range	392.0	ug	250 - 400
Cortisol Metabolites and DHEAS					
	a-Tetrahydrocortisol (a-THF)	Below range	174.0	ng/mg	220 - 720
	b-Tetrahydrocortisol (b-THF)	Above range	2407.0	ng/mg	1330 - 2330
	b-Tetrahydrocortisone (b-THE)	Within range	3209.0	ng/mg	2100 - 4000
	Metabolized Cortisol (THF+THE)	Within range	5790.0	ng/mg	3850 - 7000
	DHEAS	Within range	946.0	ng/mg	60 - 2000
Melatonin (*measured as 6-OH-Melatonin-Sulfate)					
	Melatonin* (Waking)	Within range	23.3	ng/mg	10 - 50



Free cortisol and free cortisone are normal here, and again, metabolites were normal. Melatonin was normal, so not a lot going on. This does support his report that he has a fairly low-stress life.



The only issue here is what I mentioned, slightly high free cortisol, free cortisone in the afternoon, but it is unlikely to be clinically significant. It's just barely elevated, although if you look at his total free cortisone, it is almost out of the range. Remember, we just use free cortisone as a way to kind of bias the cortisol result in one direction or another. His free cortisol is normal, but it is toward the higher end of the range. Then, if his free cortisone is high or almost high, then that would make me sort of bump the free cortisol up a little bit. The metabolized cortisol is also towards the upper end

of the range. Definitely nothing really significant here, but if anything, he is moving towards a high cortisol state. That is something that you could potentially address.

CALIFORNIA CENTER *for*
FUNCTIONAL MEDICINE

CASE REVIEW REPORT OF FINDINGS

Patient Name: "Bill" **Date:** 9-22-16

Underlying Patterns

PATTERN	SUPPORTING MARKERS	COMMENTS
Dysglycemia	Glucose, A1c, triglycerides, uric acid, ferritin	
Dyslipidemia	TC, HDL, triglycerides	
Impaired methylation	Homocysteine	
Dehydration	RBC, Hgb	
Wheat intolerance (celiac or NCGS)	Cyrex Array 3	
Other food intolerances	Cyrex Array 4	
Vitamin D deficiency	25(OH)D	

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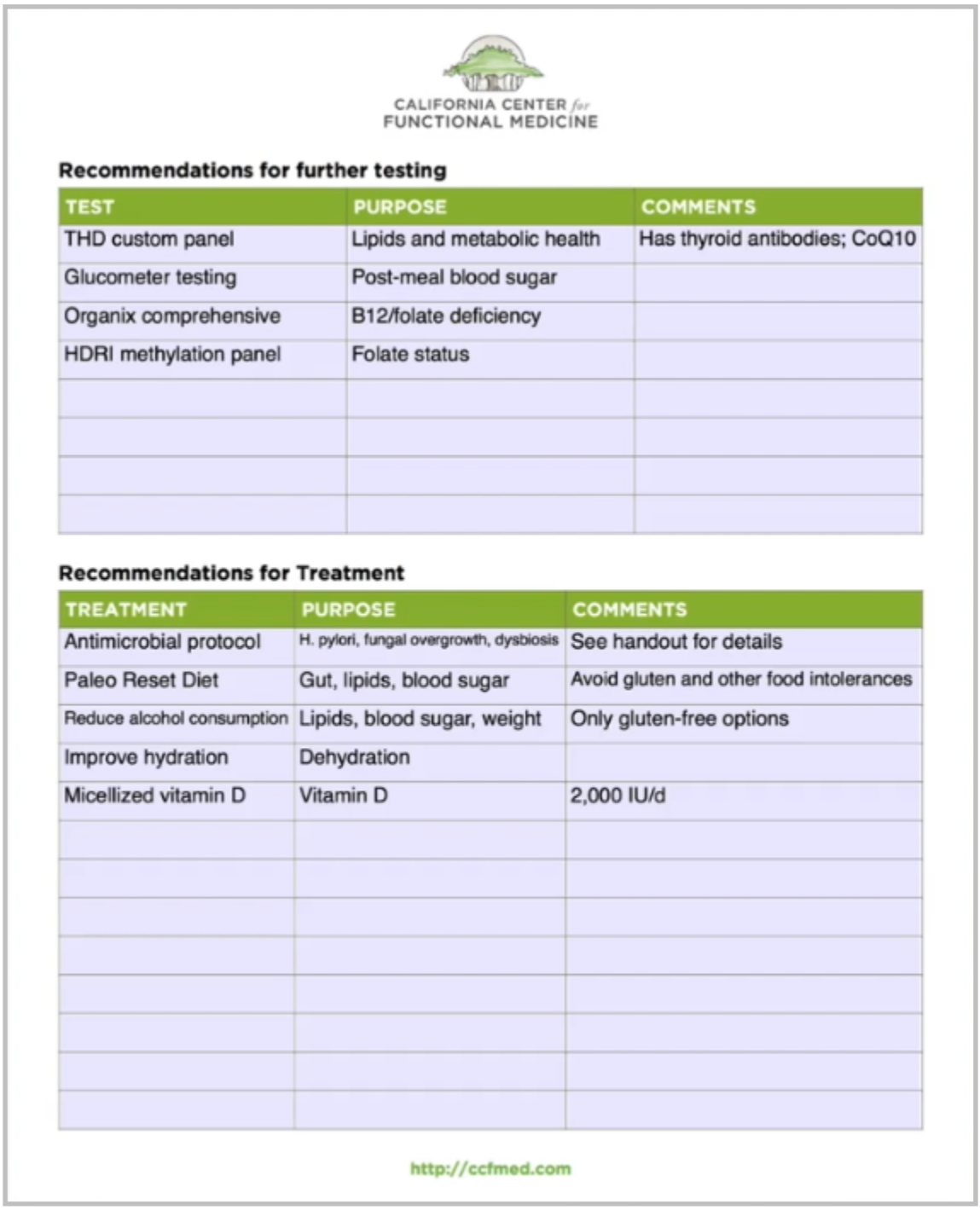

CALIFORNIA CENTER for FUNCTIONAL MEDICINE

Recommendations for further testing

TEST	PURPOSE	COMMENTS
THD custom panel	Lipids and metabolic health	Has thyroid antibodies; CoQ10
Glucometer testing	Post-meal blood sugar	
Organix comprehensive	B12/folate deficiency	
HDRI methylation panel	Folate status	

Recommendations for Treatment

TREATMENT	PURPOSE	COMMENTS
Antimicrobial protocol	H. pylori, fungal overgrowth, dysbiosis	See handout for details
Paleo Reset Diet	Gut, lipids, blood sugar	Avoid gluten and other food intolerances
Reduce alcohol consumption	Lipids, blood sugar, weight	Only gluten-free options
Improve hydration	Dehydration	
Micellized vitamin D	Vitamin D	2,000 IU/d

http://ccfmed.com

Here is his report of findings. Dysglycemia with the glucose, A1c, triglycerides, uric acid, and ferritin. Dyslipidemia: Again, that is because the total cholesterol is out of whack, but his HDL and triglycerides are as well, which distinguishes it from hypercholesterolemia that we talked about with the last case. Impaired methylation because of the high homocysteine. Dehydration: the red blood cells and hemoglobin. Wheat intolerance, either celiac or non-celiac wheat sensitivity. We don't know yet. Whether or not to go on and do additional testing for celiac depends entirely on the patient's response to this. If their response is "Oh, wow. I'm going to completely cut out wheat

and gluten from my diet," then I don't really see much additional value in testing for celiac, if they are willing to be strict about it. If they are still not really convinced, and they think non-celiac wheat sensitivity is kind of a fad diagnosis, then I would definitely do additional workup for celiac because this patient needs to be convinced that he should not be eating wheat or gluten. Also, other food intolerances from Cyrex Array 4 and vitamin D deficiency.

For follow-up testing, I would do the True Health Diagnostics* custom panel, additional info on lipids and metabolic health. I would look at glucometer testing for post-meal blood sugar. I would do Organix comprehensive urine, which we didn't have for him, to look at FIGLU and MMA. I would do an HDRI methylation panel for more info on folate and methylation status.

<* **Note:** *True Health Diagnostics is no longer in business. See* **this post** *for the latest updates.*>

For treatment, we would do an antimicrobial protocol to get the H. pylori, fungal overgrowth, and dysbiosis. I would keep him on a Paleo reset diet throughout the protocol and because of the gluten stuff, significantly reduce or eliminate alcohol consumption, if he is willing to cut it out altogether, just confirming that he did that for the reset, which doesn't include alcohol. Improve his hydration because of the dehydration markers, and then give him some vitamin D support. He was already taking cod liver oil, but that wasn't enough given his vitamin D level, so I added some micellized vitamin D on top of the cod liver oil he was already taking.

Antimicrobial protocol

Nutreceutical	Dosage
GI Synergy	1 packet BID (with breakfast and dinner)
Lauricidin	1 scoop TID with each meal
Interfase Plus	3-4 capsules BID on empty stomach
Prescript Assist	One BID upon rising and before bed
MegaSporeBiotic	One capsule with lunch
Broccomax	One BID 30 min before breakfast and dinner
Saccharomyces boulardii	3-4 billion CFU BID at lunch and before bed

Here is the antimicrobial protocol I prescribed for him. It is exactly the same as the protocol for the last patient. Core protocol plus BroccoMax for H. pylori and S. boulardii for H. pylori and fungal overgrowth. Again, if it is not successful, you could try the mastic gum and cranberry juice before going on to pharmaceuticals for H. pylori.

Okay, thanks for listening. We will be back with a couple more case reviews next week.