ADAPT PTP Functional Medicine Q&A with Tracey O'Shea

Monday, February 1, 2021

1. Do you mind talking about what we're currently doing for stool testing? (1:56)
2. Do you have protocols for food poisoning that could help prevent the likelihood of it triggering [irritable bowel syndrome] (IBS), both acute and post? (7:46)
3. Have you tried the new Trio-Smart [small intestinal bacterial overgrowth] (SIBO) breath test? This one adds hydrogen sulfide in addition to hydrogen methane. If so, what are your thoughts? (12:01)
4. [My patient is a] 38-year-old female. [She's a] mother of a three-and-a-half-year-old with insomnia. [She] falls asleep early exhausted. [She] wakes very early [at] 2 to 3 a.m. and cannot get back to sleep for two to three hours. [She] seems to be resistant to all sleep support as far as herbs and supplements. Test results are in. [Her] 24-hour cortisol looks good, [the] pattern looks great, but metabolized is low, 145 free, 2970 metabolized. Progesterone looks good, testosterone is at the bottom of the range, [and] E1, E2, and E3 are all at or below range. [Her] 16 OH is low, 14 OH is high, and 2 OH is at the top of the range. Methylation [is] low [and] melatonin [is] good. Cortisone preferred and high end of [the] range for oxidative stress. (18:18)
5. What do you think about giving Maca like Femmenessence and (nengivdem? 31:29)? (31:29)
6. That's interesting that the hydrogen and methane are positive with the positive hydrogen sulfide. I thought I remembered that hydrogen sulfide may cause methane and hydrogen to be near zero. This isn't always the case then. Or does that potentially point to another reason to consider [a] false positive? (35:45)
7. [A] 42-year-old female [patient with] GI-MAP results. So we're talking about GI-MAP. [She has a] history of [*Helicobacter pylori*] (*H. pylori*) treated herbally. Currently, the *H. pylori* is still high on [the] GI-MAP. High *Akkermansia*, Firmicutes, and *Bacillus*. *Dientamoeba* and *Endolimax*, so two parasites. High secretory [immunoglobulin A] (IgA) at 981. Anti-gliadin of 104. [Her] chief complaint is [the] inability to eat off of her restrictive diet. Recent blood work showed borderline anemia; [she] also complains of pinworm. [Her] symptoms haven't responded to over-the-counter stuff for six weeks [on a] strong herbal protocol. (40:58)
8. [Is] Alinia [a] treatment for pinworm? (57:41)

Tracey O'Shea: All right. Hello, everybody. I am going to give everyone a couple [of] minutes to join the call. It takes a little bit of time sometimes to get everyone going. Just a heads up, I

don't have any presubmitted questions today that I was able to find. So I won't be covering anything that anyone submitted ahead of time because those are there. Just a reminder that if you do have questions that I'm not answering throughout the week as you're sending them through, you're welcome to submit those questions ahead of time for our discussion today. But otherwise, you are able to put those in the Q&A section, if you have any questions about the curriculum or case studies or anything that comes up.

I'm trying to think if I have any updates for you, while everyone is putting questions in. We're working on updating lesson six with the stool companies, the different gut stool tests that we are using. So I'm hoping that will be out within the next few weeks. I'm also updating all the SIBO information to reflect the Trio-Smart test with the hydrogen sulfide testing from Dr. Pimentel. And some of the initial recommendations for treatment for hydrogen sulfide-predominant SIBO.

Yeah, and we have a question about, "Do you mind talking about what we're currently doing for stool testing?"

Yes, [I'm] happy to talk about this. This is alluding to me updating lesson six for stool and gut testing. It's a little tricky. As you know, it's an ever-evolving process. And we're constantly trying to stay on top of the technology and the information. But I would say at this point, we were using [the] GI-MAP for about a year, year and a half. And we have just recently switched over and are trying Genova GI Effects stool test.

We did a bunch of split samples in [the] clinic, and I think that the results were helpful, from a perspective of [comparing the] GI-MAP to itself. So we did [a] split sample [of] [the] GI-MAP, GI Effects, and also the Doctor's Data GI360. And you know what? It was variable. I think for the most part, most of them are reproducible and the results were pretty good. But again, I think it's important to consider that even when we're still collecting within the same stool sample, there's also variability within that stool sample. So doing split samples, I think, is not super straightforward when interpreting data. But that's what we were able to do from a clinic perspective.

So we were using [the] GI-MAP, which I think is good. As a reminder, the GI-MAP is DNA [polymerase chain reaction] (PCR). So it's helpful because it is very reliable. I think that we get really good results as far as the detectability of how much is there. The concern is, are we [at] a place where we can use DNA PCR to really reflect abundance? So even if there's 4.3 E to the two there, what's the real level of abundance within the entire microbiome? We're working with a research scientist on this to try to figure out how best to use that information. But the question always for us is just because there's a little tiny bit of DNA material within the stool, does that really reflect disease? And what to do with that information and how to treat [it]. For example, I think like 90 percent of the people that we do a GI-MAP stool test on have some level of *H. pylori* in the stool. It's a pretty high percentage of people. We may do an [enzyme immunoassay] (EIA) stool test after to confirm or do a breath test. And I would say the majority

of the time that we do a second test, those are negative. So in those settings, we're having to decide what do the intestinal health markers look like? Is their elastase low, is their secretory IgA impacted, [and] is there inflammation? What else is happening within the gut that could maybe help give us some information about whether we should treat *H. pylori* or not?

And in the setting of the GI-MAP, when there [are] other imbalances and other infections, and we're going to do an antimicrobial protocol anyway, great. Maybe I'll throw a little bit of supplements and herbs in there to address the *H. pylori* specifically. In that presence where I just, I have a little bit of [a] question about the use of the DNA PCR stool testing, when that's all that's being used. So, we have slowly moved away from [the] GI-MAP just in the last couple [of] months, because we're trying to see if we can utilize different testing companies that have a variety of culture[s], plus DNA PCR.

So right now, we're trialing [the] Genova GI Effects stool test. And so far, so good. I think we all have personal preferences. I don't know that I'm in love with the way that the report is written. It's not as user friendly. But yeah, in a long answer to your question, we're currently doing [the] Genova GI Effects. We were doing [the] GI-MAP. And the lesson six updates will reflect that information and I'm going to give you some information about GI-MAP, Genova, and Doctor's Data [GI]360, the pros and cons of all of them, and then where we've kind of ended up. I imagine this will continue to evolve because I think there is no perfect stool test yet. And we still have to make clinical decisions based [on] that. So I hope that helps answer [your question]. I know it's not super clear. But as of right now, that's what we're doing, the GI Effects and then I will probably do an *H. pylori* breath test, because *H. pylori* is not included on the GI Effects. Or I'll do an add-on EIA stool *H. pylori* test. It really just depends on the patient and their insurance, and what their symptoms are. And so there [are] some variables about deciding. But for right now, we are ordering the GI Effects.

We also just did a split sample between [the] Genova GI Effects and the Gut Zoomer [from Vibrant Wellness]. So [there's] more to come on all of that. It's still a little bit up in the air, but at least that gives you some idea of what we're doing clinically.

Okay, [the] next question is, "Do you have protocols for food poisoning that could help prevent the likelihood of it triggering IBS, both acute and post?"

Well, I guess it depends on what you mean by a protocol. I think that we're talking about a couple [of] different things. One is, if I know someone's traveling, and I know that food poisoning doesn't just happen when we travel. I'm very aware that this could happen on a regular basis. But I think statistically, it's more likely to happen in an environment that's outside of your normal environment.

So what I will usually do though, is, preemptively, if I know people are going to travel or I know my patients are going to travel, I will send them with GI-Synergy, some Mega IgG or MegaMucosa, some charcoal, like a binder of some sort. So I will preemptively have them take

that with them so if they do develop any symptoms of food poisoning, they can start it immediately. And I think that my theory behind that is, and I would have to be honest with you that I haven't done the deep research if this makes a difference, it just feels like it makes sense from a pathos standpoint, is that if we can interrupt that process before the endotoxins start to cause that autoimmune process in the small intestine or start to trigger the infectious process leading to IBS and these acute and post issues, then maybe just the timing of that and how quickly we're able to address the infection and get binders in there and try to work on the impact of the endotoxin. So that's my approach for someone who I know is traveling where, statistically, their likelihood of getting food poisoning is increased.

Now if someone messages me just daily stuff, run-of-the-mill things, and they think they've had food poisoning, I'm likely to do a very similar process. However, it's a little tricky if they don't already have those supplements on hand. So I will usually try to use whatever they can get from Amazon within two days. It really just depends on what's available. I might use something like the Biocidin liquid, and charcoal or any other kind of binder that they can get also quickly. And then I will do probably a two- to three-week protocol where I'm doing an antimicrobial, a binder, some Mega IgG, or some immunoglobulin support. And then [after that], I will also do supportive more from [the] perspective of gut lining support, maybe even some autoimmunity support.

And I honestly haven't had this happen too often, to be quite honest. But that's probably what I would do is do at least a three-week antimicrobial protocol with support, and then follow up with a gut-rebuilding restorative protocol. I might do the Restore liquid or I think it's called [GI Revive]. They've changed their name. And some like marshmallow root, some of those more gut-stabilizing pieces. I'll probably continue with the Mega IgG, or like a MegaMucosa, or something with immunoglobulins in it, helping with immune function. So that's probably what I would do for food poisoning, if it were me or if it were my patient.

But I think it's really important preventively if you have people that you're already seeing, it's something that I will often tell them. If I've already treated them for gut issues, I'll say, "Keep this on hand if you're going to travel so that you have it, [just in case]." I think it really has saved a lot of people.

Next question is, "Have you tried the new TrioSmart SIBO breath test? This one adds hydrogen sulfide in addition to hydrogen methane. If so, what are your thoughts?"

Yes, we have just started using the Trio-Smart breath test probably [in] the last couple [of] months, maybe six weeks or maybe a little longer. But we have just started to get lab results back probably in the last four weeks or so. So we're still taking in all of the information. And I plan to also update this in the lesson seven curriculum pretty soon. But again, it's really still very early on, so it's hard to make any clear clinical interpretations. But I like the test; I like that we have a hydrogen sulfide option. The tricky part is that you have to send a lactulose prescription to the pharmacy for [the patient] to pick up. So that's one thing that's a little less

convenient for the patient is that the lactulose doesn't come in the breath test. But it seems to have worked okay. We just send a prescription out and they're able to get it. Although I don't know how that works if you don't have prescribing abilities. So I don't know if that's a limitation for some people who don't have prescriptive authority. I haven't really looked into it just yet.

But I would say that I like the test. I think it's nice to have the hydrogen sulfide piece. And some of the questions that I have, and just out of transparency, Chris and I have talked about this, is I think that I've had only one patient come back with a negative hydrogen sulfide result. So I think there [are] some questions for me there. It might be a little unfair, because in all reality, we have a different subset of people who are symptomatic, and who were testing for a reason. So does that create a little bit of a shift in the statistical result, but I think that I do have some questions about that, because every single person almost has had positive hydrogen sulfide results. And I think most of the time they have been at max, like at 10 or more, I think, is the cutoff. And five or higher is, I'm trying to remember, five or higher, I think is a positive result. So I still have questions about the test.

And Chris might have asked him a little bit about this in his most recent podcast; I haven't looked at it just yet. But those were some of our questions: why so many positive hydrogen sulfide tests among all of the results? It just seems a little strange. But I would say that it still gives us the hydrogen and methane results well. That seems to track nicely. So really, if I'm choosing, I'm still probably going to choose the Trio-Smart test because I'm still getting what I need from the hydrogen and the methane. And then I'm also getting this additional hydrogen sulfide report, which maybe there's some questionability of the sensitivity of that test and the likelihood of it being positive and high for everyone. But either way, I'm still treating if I have a hydrogen or methane result. If it's only hydrogen sulfide, so far, I am trying to use clinical judgment there with what are the person's symptoms? What does their stool test look like? Are there other things that are already still pointing in the direction of hydrogen sulfide SIBO? And am I going to treat [it] anyway with an antimicrobial protocol?

I don't think I have come across anyone who has had a positive hydrogen sulfide case. And that is the only thing that they had, and they had no other gut symptoms, and no other stool test results. So that hasn't happened just yet. But yeah, I think we're still figuring it out. But so far, the ease of getting the test is pretty nice. The results come across nicely. The methane and hydrogen results are good and consistent with what we're seeing with other tests. We have not done any side-by-side tests yet with that.

Okay, let me just look at the chat thing over here. Yeah. Okay, Eric, no problem. Let me read. This is a case study example. So we have a 38-year-old female mother. [I'll] just move my screen here. So we have **"A 38-year-old female. [She's the] mother of a three-and-a-half-year-old with insomnia. [She] falls asleep early exhausted. [She] very early [at] 2 to 3 a.m. and cannot get back to sleep for two to three hours."** I just want to clarify Eric. Is this the mom that has insomnia and isn't sleeping? Okay. All right. I wasn't sure if we were talking about the kid. Because they could probably both be in that realm. Okay, so [a]

38-year-old female has a three-and-a-half-year-old kid. But the mom is dealing with insomnia. [She falls] asleep early exhausted, [and] wakes up very early [at] 2 to 3 a.m. and cannot get back to sleep for two to three hours. **"[She] seems to be resistant to all sleep support as far as herbs and supplements. Test results are in. [Her] 24-hour cortisol looks good, [the] pattern looks great, but metabolized is low, 145 free, 2970 metabolized."** That's good. **"Progesterone looks good, testosterone is at the bottom of the range, [and] E1, E2, and E3 are all at or below range. [Her] 16 OH is low, 14 OH is high, and 2 OH is at the top of the range. Methylation [is] low, [and] melatonin [is] good. Cortisone preferred and high end of [the] range for oxidative stress."**

All right. So it sounds like I'm assuming the primary complaint and goal is for sleep and fatigue. I'm just trying to look here. DUTCH results, so total production is good. Metabolize is a little on the low end. Pattern looks good. I'm curious if she has normal cycles. The estrogens are in the low range. If estrogens are [in] the low range, but the 4 OH is slightly high, then we're having estrogen metabolism that's going down the wrong pathway. So she took this during her luteal phase, and her cycles are pretty normal, then the question would be why are her estrogens below range and on the low end? I would probably, yeah, [the] test was [on] day 21. So I would probably, in this case, I don't know if the hormones are driving this or not. I do find, at least in my experience, women especially who have kids and are working and have all these big stressors, I mean, we all have that, but, in particular, I find that with women who are waking up between that 2 to 4 a.m. hour, in my experience tends to either be cortisol, this cortisol rush, or hormone related.

A lot of times, [for a] 38-year-old, that's a little early to be going into menopause, I think, and it looks like all her other levels are fairly normal. What I may do is recheck hormones with serum. So do a different cycle from a different month and recheck hormones, using serum, just to double-check.You know what your metabolism is looking like and testosterone is, at least in my experience, urinary testosterone is not really a very good indicator of testosterone status. So I really like to see serum for that, although I don't think it's as big of a problem for her. But melatonin [is] good, cortisone preferred, I mean, there does at least appear if we have a preference for cortisone, and have low normal total metabolized cortisone, we have higher on the oxidative stress range, the question is then what is driving this kind of inflammatory state and this conversion of cortisol to cortisone? And I think that, in this case, I would be asking, what else is going on with her? Is it really just a matter of environmental stressors and situations? And could we do a stress survey and see where she's at on that spectrum? And could it really help more from a perspective of some of the stress management, meditation, [eye movement desensitization and reprocessing] (EMDR), some of those more nervous system regulation pieces.

You could try to support cortisol. It's a little tricky here, because her pattern looks good. But the levels are just, I think I'm interpreting this is the levels are just a little on the low end. So you could try something like a Vital Adapt, or some adaptogens, to see if you can boost those levels a little bit. I'm just trying to think for sleep, it sounds like you've tried everything. Every

once in a while, I will, if I see that a patient is really struggling and just at their end, sometimes I will use Unisom, or something of that nature, like a diphenhydramine, just to try to reset the sleep/wake cycle. So this may be, not everyone may agree with it. But Chris and I have done this before and I have found it to work really well. It's used like an over-the-counter Unisom type just for three days to try to reset and see if it will keep them asleep. And sometimes that will help reset [the] circadian rhythm. So I would try and push on the cortisol a little bit, maybe try the Unisom from a perspective of trying to reset that system.

I'm assuming you've already tried slow-release melatonin at lower doses like 300 micrograms. There's a slow-release melatonin that you could try. I'm assuming you've also tried CBD in either capsule form, which is a slower release, and usually at much higher doses than we think needs to be given. So those might be things to consider and try. [It] doesn't sound like her kid is waking up and that is pushing that. That's what I would look at, and then "tends to wake extremely groggy whenever [she] takes any sleep support." Well, yeah, you may try then the Vital Adapt or cortisol support during the day, you know what I mean? So she's not taking it before bed, obviously. And then try a much lower dose [of] melatonin with the slow release, like 300 micrograms. See if she has better tolerance to that or not, or trial and error. Maybe not the slow release if she's groggy, but I haven't really had that low dose cause a lot of problems in people, but still, I know people are a little bit more sensitive. And then I would do serum hormones just to check in on those and see what's happening with the other levels, maybe try some things for inflammation, assuming that there is some inflammation going on.

[You] could check thyroid [levels]. Yeah,definitely, if you haven't done a full comprehensive blood panel, I would. Checking vitamin D, thyroid, nutrient levels, making sure C-reactive protein, looking at other possibilities of things that can drive the sleep/wake cycle. I'm just trying to think. Normally, my approach is still to address the gut, make sure that that is all good. Make sure that there [aren't] any infections or any pieces, assessing for heavy metals at some point, might not be a bad idea. I definitely think ruling out all of those bigger pieces, supporting the cortisol, double-checking the hormones, continuing to try different combinations of supplements. I know that's tricky since she's already really sensitive and really groggy. And then for sure, maybe trying some nervous system treatments and some either EMDR or is there any trauma in her life, too? You could get an [Adverse Childhood Experiences] (ACE) questionnaire and make sure there isn't any place for somatic experiencing, or bodywork therapy that can help with that. "Acupuncture is helping." Okay, that's good.

I think you're on the right track. I would just start to figure out the things that you still want to rule out. So figure out the things that you still want to assess. If you haven't looked at thyroid, for sure, look at thyroid, look at vitamin D, maybe look at a little bit more of her methylation markers, since the methylation was a little bit low on the DUTCH; get a homocysteine, at the very least, and [vitamin] B12 and folate. And then you can do a more in-depth panel if you want. So I think you're on the right track. Maybe make a list of things that still could potentially be contributing to inflammation, to this propensity for cortisone versus cortisol, and still keep

trying. I have people who are really sensitive to the supplements. I've just kept chipping away at it, and eventually, we will find something. And I usually find that rotating through those things is better or more effective than just sticking with one the whole time.

So, for instance, I may do an L-theanine one night and then a really low-dose melatonin the next night. And then glycine the next night. You know what I mean? So sometimes, I'll rotate through or try some of those things that aren't sleep supplements, like the L-theanine and glycine, and some of those ones that are a little bit more gentle, that aren't going to knock someone out or have them feel super groggy. So I'm just trying to think [of] anything else that I have on my sleep resource list. [I've used] Tranquility from Natura, liposomal GABA from Quicksilver. Like I said, she's probably used all these things. I'm just giving you some ideas of some of the things that we use. Hypnotherapy can be helpful, like guided imagery with a local practitioner. I know there's not a lot of that available now. Let's see, I'm just trying to look at my list. CogniFit is an insomnia program that I think some people have had benefits from.

So just thinking of some ideas for you. I hope that helps. It's a little tricky to not have the full picture. But that's at least where I would start, given that information.

Yeah, the blood work panel recommendations, I think, are in less than week 30. Let me just double-check. So lesson 30 is the blood chemistry where the blood chemistry panel starts. So I think it's 30 through 37, 38 anyway. It's like eight or nine weeks of different stuff, but you should be able to work through the syllabus and find what you need specifically for that. And then serum hormone testing, I would do total and free estrogen, total and free progesterone, sex hormone binding globulin, total and free testosterone, pregnenolone, and [dehydroepiandrosterone] (DHEA). So those are the ones that I would do to double-check and follow up. And if you are having, this is tricky because it's someone who has high estrogens, but then is, or I'm sorry, someone who has lower estrogens, but then the metabolism of their estrogen is toward a 4 OH, that can be a little tricky because using something like dem or, calcium D-glucarate to try to shift the metabolism of that, we also want to make sure we don't lower overall estrogens.

I would say most of the time, [in] my experience, most of the time I'm targeting someone who's estrogen-dominant, who has really high levels of estrogen, and also their metabolizing toward the 4 OH E1, which is not what we want, obviously. And so sometimes, we can help mitigate that. But it's interesting that if she has normal cycles, and she took this on day 21, truly is there really a question of low estrogen to progesterone based [on] the DUTCH test? But I definitely would double-check with the serum, because a lot of the times I get that DUTCH test back, and then there's some questionability about those results, and I'll double-check with serum and I think I tend to refer to serum. If the serum is normal, then I will use that to make clinical decisions from a perspective of high or low estrogens or progesterones. But I do still use the DUTCH as far as the estrogen metabolism goes.

"What do you think about giving Maca like Femmenessence and (nengivdem? 31:29)?"

Well, I don't know. I have used Maca, or I've used both, different brands and Maca and Femmenessence before, and I have found it like hit-or-miss with whether it helps in all situations. I think I normally use that in premenopausal women more than I use it in menstruating women. Just my experience, not to say that that is right or wrong. It's definitely not something that I [have] a great specialty expertise about. But I think for me, the question would be what are you targeting? What's the goal? I think that we need a little bit more information first. Because if you get the serum hormone levels back and everything looks fine, and it's really just a matter of estrogen metabolism, then I think you might be able to push on that lever a little bit. With dem, I would do really low-level,like probably lower amounts though, since we don't really want to supposedly lower estrogens. But again, you're going to confirm with a serum test. I think the bigger question is what are you targeting? Because if she has a normal cycle, doesn't have any other symptoms of hormone dysregulation, and everything else looks fine on the serum test, well then, what are you targeting specifically?

Is it really just a high normal 4 OH E1? In that case, then maybe it is a little bit more about diving into the detoxification capacity of estrogens and looking at her gut microbiome to make sure that [the] estrobolome piece is working well. So I would probably be a little bit hesitant to do supplements in this case, unless there was something on this serum test that indicated low estrogens to high progesterone. And even then, I might be a little careful if the levels of estrogen are low with a dem. So that's tricky. I don't know, I've just seen Maca in menstruating women mess up their cycles. And so I haven't used that as much. I don't have a perfect answer for you, but I think what I would be asking myself is what's my goal? What is my goal with these supplements? Am I just chasing a high normal 4 OH E1? And everything else is fine, her cycles are fine, there [are] no other symptoms of hormone issues, her serum hormones are fine. I don't know if that's a tree that I would go down right away where I'm just trying to suppress 4 OH E1.

I would reopen the discussion about what is impacting her estrogen metabolism and can I find a deeper imbalance that I can help optimize to get that system to work efficiently. And then the question is, is that a driver for her sleep? Probably not, in my experience, or my guess would be, if all her levels are normal and everything else looks fine, and it's just a matter of a little bit of a high 4 OH E1, that's probably not what's driving her fatigue and her insomnia and her mid-day waking. So you might shift back over to looking at cortisol and other things that could be impacting detoxification. But that's just my thoughts.

All right, let me just see. We have a follow-up question on the Trio-Smart. "That's interesting that the hydrogen and methane are positive with the positive hydrogen sulfide. I thought I remembered that hydrogen sulfide may cause methane and hydrogen to be near zero. This isn't always the case then. Or does that potentially point to another reason to consider [a] false positive?"

Yes, very good point and also my question. So I would say that it's probably, at least the results that we have, it's probably 50/50. So half of the time, it looks like a true hydrogen sulfide-positive case where hydrogen is zero, methane is barely positive, or vice versa. Because, as we know, the methane and hydrogen sulfide are competing with each other to consume hydrogen. So we think if you have one dominant predator, I like how [Dr.] Pimentel explains this, but if you have one dominant predator, then likely the prey is going to be gone or zeroed out. And then the methane, the other predator, won't be as ubiquitous. So yes, that's what I also expect to see. But that is not always the case. So I have had results where there's hydrogen sulfide and hydrogen. I've had hydrogen sulfide and methane. So that does murky that up a little bit. And don't quote me on this, because I'm not 100 percent sure, but I asked Chris to ask Dr. Pimentel during his podcast. And I think that just came out. So I feel bad I haven't listened to it just yet. But I don't know if he tried to clear that up. But the response I got back was, yes, that's the typical case. And that was what we used as a way to try to make some inferences with the old tests when we didn't have hydrogen sulfide available. And that was like the clearest indication and, if it's a spectrum, having that perfect result of hydrogen sulfide high and zero bottomed out methanes and hydrogen, that's the perfect representation of what we would expect to happen with hydrogen sulfide.

But my understanding is it is a spectrum and that's not always 100 percent the case that there [are some in betweens, and depending on where things are in the process of the ratio shifting, that you may still be catching some of that hydrogen there, or some of that competition with the methane. That's the answer I have just based [on] the feedback that I'm getting through Chris and Dr. Pimentel. So that's what I'm going with at this point that yes, it's not a hard and fast rule. Just like maybe it's not a hard and fast rule that methane-predominant causes constipation in every person. As we have seen, it's statistically more likely, but many, many, many times, I have encountered that where someone does not experience constipation, and they have methane. And same with this hydrogen sulfide. At this point, no one has, at least none of my members or patients who have had hydrogen sulfide[-dominant] SIBO, have had this perfect presentation of what hydrogen sulfide-dominant SIBO may look like. There's a couple [of] things scattered in there that may sound like it could be consistent with that presentation. But I really haven't had that many people who just present perfectly with a perfect test. And also, all the characteristics of what we're seeing with hydrogen sulfide, the diarrhea, the sulfur smelling gas, [and] sensitivity to high-sulfur foods.

So, again, I think we're just in this place where we're still figuring it out. And it's a spectrum. We're still learning through clinical experience what makes the most sense. So I hope that helped answer your question. I don't have a perfect answer just yet. But that's where I'm sitting with that interpretation of those results.

All right. Let's see. I think we've got another case study here. We'll try to read this little bit slower so everyone can make sure that they get it. **Okay, so, "[A] 42-year-old female [patient with] GI-MAP results. So we're talking about GI-MAP. [She has a] history of *H. pylori* treated herbally. Currently, the *H. pylori* is still high on [the] GI-MAP. High *Akkermansia*,**

Firmicutes, [and] *Bacillus*. Dientamoeba and endolimax, so two parasites. High secretory IgA at 981." I think that's high. I'm trying to remember the range for [the] GI-MAP. Okay, not high. So normal secretory IgA at 981. "**Anti-gliadin of 104. [Her] chief complaint is [the] inability to eat off of her restrictive diet. Recent blood work showed borderline anemia; [she] also complains of pinworm. [Her] symptoms haven't responded to over-the-counter stuff for six weeks [on a] strong herbal protocol."**

Okay, so [the] primary complaint is restrictive diet, right? So food sensitivities. Every time they try to get off of their restrictive diet, they start to have symptoms that form. So remember, we talked a little bit about this, or I rambled on about it in the beginning is this *H. pylori* thing, and how frustrating it might be. I'm assuming her elastase is normal since you didn't mention it. And I would say, also, just for [the] record, elastase for me on the GI-MAP I think should still be above 500. So even though it's marked normal on [the] GI-MAP, just because it's not less than 200 or whatever they have, I would still say that you can have impaired fecal elastase or pancreatic insufficiency if that number is less than 500. So [that's] just a side note.

So, [you] already treated *H. pylori* herbally. There [are] still some levels of *H. pylori* that are high on the GI-MAP, which, of course, we have questions about. If you talk to [Diagnostic Solutions Laboratory] (DSL), they say yes, it should be treated, especially if it's marked high, and a couple people I've talked to say even if it's below that level. That's for a different discussion. So [she has] two parasites, she's got some *H. pylori*, [and] a little bit of dysbiosis. [Her] secretory IgA is maybe low normal, but not as significantly impacted. It doesn't sound like there [are] any markers of inflammation. Elastase is normal. All other intestinal health markers are normal. Anti-gliadin [is] 104. That's the fecal anti-gliadin, just for everyone's reference, [which] has been added to the GI-MAP stool test, which is hit or miss I think for what we have seen clinically.

When you talk to DSL, the person that I spoke with thinks that anything above 70 is consistent with some sort of immune reactivity to gluten. Now the tricky part is if this person is on a restricted diet, I'm sure that they are probably gluten-free since that is the number one thing that most people take out in the beginning of their restrictive diet journey. So [there are] maybe some question marks here about the 104 anti-gliadin. That might be a rabbit hole that you don't need to necessarily go down, in my experience. I also will see calprotectin high for people who have a high fecal anti-gliadin, and both of those will improve with removal of gluten. Elastase is 441; that's pretty good for this person, I think. Maybe that's a little less indicative to go down the *H. pylori* train.

So this person also complains of pinworm-like symptoms that haven't responded to over-the-counter [treatment] for six weeks. So it sounds like they're on a strong herbal protocol. I think that's what's happening is they're on a protocol now. So the *Dientamoeba fragilis* and *Endolimax nana* are tricky, because I think, as you learned that statistically, people maybe aren't super symptomatic from this. But I have seen patients who have had chronic *Dientamoeba fragilis* issues who get better with them being aggressively treated.

So whenever I see *Dientamoeba fragilis* and *Endolimax nana*, I do sometimes think, what else might be happening? Is this a driver of what they're experiencing? Or what can happen is it can sometimes also be reflective of the resiliency of the gut. So sometimes I'll have people not show up for parasites and then we do the repeat test, and there's a little bit of *Dientamoeba fragilis* and *Endolimax nana*, and/or there's a weird [*Escherichia coli*] (E. coli) thing that popped up, or sugar toxin-producing organism. In those instances, I will usually think, okay, what's going on with the resiliency of this person's gut? It's not necessarily that those are the drivers of disease, but that they are reflective of the inability of the gut immune system to really do its job and protect itself.

So she is not doing super well with this strong herbal protocol, because she really feels depleted. I would tell you what, that if this were my patient, I would probably do Alinia plus carafate. That would probably be my next route. If she's really having a hard time tolerating herbal protocols, it's the second time she's been on one. It's too strong. She's not doing well. You may consider doing Alinia with carafate. Now this is maybe a little bit of an off label, but maybe not, depending on what we're using it for. It's an antiparasitic treatment and it also has shown some efficacy against, Alinia plus carafate is what I was saying. C-a-r-a-f-a-t-e, which is sucralfate. It's for ulcers, basically. But it also has been used for *H. pylori* treatment. So you may be able to get two birds [with] one stone maybe.

So, the treatment for *H. pylori*, and please look this up for clarity [on] UpToDate. We'll probably have some of this for you. But for *H. pylori* treatment, I would do Alinia 1000 milligrams twice daily for two weeks, followed by carafate one gram twice daily for six weeks. So that's the *H. pylori* treatment. You can also use Alinia. I have used it for blastocystis, *Dientamoeba fragilis*, and other parasites of that nature. The treatment for parasites with Alinia is a little bit longer, and the dosing changes a little bit. So I will usually do 21 to 28 days for parasites. Usually 500 milligrams once, twice daily for the first four days, and then we'll go up to 1000 milligrams twice per day for 21 days. So if this were my patient, I would probably do Alinia 1000 milligrams, twice daily, for 21 days, and then the last three weeks. So they would be doing carafate the entire time with that. And then the last three weeks of that six-week protocol would just be carafate by itself, and that's more for the *H. pylori* piece.

And you could, if you wanted to add some *Saccharomyces boulardii* in there just because they're already going to be on some prescription stuff and it does have a little bit of *H. pylori* efficacy against it. That's probably what I would do if this were my patient, because you've done protocols, herbs, [and] she's really having a hard time. There [are] multiple things here that are happening. *H. pylori* and parasites, and you just don't know what is driving this. I would anticipate, in my experience, that, oh the carafate is, I think I already said that. But just in case you didn't get it, I might have said it after the fact, is one gram, twice daily for the *H. pylori* for six weeks. One gram twice daily for six weeks. So I would do that. If they are not already doing some sort of nervous system piece, I know I mention that a lot, but it is probably one of

the biggest pieces that I have found to really help with food sensitivities and restrictive diets after the fact, after you have already treated infections.

And you may want to do a zonulin add-on test with your repeat panel. Just something to consider or the Cyrex 2. I know we've talked about this a little bit where I don't normally use Cyrex 2 that much, because I'm just assuming that, oh, [the] GI-MAP was zero on zonulin. Okay, well, that's good news. Interesting. Yeah, I think I would still go after the parasites and the *H. pylori* here. And no SIBO, Eric? Did you do a SIBO breath test on this person? Haven't tested for SIBO. Yeah, I think you're asking me [if] the zonulin, the fecal zonulin on [the] GI-MAP [is] reliable. I think it's reliable. I haven't really come across anything to doubt the reliability of that test, but I haven't really done a lot of zonulin add-ons for [the] GI-MAP. I've used them mostly with the Genova add-on. But I think there are pros and cons, just like we talked about in the intestinal permeability section, like lactulose mantle test versus the Cyrex 2 antibodies and the serum zonulin versus fecal zonulin.

You have all that information. But I think it's reliable. And it seems to also, oh you're saying it almost never comes back significant, even when gut inflammation is highly suspect. I don't know, then. That's a good question about the zonulin reliability on [the] GI-MAP. I haven't looked into the methodology and research on that super well. But I'll put it on my to-do list and see if I can get some information for you. But I would say if this person is open to doing a protocol, probably what I would do is a prescription treatment for *H. pylori*, combined with parasite treatment. See how she feels. I would do a SIBO breath test for this person for sure just to make sure that there isn't something happening higher up. With borderline anemia, and [I've] got to think, is there some infection happening up higher in the small intestine where absorption of nutrients is being impaired?

If you're looking at her, what's her, you say anemia. So I don't know if it's microcytic or macrocytic, or if you're thinking [vitamin] B12, or iron. We know that with SIBO, nutrient deficiencies are pretty common, and could that be driving intestinal permeability higher up in the GI tract. So I would definitely test for SIBO if this person is open to that. And then for nervous system treatments, I would say that we're still using [the Dynamic Neural Retraining System] (DNRS) pretty consistently. In all fairness, [the] DNRS is a pretty intensive protocol if you haven't looked at that yet. Just look at the website, [and] you can get a sense. But it's a pretty intensive process, like practicing 60 minutes per day, and it's up to a year. But I would say that that's probably the program that I've had people have the most success with. And I usually say if you can fit this in with your bandwidth, then it's worth a try. Because [I don't think there are] any side effects and, if anything, I have had every person that has done it and has actually stuck with it, they have achieved some sort of benefit. Whether it was the intended benefit is the question or not, but there's always something that I think someone has had improvements on when they've done the DNRS. So [the] DNRS is the more intensive protocol.

I will also have people look at EMDR. I think that can be helpful. I don't think you have to have some major [post-traumatic stress disorder] for those to be helpful. I think chronic illness and

chronic GI issues and social isolation, all of those things can be pretty traumatic to the nervous system. So I will still recommend EMDR therapy for people who it seems like it might be a good idea. *The Mind-Gut Connection* by Emeran Mayer is a good book that I usually recommend to start seeing how these things are connected and the nervous system. I'm trying to think [of] what else I do. [The] Gupta Program [is]kind of like DNRS, but it's just an alternative. Some people like the Gupta Program over the DNRS. I would say if this person is a high-strung type personality, type A, it might be helpful to just dip your toe in that water, and I will usually tell patients, hey look, we're going to work on identifying these imbalances in the gut. And we're going to work on trying to see what is driving your food sensitivities and inability to eat a more diverse diet. But in my experience, I have always seen the need for this gut–brain regulation, this limbic system retraining, after someone has dealt with a chronic illness of any kind. [Because] once it becomes chronic, just the name of that, I think, insinuates a nervous system that is generally stuck in this maladaptive pattern, this maladaptive response to foods.

I look at food sensitivities like hyperreactivity of the immune and nervous system[s], because very rarely is it the food's fault. Usually, it's the fact that your body is either being exposed to those particles or responding inappropriately. So that's usually how I pitch it to them, like, "Hey, I just want to dip our toe in this water." It usually really resonates with people; either they jump on and they're into it, or they're just not sure, and it might take some time. But I usually like them to just start reading about it, read the book, [and] start understanding that this is something we are going to revisit. [It's] not something I have people do right away, especially if they don't tolerate supplements or medications, and I am just very limited with treatment because I can't really treat them. I will often have that patient who's super sensitive to everything start with limbic nervous system retraining, and I usually can get to a place where they are more tolerant of treatments.

That was a side tangent. Sorry, but I think you get the point of the way that we can incorporate nervous system stuff into tricky gut cases. All right, let's see if anyone else has any other questions. [I'll] give everyone just a couple more minutes. We're getting really close here to being done anyway. But all right, [everyone]. Well, thank you all for hanging in and listening. And [you'll] have the recording soon. And if you need anything. Oh, Eric. Okay, [really] quick. I [have] one minute. Go ahead and ask your last question and I'll get that in for everyone.

"[Is] Alinia [a] treatment for pinworm?"

I don't know, to be honest. I don't know that answer. I would think yes because I think Alinia is pretty freaking cool from a perspective of prescriptions. And I'm not touting prescriptions by any means. But I would look it up [on] UpToDate or look in Google Scholar or try to find some activity of Alinia against pinworm. I would think probably there is because it also has been shown to have some efficacy against SIBO. It's really been used in a multitude of ways. For pinworm, you may be able to send me a note through the portal, and I can see what I can come up with. I think I've only treated pinworm once, really, where I found it to be in a sample. I'm trying to remember what I used. I can't remember. I'm trying to remember. I think I used a

natural product that you take for one day, and then two weeks later, you do it again. But I think that if you really suspected pinworm, if Alinia isn't effective against pinworm, which I would suspect it may be, then I would try the Alinia first. If not, then you could add something in for pinworm. But maybe send me a message and I can try to find what I used in the past that got rid of it for my patient.

All right, everybody, thank you so much. Have a great rest of your day and I will see you again next month.