



Your Functional Medicine Expert®  
Jill Carnahan, MD ABIM, ABOLM, IFMCP

## [#121: Dr. Jill LIVE! interviews Teresa Holler, MS, PA-C - A Simple Approach to Complex Illness](#)

Dr. Jill 0:13

Well Hello, everybody! Welcome to another episode of Dr. Jill Live. Today, as always, I have an amazing guest, and we're going to dive deep into [the world of] complex chronic illness. I know so many of you out there suffer from autoimmunity, Lyme disease, other viral infections, mold-related illness, and other environmental toxicities. I'm with a real expert today, and I cannot wait for you to meet her and learn more. In just a moment, I'll share her bio; it's Teresa Holler. Stay tuned, because you're in for a great episode.

Dr. Jill 0:42

Just a little bit of background if you haven't caught my other episodes, you can see them all. We're over 100 episodes now on YouTube, Stitcher, iTunes, and wherever [else] you find them. I would love for you to stop by, if you are listening, and enjoy them. Please leave a review; that helps us reach more people.

Dr. Jill 0:57

Without further ado, I want to introduce my guest. Teresa Holler is a family practice physician assistant in Wilmington, North Carolina, which we just talked about. It's going to get some rain soon, probably from the hurricane. Hopefully, you guys stay okay. Former Assistant Professor of Medicine, former Director of Education for Project Wellness, and author of *Cardiology Essentials*, *Holler for Your Health—I love that!*—and *On Medicine and Miracles*. Oh, my goodness! I love those titles; that's great! She's been featured on NPR, Fox TV, Good Morning Arizona, Advanced Physician Assistants, and more. She's been a keynote speaker for both professional and consumer audiences, including the American Academy of Physician Assistants.

Dr. Jill 1:38

However, what sets her apart is not her credentials, which speak for themselves, but her heart. Teresa truly cares about her patients, and her concern has provided health and hope to many patients who have lost both despite seeking many different treatment options.

Dr. Jill 1:51

Oh, Teresa, that last little part gives me goosebumps. The biggest thing about what we do, isn't it bringing that hope to people—I'm sure you see every day like I do—that have lost hope in our system or have been told there's no hope or there's nothing more? Those people that come in and tell me, "My doctor said there's nothing more I can do," and you're just like, "Wait!" I can tell you have that heart. Tell us first about your journey. How did you get into what you're doing now, and how did you get into medicine? I'd love to hear just a little bit about your background, even where you grew up, and how the journey happened for you.

Teresa Holler 2:27

Sure. I have always been interested in medicine. I started my interest in the 10th grade. I had a fabulous biology teacher, and I just loved learning how the body worked. I always wanted to help people; that was my main drive. So, I just decided to put what I love together with helping people, and that's how I landed in medicine.

Teresa Holler 2:48

I ended up teaching as an assistant professor in a PA program, so I had to do doctoral coursework. While I was doing that, I took an environmental health class, and I was shocked by what I learned. I had no idea that chemicals could make people sick. I started realizing that some of the patients I had knew more about these things than I did, and I felt very humbled. I felt like I was trained to be arrogant, and I felt really bad for a while. I felt really guilty, and so that started my way of looking at other things and just started the ball rolling down. "What else didn't I know?!" "Oh, my goodness, vitamins matter!" "Oh, my goodness, what else didn't I know?!" And I just started lumping things in.

Teresa Holler 3:30

Around the time that happened, I had just written a cardiology textbook, which had gotten published. I just took the passion and I got kind of mad, so I wrote Holler for Your Health.

Dr. Jill 3:43

I love it! Those titles are, like, the best!

Teresa Holler 3:46

Yes, so you can see my emotional-spiritual journey from very conventional, know-it-all cardiology to "I'm mad that I didn't know what I should do to help people"—Holler for Your Health. Then somewhere we get that more enlightened [book], On Medicine and Miracles. That was my journey to where I am now.

Dr. Jill 4:02

It is. I'm reading that, and I had preread your bio, so I was like, "Wow, I love this lady." What I loved—there are two things that came out. Curiosity—you talked about it without using that word, but I know that's what you meant. I feel like the best doctors are the ones that remain curious and humble, like, "Wow, there's more." So often in medical school, we graduate, get out, and then stop learning, which isn't the case for you or me. But it's literally that curiosity of, like: "Oh, wait. They didn't teach me this. I want to know more." I think that drives us, and for better or worse, we've both landed in the very most complex [and] dense forest of medicine.

Dr. Jill 4:37

I love it! I'm sure you do too, because we get to help people who maybe haven't had hope. But I love that, and I love the further journey of seeing unexpected miracles because we do get to witness such beautiful things with our patients, and it starts with that curiosity. I love that you also said 'listening,' because I find the same thing. I feel so lucky and blessed because so many of my patients, they've researched and they bring me articles. They say, "Have you heard of this new thing?" Sometimes I have, but sometimes I haven't, and I say, "Oh, tell me more." And we get the opportunity to learn from our patients.

Teresa Holler 5:10

Yes. It's fun, and I think that when you start going down this rabbit hole, you start with nutrition, then you learn about healing the gut, and then you learn about "Oh, what is methylation, and what are these things, and hormones?" and you start adding things to your toolbox. I think that you can become very comfortable using that toolbox I just mentioned and helping a lot of patients that aren't getting better. But, to progress further into the world of chronic complex illness, I think that there's something wrong with us because it's so hard! [laughing] But I really enjoy biochemistry; it was always my favorite thing, and I love learning—why, why, why? So, I think that's what made me plot on down further and learn some of these more complex things.

Dr. Jill 5:58

You know, they say, "Brother from another mother." I think we're sisters from another mother because I so relate to what you're saying. It's funny because I'm the same: I love the complexity, I love the puzzles, and I love to help solve the problem. So one thing that ends up happening when we are these doctors and physician assistants and experts in areas that are complex and people haven't gotten answers is, we run up against—I always think of it as—toxic load, which can be mold or chemicals or metals and infectious burden. We'll talk about both of those today. Would you say that the root of what you see as well is either the viral, the Lyme, the chronic tick-borne infections,

or other types of things, and the toxic environmental load like mold or other things like that?

Teresa Holler 6:41

I think that in the last year or two, it's gotten a lot worse. I'm sure you're seeing the same thing. Patients who we used to be able to [help] recover fairly easily, I don't know about you, but I started getting a little complacent, [thinking], "Okay, I'm getting this down." Then something shifted; the toxic burden just got so much heavier for everyone. So those that we're dealing with [that have] infections and things like that, it's taking a lot more to get them well than it did even two years ago. That's why I was excited when you invited me on the show because I feel there's a chance to just spread hope to those who are sickest, and that's where my passion is.

Dr. Jill 7:18

Me too, and I love that. One of the reasons we met was through a company I know we both like to use. But we're not sponsored by them or anything; we're just freely talking. We talked before about what's going to be fun; we can dive into some of the products we use for these complex chronic things. I'll just frame this because, again, we can talk about detox and how you approach the complex patient. I'd love to hear that. We'll come right back to that. But the other piece we're going to talk about is these chronic infections, and it's a sign of our weakened immune system, where all these things pop up. Why don't you start by telling us: How do you start with someone who's complex? Maybe they have chronic fatigue, fibromyalgia, migraine headaches, weakness, maybe even neurological symptoms, or other things. Where do you start? Give us a little overview of how you'd start.

Teresa Holler 8:00

Okay. So I spend a lot of time on the history because I find that it helps to cheapen the visit as far as the lab tests [are concerned], which are the big expenses in functional medicine. So I try to really target specialty testing. I tell my patients that, like looking at the spokes of a wheel, if they're coming in with all these symptoms, I could go down any spoke to find the problem. But I ask questions to try to figure out which spoke is causing the biggest problem. We had Hurricane Florence come through here four years ago, and it decimated our area, so if their symptoms started right after that, we know we're going down the mold pathway first. That's how I do it: I figure out: When did your symptoms begin?—and what was going on right around that time, and I target that area.

Teresa Holler 8:46

But predominantly most of my patients will end up on some type of mitochondrial support; something that methylates their B vitamins but is careful for some patients where there may be a COMT or a CBS mutation. So sometimes I'm really careful with that. Then, [while] waiting for the lab work, sometimes they're so sick that I'll put them on anti-inflammatory and immune system modulators right off the bat. Kids with PANS and PANDAS, I love to start them off on COGNEASE detox and CYFLACALM II from Beyond Balance before I even get lab work. If they're jumping off the walls, [I'll recommend they take] lithium orotate right off the bat so we can settle them down, and maybe some L-theanine to calm them. The first thing I like to do is just give them some peace, and so that's how I'll start, [or] when I'm waiting for lab work to come in.

Teresa Holler 9:35

Every now and then I just know someone has an infection and I know their immune system is all over the place, and I will also start them on Samento from NutraMedix because you really can't go wrong with it as long as you titrate the dose up carefully because of the fact that it's an immune system modulator. So, wherever the inflammation or autoimmunity is, whichever you have, we now know that it's autoinflammatory, where it's a combination; that's going to settle it, regardless. It's also going to help with some pain; it can help with the underlying root cause if there is an infection.

Teresa Holler 10:09

Sometimes I will start them on that along with Burbur Pinella. I always use Burbur Pinella to clear the lymphatics, the glymphatics, and protect from any die-off reactions. Burbur Pinella is definitely what makes my practice the easiest to run because it just helps me field a lot of phone calls. Immediately, my staff is trained to ask, "Have you taken extra Burbur Pinella?" If they say no, that's always the answer to the question, initially. So that's where I start.

Dr. Jill 10:38

I love that. Gosh, it's so similar. I want to repeat it for people listening because [they might be] like, "What were those products?" We'll put links and everything because I'm the same way. These are from different companies and all that but definitely I agree with you. Especially with kids, the brain inflammation—I love the calming because it's almost like their bodies can't—they're so inflamed. So you mentioned COGNEASE DETOX, which is Beyond Balance, and then CYFLACALM. Was it CYFLACALM or CYFLACALM II?

Teresa Holler 11:00

CYFLACALM II.

Dr. Jill 11:02

Yes, and then, Samento, I agree, it is my go-to—cat's claw is the ingredient in there. Samento is really a special product. With Lyme and co-infections, it works really well, and [it] also [works well with] Epstein-Barr because it has that antiviral activity. But, like you said, it kind of has an anti-inflammatory [effect].

Dr. Jill 11:19

I've always thought about Lyme and complex chronic inflammation infections, and with these things we're talking about, there's really a spectrum, and often it's not just one thing. You can use drugs—I do sometimes—but often they're so one-sided; they're like sledgehammers. Kids, especially, do better with herbs. And it's surprising—I always say, "Respect the herbs because they are very powerful," right? First of all, Samento, that's a real classic. I love talking about that. I'll often go to, like, 30 [drops] twice a day. But how do you start them and dose them with those drops?

Teresa Holler 11:50

Sure. So, it's important to just mention that if someone is going to start cat's claw, I always use Samento because it's TOA free. If you're using a different brand of cat's claw, you have to be really careful because if it has TOA in it, it can cause inflammation. That may worsen PANS and PANDAS. You have to be so careful with them to begin with, and the same [is true] with autoimmunity. If I really think that they're going to be triggered, I start with one drop twice a day. I just put it in a little shot glass of water, and I tell patients, "Go up by a drop a day until you have any new or worsening symptoms"—even if the symptoms have nothing to do with it. You might just catch a cold. Either way, it's fine to just hold and wait. Then, when you feel [like you're] back to your baseline, go up by another drop. So, it's kind of a stair-stepping increase, and I sometimes max out at 40 drops twice a day—so somewhere between 30 and 40.

Teresa Holler 12:46

If I really suspect that there's Lyme or a chronic infection, I never use it alone; I add a second herb to get a synergistic effect. Usually, that's going to be banderol initially, but sometimes I pick a different one. If I suspect Bartonella, I might choose Houttuynia. If I suspect yeast or mold, I might choose Cumanda. Although sometimes I like to wait because Cumanda will give them a massive die-off if there's mold or yeast, right? You know that, yes.

Teresa Holler 13:14

I always have to add stevia. I didn't know this for a long time, and I started doing a test panel from DNA ConneXions. I don't know if you've ever used that. I was using antibody

testing from Medical Diagnostic Labs for over a decade because it's cheap. With a code for fatigue, it's free with most insurance for an entire panel. In any event, I can't tell if things are gone, so in these complex patients, sometimes they're a percentage better, and I'm like, "Well, which of these infections are gone and which aren't?" That's when I'll do a DNA ConneXions test.

Teresa Holler 13:48

So what I was finding is that a lot of patients had this infection called *Borrelia recurrentis*, and nothing was getting rid of it. Nothing seemed to work until I added stevia. NutraMedix stevia was the only one that worked in the study done by Theophilus in 2015. That was the stevia A in the study, and it was the one that was most effective. It kills persister cells. So I always do two droppers twice a day for two months. I may not start it at the beginning; I might layer it in later because I want to make sure I kill the persister cells. That was eradicating that *Borrelia recurrentis*—that nothing else was doing—when I added that into whatever regimen I was using. So that's why I like to use the combination.

Dr. Jill 14:28

Teresa, this is brilliant. I love it. I haven't used a lot of stevia, but that makes so much sense. The [*Borrelia*] *recurrentis* is a tick-borne relapsing fever. Again, I'm in Colorado, so typically people will say, "Oh, there's no mold in Colorado" or "There's no Lyme." Ha, ha! because I see patients every day. But the one I do see way more out here than the classical *Borrelia burgdorferi*, which is especially on the western [inaudible] of Labcorp, Quest, or hospital labs—those are not so common out here in Colorado, especially for people who are natives—I see a ton of the tick-borne relapsing fever because that's actually more common in Utah, Arizona, Texas, Wyoming, and Colorado out here.

Dr. Jill 15:06

I've talked with some of the doctors, [for example], Dr. Horowitz, and the ILADS doctors. A lot of them say, "This can come out at night just from the body heat," like if you're camping, hiking, or staying in a log cabin, and "it can infect a person within 15 seconds and leave no rash or evidence." It's also in fleas and lice, so it's very unusual. The other *Borellias* are not usually from those.

Dr. Jill 15:31

I happened to test positive for *Borrelia recurrentis*, and I think it was way back in my childhood when lice was an outbreak in school, and I think it was maybe from that versus the tick. So that's interesting—kind of gross, but true. So I'm glad you mentioned that, though. And I agree, that's a lot harder to treat.

Dr. Jill 15:51

So you usually do Samento, banderol, plus stevia, or some kind of combination. I want to go back to Burbur Pinella because I agree that's a great thing for the Herxheimer die-off. How do you use that? Say I'm really suffering from bad headaches and worsening joint pain; what would you recommend for them to do with that Burbur Pinella?

Teresa Holler 16:06

Okay, so actually I was doing a lunch-and-learn with another physician practice, and they taught me a super tip. So now I'm stealing their idea—it's a great idea. I used to tell my patients to take a dropperful every 10 minutes for an hour and then call us back. So she told me that what she does is take six dropperfuls, puts them in a glass of water, and tells them to finish the glass in an hour. Then you don't have to remember to take something every 10 minutes. I thought that was brilliant.

Teresa Holler 16:34

What happens is patients will call back shocked. They would never believe, as bad as they felt, that that's all they had to do. Then, of course, we sometimes will drop the droppers—the killing droppers like Samento, Banderol, and stevia—back by a drop or two and hold them there until they've fully recovered.

Teresa Holler 16:51

One of the things that I really wanted to make sure people were aware of today is that when you're having symptoms that last more than three days, it's probably not a Herxheimer reaction. It's probably the porphyrin dumping, and I wanted to make sure people knew what that was because that's what really makes sick people not get better. If they're mistaking it for a Herxheimer, they're moving too fast because that's treated entirely differently.

Dr. Jill 17:13

Let's talk about that, because I totally agree with you. I told you this before: We have a really intelligent audience of all types, so I think our clients, patients, and fans will enjoy this. Talk about that. What is that, what happens, and what do we do about it?

Teresa Holler 17:26

Okay, so this is going to be really hard to explain, but this is my favorite; this is biochemistry. So there's something called primary porphyria; we're not talking about that. That's something that's diagnosed in children; it's an innate error of metabolism; it's not something that we're talking about now. But, with secondary porphyria, think

about a garden hose, and what happens is that your body has a pathway to make heme. Think about hemoglobin; myoglobin in the muscle also contains heme. And actually, detox enzymes contain heme, and some of the mitochondrial compounds that are needed to make energy contain heme. So heme is vital for feeling good and for function. In order to make heme, there are all these intermediates, and these intermediates go down a pathway, and what happens is that the very last step is where you take iron and you bind the iron to this last intermediate.

Teresa Holler 18:17

The problem is that the iron will not bind if it's in an oxidized state, so think about oxidative stress. Oxidative stress can be caused by any biological toxin, any other toxin, or an infectious disease that has toxic effects. What happens is that if you're suffering from any of these really severe root causes that we're talking about today, it is possible that you're going to have that iron in the oxidized state and not be able to bind the porphyrin into the heme to make the heme. So what happens is that there's a negative feedback loop that goes back to the top, and it [essentially] says: We're not making heme, so let's make heme. And it tries to push the pathway faster, like: Let's go; let's go! What happens is that it speeds up the pathway, but you still can't make heme, so all those toxic intermediates just bulge you out of the system. They go out in the system, they are super reactive, and they cause major oxidative stress, which then causes major inflammation; that's what triggers mast cell activation. So now you're in a big mess.

Teresa Holler 19:20

What you really want to do—number one in treating any complex chronic illness—is not do that. That's number one; don't do that. So how do you not do that? You don't do that by choosing regimens that you could titrate up a drop at a time, going nice and slow, and being cognizant of when you feel worse. Some people have that mindset: "I'm going to plow right through this." And they take the longest to get better because it doesn't work that way; you want to go slow. The other thing is that you can't chelate toxins out because you need heme to make those enzymes work. So if you're trying to jump in and chelate things, you can make yourself much sicker if you're not prepared—if this heme pathway is not working.

Teresa Holler 20:01

So the way to fix it is going to be counterintuitive. I actually had a patient once tell me she felt so much better when she ate sugar. But she wouldn't eat it because sugar is bad for you, so she wouldn't do it. Well, it turns out that the treatment for the primary form that we're not talking about that babies get is IV glucose; it's sugar. So, what do we do for secondary? We can use healthier forms of sugar. We can have a piece of fruit before a meal, or we can use honey. There are lots of ways to do it, or even just a simple carb that breaks down to sugar faster, like rice or something like that. So having it at the

onset of a meal, because meals tend to trigger porphyria in a lot of people, can help. But if you've already triggered it, you want to mop up those toxic compounds quickly, and you do that with activated charcoal.

Teresa Holler 20:50

I use a product called GI Detox; it's just my favorite. It's from Biostatine Botanicals, but you can use straight-up activated charcoal. There are many different things you can use, but that's the same thing, and then just slow down the whole pathway. That's what you want to do. A lot of people think: "If I just treat this and I get a herx[heimer reaction], I'm doing the right thing" or "I'm doing the right thing; I got a herx." And a lot of times, it's not a herx, and they're not doing the right thing. So that's why I wanted to really make that point. I think that could help a lot of people to know that.

Dr. Jill 21:20

Teresa, that is such a pearl and such a gift. Not only that, but you explain that so well for anyone with a professional [background] like me, [or even for] someone who doesn't really know the biochemistry [behind it]. Brilliant job of explaining it! Now I know why the person who introduced us said, "You will love her." I do. I think you're amazing! What a great, great, practical [explanation]. I had a little different way of explaining it, but it's exactly what you're saying. It's generic, but it's like we're mobilizing toxins and we have to excrete them, and if we mobilize quicker than we can excrete, we get stuck in between.

Dr. Jill 21:49

I love what you said because so often patients or even doctors will say, "Oh, just keep pushing through; you're going to be fine." And I'm like, "No, that's a sign." I love what you said. And I want to repeat this, you said, "If it's more than three days, it's probably not a herx," because so many patients are suffering and they think, "Oh, I'm just supposed to suffer for weeks" or whatever. That's not true because they're actually doing more harm than good with either porphyria, toxicants in general, or oxidative stress; they're mobilizing before they can excrete. I love that you were so clear on that and so practical. And I love the tip on Burbur Pinella. I'm going to start using a lot more of that as well. [They are] very good tips.

Dr. Jill 22:27

The other thing you mentioned in the beginning was the history. You save people money by trying to really listen to their stories. One of the things I wanted to emphasize [is that] if you're listening to this and you look back, you could write out a timeline of when you got sick, even without a doctor. You could write it out and say, "When I moved here," did this, did that, "when I was in Virginia with ticks exposure" or

"when I moved to this new house... " And you might actually be able to help the doctor figure it out because you have a very clear idea of when things happened. Any other tips or things as far as maybe finding the root cause in these complex chronic patients?

Teresa Holler 22:56

I think you just nailed it. I tried to bring functional medicine to working-class people; that was my mission. For me, I only have an hour with these complex chronic illnesses, so I tell patients to bring a timeline and just put everything in order, and it helps a lot. Really, that's the number one thing, is if you can outline the timeline, you can piece it together. And it's really fun to look at it, isn't it? You can say, "Oh, yes, it's because of that that this triggered this, and then this triggered that, and you can just see the—

Dr. Jill 23:29

It enables you to become partners, right?—because all of a sudden they're like, "Oh yes, I remember..." And they'll remember [something like], "Oh, yes, I had a car accident and then a concussion, and that made things worse too." Wow, already, this is so packed full of goodness.

Dr. Jill 23:41

So let's go to tick-borne infections because you're in an area I'm not. But I see a ton of that, and it's increasing astronomically in all states in the US. Every state has been shown to have Lyme disease and tick-borne infections. And we're not just talking about Borrelia; like we said, we have the tick-borne relapsing fever, we have Babesia, [and] we have Bartonella. Often I'll see—I'm sure you do as well—Borellia, Babesia, Bartonella, and maybe something else. What would you do with those patients who have the trifacta or more of these complex tick-borne infections?—when they have a bunch of them.

Teresa Holler 24:12

Sure. I think it's almost wise to just assume everybody's got them all because it's just so common now to see a plethora of things. The other thing I want to say is that I did have a patient—I've had several patients like this, but one, to give an example—who had psoriasis. Psoriasis is a classic 'heal the gut,' right? Gut healing—that should help with psoriasis. Well, she didn't get better when I did that, and so I put her on Samento because I figured, "Well, maybe there's a microbe and it's good for auto-inflammatory diseases anyway." She ended up testing positive for Lyme later but she got better with just the Samento. So a lot of times, when you're saying, "What would you do for these microbe-[borne] diseases?"—the first thing I would say is, "Assume you have one," because maybe you can't find someone to test you or maybe you can't afford the

testing. Just assume you have one because if you're using herbal treatments, it's not going to hurt because they also modulate the immune system.

Teresa Holler 25:03

The treatments that we're using, like Samento, have been approved. It has studies that show it works for osteoarthritis and rheumatoid arthritis. So you can use it for symptom management anyway. It was tested against [inaudible] Feldene; it was 86% as effective as an anti-inflammatory. So use it like ibuprofen. And if you have a bug, look, you kill it too. So I think that there's just no harm in that.

Teresa Holler 25:25

So when you have all of them, what do you do? One of the things I learned at ILADS this year that I didn't know and wasn't doing right—I love that I think I can teach people more from what I'm doing wrong sometimes rather than what I'm doing right—[was the importance of] treating Babesia first. It turns out that there's this new Babesia; this odocoilei [strain]. Are you familiar with that? I know I'm wrecking the name.

Dr. Jill 25:44

Just yesterday, I had a patient come in, and we talked about new treatment options. She has evidence on T-Labs, which is one of the newer Labs of Dr. Morsani, I believe. And she had this; it was shown in the blood. It was very clear. I hadn't heard of it, but I knew there were some new strains. It's like they're continually coming out with new strains because really there are probably way more than we ever test for. So yes, tell me what you learned, because that was interesting. And I think it was the biggest part of her symptoms for sure.

Teresa Holler 26:09

So one of the things that we learned is that Babesia duncani, which we can test for, doesn't tend to infect humans. So when you see that on a lab, you could assume they actually have this thing. So that's interesting, right? I learned that last year at ILADS, and this year the same speaker, Dr. Lindner, went more in-depth with some information. So this Babesia forms nests—not biofilms, [but] nests. So it's a big, tangled mess. Really, the only thing that's going to penetrate those nests is Boluoke—that's the lumbrokinase brand that we all know is the best. You can get it from Researched Nutritionals [or] the Canada RNA brand. But that seems to be the brand that everyone says is the go-to. Taking that on an empty stomach twice a day seems to be the best for breaking into those nests.

Dr. Jill 26:56

How high do you go over there? I often do two or three, twice a day. But what's your dosing?

Teresa Holler 27:01

Well, again, I learned what I was doing wrong—at ILADS—because my dosing was one [capsule], twice a day; I tend to be a minimalist. But for the nest, you definitely need more—two to three, twice a day. And then, using whatever Babesia treatment you have, you may need to rotate and keep going with this one. It's just harder to kill. So [as far as] Babesia treatments, I still love prescription mepron with azithromycin, but I don't do it the way everyone else does; I only do it for a week because I follow it with herbs.

Teresa Holler 27:31

When I was at ILADS, I was talking to a lot of practitioners who are using that for a very long time, and I just never have. Number one, I'm just afraid. I'm afraid to use antibiotics and hurt anyone—complications. So I just do [it for] a week and then follow with herbals. Artemisinin and cryptolepsin, I think, are probably the two strongest.

Teresa Holler 27:49

And then I think that NutriMedix has a wonderful new product. NutriMedix just came out with three new products. I don't know if you knew that.

Dr. Jill 27:54

I saw those on my counter. Let's talk about those because I'm super excited. I have them literally sitting there. Go ahead and tell us about those. If I'm right, we used to have all these wonderful single herbs, but often we need to combine [them], and it's really complex, so they're trying to make it simpler.

Teresa Holler 28:08

It makes it so much easier. The Nutra-BBS is the one you would layer in for Babesia. It has the inula and the mora, so you would just layer that in. I just would like to rotate Babesia treatments for a longer period of time if you have that duncani [strain]. Now, of course, microti is going to go away. That's just easy to treat; that's acute. Usually, a week is sufficient, but it has, I think, a 40% relapse rate within four months. I'll sometimes treat it with an herbal like Nutra-BBS for that four-month period just so it doesn't come back.

Dr. Jill 28:41

So you're treating it with mepron and Zithromax for just a week and then adding the herbals on for four to six weeks or longer—four to six months maybe? I always do four

months for Babesia just because of the high statistic for relapse within four months. And then after four months, I just consider it done, with the exception that if somebody has this interesting new Babesia strain—we'll know because they won't be better—then I'll have to keep going. So that's how I'd manage that.

Dr. Jill 29:06

While we're on the Babesia, let's talk real quickly about—because you're good at clinical history; [for] someone who's listening—what symptoms might they have with the Babesia? Give us a little snapshot of Babesia.

Teresa Holler 29:18

Classic Babesia is going to be fatigue. Fatigue is way stronger in Babesia, and Bartonella is way stronger in emotional [aspects such as] rage and anger, and psychiatric symptoms. So if you have both [set of symptoms], you probably have both infections. They all cause fatigue—Lyme or whatever. But if you have extreme fatigue—like you get up in the morning and you can go for just a few hours and that's it—you're probably dealing with Babesia if it's really that gut-wrenching fatigue. But night sweats, that hot... the fever, chills—that's pretty classic for Babesia. I've seen a lot of headaches, maybe Bell's palsy with Babesia.

Dr. Jill 30:03

And maybe air hunger sometimes?

Teresa Holler 30:05

Air hunger is classic. But I see that with mold too, because that's a symptom [of] mast cell activation—the air hunger. But yes, Babesia and mold are the top two for that. Yes, very good. Thank you.

Dr. Jill 30:15

This is getting off on a little tangent—we'll come back to the NutraMedix, the new products—but unexplained weight gain. I feel like, obviously, mold can do that, but can the Babesia also be in the unexplained weight gain category?

Teresa Holler 30:35

Yes, but Bartonella—oh, my gosh!—I saw a 16-year-old girl gain 80 pounds in four months. [With] Bartonella, [it's] classic. When people put the weight on and nothing works and it's just going up-up-up fast, I always think [it could be] Bartonella.

Dr. Jill 30:40

Okay, good. That's great to clarify. So we talked about the one NutraMedix combo for Babesia; what are the other two?

Teresa Holler 30:48

Yes. But I do want to clarify that it could be Babesia.

Dr. Jill 30:53

Well, they can all sabotage leptin and adiponectin and your metabolic system, right? I mean, they can even cause a pre-diabetic state. Oh, one other thing. I'm sorry I'm jumping around, but I get so excited talking to you. One other thing that I love that you mentioned was back with porphyrias and the sugar because what I see nowadays, keto [and] intermittent fasting are so common. They're popular weight loss [strategies], but there's this subsection of people who do not do well on a ketogenic diet—they need the carbs. I just want to specify that if you're out there and you're like, "I don't do well on keto." Listen to your body. I'm one of those people who does not do well on keto and does not do well on intermittent fasting. I just want to mention it because it's so popular, right?

Teresa Holler 31:34

I would just like to break shame right now if it's okay with you. I want to just convert this conversation. Yes, everyone is so afraid of a carb and especially when you're sick with this. The average weight gain is 35 pounds when you have a complex chronic illness. Your mitochondria are impaired, so you're going to feel like if you put a carb in your mouth, people are blaming you, and you're going to feel ashamed—stop! You need it; you'll feel better—eat it. But don't pick really bad ones.

Teresa Holler 32:00

The other thing is just to break shame—it's just a quick breaking shame moment. Chronic fatigue syndrome is defined by fatigue that doesn't get better with... like when you exercise, instead of feeling better, you feel worse. And I just want to explain what's going on because a lot of physicians push their patients to exercise. I've seen marriages on the verge of divorce because the doctors convinced the husbands that the wives were lazy.

Teresa Holler 32:27

I just want to break that, because here's what really happens: Your energy currency is ATP—adenosine triphosphate—that is energy. That's the chemical [form] of energy. [With] those three phosphates, what happens is that one gets pulled off and a pool of

energy comes out with it, and now you have adenosine diphosphate—two phosphates. And then that's supposed to keep recycling, so you keep having energy. So if you were to run a marathon, you would run as far as you could—miles and miles and miles—and eventually, you're going to not be able to make enough ADP. And you're going to pull off another pool of phosphate and go down to AMP—adenosine monophosphate. And then what happens is that your body cannot recycle that, so you have to build ATP from scratch, which can take from three to seven days.

Teresa Holler 33:11

So you would expect that after you run a marathon, you're going to rest for a few days; you're going to be tanked, and you're not going to have energy. That's normal; you don't feel bad about yourself. And then you go back to training again. So what happens in chronic fatigue is that you go from ADP to AMP doing very little, and if you push yourself when you get to that ADP moment and you know you don't have anything left in the tank and you just keep going because you feel ashamed of laying down and resting, you're going to be out for three to seven days. But if you just put your feet up for 20 minutes to an hour, you're going to make yourself get back into the recycling, and you're going to be able to go again and be able to do more in the long run.

Teresa Holler 33:48

So I just want to encourage people to pace themselves. When you wake up in the morning, you're going to have a certain amount of energy. When you feel completely depleted, give yourself a break and don't feel guilty. You'll get your energy back up, then go again. But if you push through, you're going to know it because, in three to seven days, you'll be completely out. I feel so bad for the people who are ashamed of being tired all the time. You're not lazy; you're sick.

Dr. Jill 34:12

Teresa, I love, love, love this conversation. I love what you just shared, and I think that might be the most important thing in this whole [conversation]. There are some great pearls here, but that [was so valuable]. I just want to cry. The people that come in—the same thing. There's often a spouse or partner, a parent, or someone [else] that shames them for either needing carbs or, like you said, waking [up tired]. This is so real. And those who are suffering intuitively know [this], but they often feel bad and are like, "What am I doing wrong?" So thank you so much for sharing that. I hope if you're listening out there and this relates to you, [you will] comment anywhere you hear this because I know there are a lot of people out there that are suffering. Thank you for saying that; that's so important!

Teresa Holler 34:49

And I think when you say they intuitively know, they block that intuition because they think it's wrong. "Sugar's bad!" They don't even allow themselves to receive—

Dr. Jill 34:57

Right. I love that. Oh my gosh, it's so important. So talk about the other two new combo products that are out that might be helpful.

Teresa Holler 35:05

Yes, so my favorite one is the Nutra-BRL for Borrelias. The reason for that is that it's the combination of the three tinctures that I use together to treat Borrelia, because, like I said, I added the stevia in. I wasn't doing it for many years, and I should have. But it's Samento, banderilla which is the Otoba bark, and stevia. They're all in a one-to-one combination. So I work my patients up to three dropperfuls twice a day, which would be the equivalent of one dropper of each of those, and then I add in one more dropperful of stevia per dose for at least two months to make sure I kill the persister cells.

Teresa Holler 35:41

And I'd like to comment on that because the Dr. Feng and [Dr.] Zhang 2020 study was presented at ILADS this year; thankfully, that was an amazing study that showed the herbals that were beneficial at killing persister cells. And I wanted to point out that there was a study that showed stevia by NutraMedix was effective at killing persister cells. It was compared to the combination of doxycycline, cephalosporin, and dapsone, and it was [just] as effective, and that's a huge study. That came out by Theophilus in 2015. So what happened is that in this 2020 study by Feng, they picked the herbals that had shown promise to study; but in the 2015 study, they studied different forms of stevia first. The only one that showed that benefit was stevia A, which was a NutraMedix brand of stevia. NutraMedix sources all their herbs themselves and does everything in-house, and they're very special because of that.

Teresa Holler 36:41

So [in the 2015 study], they didn't use the stevia that was shown to work, and other stevias were less effective or completely ineffective. So it was presented in that more recent study as ineffective. I think that does a disservice to patients who are chronically ill because it is so much cheaper than some of these other herbs and it is so effective. It was as effective as dapsone, doxycycline, and cephalosporin. I mean, come on! And it's cheap; just throw it in. Even the speaker who was presenting that data acknowledged it; she was like, "Well, it's really cheap, so throw it in anyway," which I appreciated. So I just wanted to make sure that that didn't discourage anyone from adding that in.

Teresa Holler 37:17

So [with] the Nutra-BRL that you asked me about—back to the question—those three herbs, at least get one dropper of each in, which would be a total of three droppers of the Nutra-BRL twice a day. And then add in a full dropper of stevia twice a day for at least two months at the end, or you can do it at the beginning all the way through. That is the protocol that I'm using now. I find that people might herx more on the combination because I think it's just more effective. So you may have to take care to go up really slowly, but it's working.

Dr. Jill 37:51

Teresa, these are such pearls that you're sharing because, first of all, I've read both those studies. I did not realize the difference in source, but I did know that the NutraMedix is different in its effectiveness clinically. So I love that you clarified. If you have links to those—if you're listening here—I'll be sure and share them wherever you're listening if someone wants that research. I'd love to have those. We'll try to link those studies so people can actually look at them.

Teresa Holler 38:14

I'll send it to you so you can link it because I'm challenged technologically.

Dr. Jill 38:18

I know, right. No, I'll take care of that. I'll just share it. So we'll make sure if you're listening—wherever you're listening—you will get those links. Stay tuned. And I love that you clarified because I did see the 2020 study, I was like, "Oh, stevia is not so effective." I haven't been using it as much, but I am going to start using it a lot more. And we have all these in the clinic, so we definitely can use it. And then there's the third—so I'm super excited about that, [Nutra]-BRL, right?—NutraMedix.

Teresa Holler 38:40

Yes.

Dr. Jill 38:41

Okay. And the last one is?

Teresa Holler 38:44

Nutra-BRT. BRT [short for] Bartonella. The number one herb for Bartonella, no matter what brand you're using, is Houttuynia. Houttuynia is the main ingredient in every

Bartonella regimen. I don't know if you're familiar with Dr. Marty Ross. He puts all the protocols right on his website. He doesn't know me, and I don't know him, but I love going to his website and just seeing what he's got on there. He said that Houத்துynia has a 50% success rate, which is interesting because that's about the same success rate I had for many years using just Houத்துynia. But if you add a second herb, you can get that up to 75%. And the second herb that he was using was Sida acuta. But with Sida acuta, you have to be extremely careful not to get pregnant. Sida acuta would be really, really bad to get pregnant while you're on [it].

Teresa Holler 39:35

NutraMedix won't make it because they just want to err on the side of caution. And I like that because NutraMedix is my go-to herbs for my infection treatments. So if I have to go outside of that arsenal, which I do, it makes me pause, which makes me remember to ask these questions and be more careful. So I like that. So I don't start with Sida acuta as my second herb just because of that. You also have to watch the thyroid with Sida acuta. But I'll use Cumanda because Cumanda kills everything. It kills yeast—

Dr. Jill 40:05

Those are my favorites too. I love this.

Teresa Holler 40:09

Yes! So Nutra-BRT is the two together—it's Cumanda plus Houத்துynia in a one-to-one ratio. I start with that. And I love that they put them together. So I start that, titrate up, and that's the go-to. Now, Dr. Moyazini is using liposomal oregano and allicin garlic—two [capsules], twice a day of each of those. Plus, I think it's Biaxin twice a day—the antibiotic he's using. So I tried that on some of my patients because it works but it was hard to tolerate digestively. No one could stay on it. So I think that's another regimen to try. I want to get that 75% success rate up to the 95 percentile. In order to do that, you have to add a third something. And I think it's going to be stevia—I just do. So we need to study that. We need to study adding the stevia to that.

Dr. Jill 40:57

Well, I'll tell you what. Today, I'm going to start using these protocols. We'll have to talk again in six months. At least I can keep my little data points and we can share. But I totally agree with you. And I love the Cumanda. Also, it's going to affect yeast. So many of these people are colonized with yeast. Let's talk real briefly, we only have a couple of minutes left, but what about fungal stuff?—because that's almost always coexistent. What do you use herbally or medication-wise with these patients if you suspect they have fungal issues?

Teresa Holler 41:22

Sure, so I use a lot of different things. But I just want to make sure that I throw that out there before we go there—resveratrol. Everybody should be on that if they're treating a chronic infection—Japanese knotweed resveratrol. NutraMedix has a really cheap version—well excuse me, valuable! I've been told not to say 'cheap' anymore.

Dr. Jill 41:41

I know, but it's affordable, right? It's valuable—that's a good way [to say it].

Teresa Holler 41:46

They didn't tell me that; somebody else did. Anyway, okay. So I just want to make sure that as we move on, that's so important because it does so many things for the immune cascade, and it also prevents Bartonella from moving deeper into the tissue as you treat it. So I just want to bring that out.

Teresa Holler 42:00

Okay, fungal. I use a lot of different things. When I see aspergillus in the GI tract—I started out using Nystatin, and I saw it eradicate [it] and the markers would go away on the Great Plains lab test. But I don't like all the additives they put in it, and if I compound it, it's too expensive. So I started thinking, "I wonder if herbals would work for this." And I found success with berberine; I found success with grapefruit seed extract. I love the NutriCology brand of that. That one was the one used in clinical studies, so I always went to that one. I like Biocidin, but Cumanda is my favorite for when there are multiple infections because it kills so many different things. We call it a 'keep herb'; it kills everything except people. It's going to kill your fungus, your yeast, and your bacteria, and it's just a nice adjunct. So I usually will start with that if I'm on a protocol for other things and then sometimes layer these other things in, based on what I'm treating in their overall picture.

Dr. Jill 43:08

Oh my goodness! This is so full of great pearls. So wrapping up here, we've really talked in detail about infections, talked about timelines, and talked about so many really core things. What about general joint pain and inflammation? Is there anything else you would like or do for someone who just really suffers from pain?

Teresa Holler 43:30

That's a good point. Inflammation in general: I think that there are many things we can use. Obviously, fish oil is really good—it must be a good brand. You also can use

curcumin—it has to be BCM 95. In my book, that's the trademark one used in most clinical studies. I use CuraPro. But Zymogen has one called Curafen—that's 500 milligrams; CurePro is 750 [milligrams]. I use SPMs. I love SPMs.

Dr. Jill 43:58

Me too, I love them.

Teresa Holler 44:00

They are fun.

Dr. Jill 44:00

There are a whole bunch of pathways, post-COVID, that show that people aren't converting from EPA to DHA to the pro-resolvins—mediators. So I love using it also for long COVID or for people who are struggling from inflammation after COVID.

Teresa Holler 44:12

Yes. And noni—NutraMedix makes a noni that has been shown to be more effective than other types of Moringa, and that's a great anti-inflammatory. And sometimes I throw my PANS and PANDAS kids on that first along with those other things if they're super inflamed because it doesn't kill anything; it will only reduce inflammation. There's no die-off at all with noni. So when you're afraid to touch anything, touch noni. And everyone should be on modified citrus pectin; I just have to throw that out there.

Dr. Jill 44:40

Yes, [it's a] great binder. The studies on that and on all the environmental toxins—the organophosphates, pesticides, phthalates, and parabens—are amazing. So I think of it as a chemical binder. But you're saying just in general—toxicity.

Teresa Holler 44:49

Well, it reduces galactin-3, which is the alarm that sets off all the cascades. So it is also really good for glyphosate. I love it.

Dr. Jill 45:03

Oh, Teresa, this has been such a joy. Literally, this is like a fire hose. I've seen people comment. They are loving this; they're loving you—no surprise. What I love most [about you] is your heart. Not everybody can afford super-expensive regimens. And drugs, I use them, but it's so neat to have some great protocols that aren't drug-based that really work. So you've brought hope, you've brought healing, and you've talked about

some incredible protocols. I have so enjoyed this, and I know everyone else has, [too]. We're going to have to do this again. Any last final words to the listener who's maybe struggling or suffering that you want to leave them with a glimmer of hope?

Teresa Holler 45:45

Yes. There's always hope. Don't give up; don't quit. If you want to get well, one of the things you have to do is be careful of your mindset; be careful [with] what you feed your mind. So I would really encourage you to turn off social media, turn off all those things, get into the scriptures, get into the word, get into some music that's uplifting, get outside, get into nature, and get your head back in the game.

Dr. Jill 46:14

I love, love, love that, and I love you, Teresa. It has been such a joy. Thank you for your time, for your expertise, and for all the good you're doing in the world. Where can people find you?

Teresa Holler 46:24

My website is [TeresaHoller.com](http://TeresaHoller.com).

Dr. Jill 46:27

Awesome! We'll link to that too, and thank you again for your time today.