## Introduction and Dr. Emily Hernandez's Background

Hi, and welcome to another episode of the Healing Lyme Summit. I'm your host, Dr. Myriah Hinchey. And today I have the pleasure of speaking with Dr. Emily Hernandez.

She is a naturopathic doctor who has been specializing in treating vector borne disease for over a decade. Welcome, Dr. Emily, tell our listeners a little bit more about yourself and how you came to specialize in treating Lyme and other co-infections.

Yeah. Thank you for having me. I really appreciate it. so when I got out of school, I joined a Lyme litter clinic in San Diego and really just focused on treating Lyme for the first four years and then started my own practice in La Hoya and do treat other, you know, family medicine practice.

it's still see quite a bit of chronic Lyme disease and other chronic illnesses, but I'm actually originally from Connecticut, so very familiar with Lyme.

My mom actually had acute Lyme growing up. luckily was able to get some antibiotics and did just fine. But, not a stranger to Lyme at all, especially growing up in that area where it's quite prevalent.

So there's so many different symptoms that patients with Lyme disease struggle with. What is a good approach, in your opinion, to kind of dive in and start treating patients?

Yeah, I think this is a great question because so many patients come to me and obviously they've been sick for a long time, especially with chronic Lyme.

They're they're really just ready to be done with being ill. And I think they all want to get rid of this bacteria. And a lot of times they've been to other doctors and that's all they focused on is kill the bacteria.

And I really like to talk to my patients about yes, that's an important piece to the picture. But if you're only treating the bacteria, you're missing so much.

And in fact, a lot of times people don't get better.

## A Multifactorial Approach to Lyme Treatment

It's just about their they're basically chasing their tails of trying to, just treat bacteria because the reason is that this bacteria is so stealth, right?

It's a stealth infection. It's so good at changing its outer proteins, surface markers, which means our immune system can identify it very well. And when our immune system is confused, that leads to a lot of inflammation, a lot of immune dysregulation.

It affects so many systems of the body. So because it's affecting so many systems of the body, we have to make sure that our approach is multifactorial.

in fact, I really do like to start with things like supporting the detox pathways, supporting controlling that inflammatory response, which often will help support how the immune system functions.

And a big part of that is working on the gut. So we know that most of our immune system is located in our gut. So it's really important to make sure that's that's a big piece to most of my patients.

treatments, especially in the beginning, is working on their gut health. So I'd say those top four, you know, I often do these things before I even add in Lyme herbs or antimicrobials for Lyme because it's really hard for people to heal if their immune system is off and inflammation is really high, and if their guts aren't functioning as well as they should be.

Yeah. And if someone's gut isn't functioning properly, it actually makes it really hard to detox as well. And then you have to deal with the whole Herxheimer reaction being intensified.

And all of the issues that go along with having increased biotoxin load in the body. Exactly right. And another big piece too is something called LPS or lipopolysaccharide.

It may not be something that you hear about a lot, but we know in functional medicine this is a driving factor for inflammation. And LPS comes from gram negative bacteria.

Oftentimes what's overgrown in the gut, leading to the leaky gut and a lot of the digestive issues and symptoms like bloating, gas issues with bowel movements.

but yeah, these gram negative bacteria, they release these metabolites, the lipopolysaccharides, which can lead to the leaky gut and systemic or body wide inflammation.

So, so important that that's, worked on so that we can control that cytokine storm that's happening, and allow for their systems to actually fight this infection.

Ideally, you know, without the constant need of herbs and antimicrobials. Right. So what are some of your favorite therapies in dealing with this LPS?

Do you work on binding them in the gut and if so, what are your favorite binders for that? Yeah, absolutely. So I don't think we mentioned this earlier, but I also work for Biocidin Botanicals.

and I love this company because they really do focus on, you know, balancing the microbiome. That's really one of the key things that we do. And we know that that is such a key piece in supporting health in so many different ways, but especially for Lyme patients.

So one of the products that we have is called GI detox. And it is a broad spectrum binder.

## LPS, Gut Health, and Binder Support

And this is a great way to bind those LPS and other toxic metabolites and toxins that we're exposed to from our environment in our food, because when we have that increase in toxins, it's really hard for our body to function in other ways.

And especially Lyme patients tend to just be, you know, so bombarded with toxins. So a binder is a really helpful addition to lower those that toxic load and allow their bodies to detoxify better.

They bind to the LPS and other toxins and then help our body safely excrete it from the body. what are the binders that are in that detox. Yeah, yeah, it's a great combo.

It's a combination of activated charcoal, zeolite clay. it has humic minerals, aloe, pectin and silica. What I love about this binder, first of all, it comes in a capsule.

So it's really easy to take. And it's also not only has the binding, capacity, but it also has a few things in it, like the aloe, the pectin, and the silica that helps to bring moisture into the colon and can mitigate constipation.

We know that binders is, even though they're great at binding toxins, can lead to binding a little bit our bowels. And so we want to make sure, you know, we're still safely eliminating the toxins once they're bound.

So I love this binder because I have a lot of patients tell me their bowel movements are actually more regular when they're using it. And it's so important to make sure that that, you know, that all of the roots of elimination are working effectively as part of detox.

absolutely. Super important to get them out of the body, not just out of the cells. Exactly, exactly. So, yeah, besides binding the LPS, you know, the other thing is, you know, root cause, right?

What's what's causing the increase in LPs and other toxins and body wide inflammation is the overgrowth of bacteria and yeast. and sometimes parasites are present too.

But I'd say I don't know about your patients, but most of my Lyme patients have some sort of dysbiosis, right? They have overgrowth of bacteria Sibo. They have overgrowth of yeast or Candida.

A lot of times they do have parasites. So we have to address this in order for them to really, truly heal. and biocidin which is our flagship formula.

It's a combination of 18 different herbs and essential oils, which works really well to simultaneously go over multiple different types of pathogens so it can go after, you know, kind of a wide range of harmful organisms very successfully.

And it also can break down biofilm, which is a sticky mucus that the bacteria uses to hide behind. And this is really key because lyme especially can also create biofilm.

And it's how that bacteria hides and protects itself. And we often see a lot of deep rooted infections in biofilm. We see other toxins inside the biofilm.

And this is why a lot of people may feel better when they're on a protocol, but once they stop, they start to see symptoms again because those biofilm weren't handled appropriately.

So I love the biocidin because it has that ability to be broad spectrum, it also can break down that biofilm.

## Biocidin Formulas and Biofilm Support

And then the herbs are also immunomodulatory, meaning it can help to balance and support a healthy immune response. So it really works so well for Lyme patients, especially on their gut, and also for Lyme itself.

And I know that you have several different forms or preparations of biocidin And as a practitioner, what's your favorite? Oh, that's such a good question.

Again, it really depends on, you know, what's going on. Who's the patient is in front of me. Because the reason we have different forms is that it's the same 18 herbs and essential oils.

And each one, it's the delivery that's different. So we know with herbs and probably with medications for that matter. You know, when you use those medications or herbs locally where the infection is, it's going to work better.

And hence the the delivery is really important. So for example, we have a liquid in a capsule. The capsules actually have liquid inside of them. Those versus the best for anything local in the gut.

We also have a liposomal formula meaning it's emulsified in a in a lipid a fat. Ours is emulsified in a sunflower phospholipids. So it's nice. It's soy free.

But the fats help to drive it deeper systemically. So throughout the body it has about 74% higher intracellular absorption, which is extremely important when it comes to lime.

We know that's an intracellular infection. And this is also a version that can be used topically on the skin. So if I'm

dealing with gut I use the liquid typically because you can kind of titrate up and down really easily.

And then if there I'm really trying to work on the lyme itself or neurological issues or mold or something like that. Then I use the liposomal formula.

So would you if your goal is also to break down the biofilms, would you then focus more on the liposomal formula or. It depends like if we're talking like biofilms with lime that are more systemic than we would use the liposomal, if we're looking at other biofilms that like, say, opportunistic bacteria have created in the gut, then you would still want to use the tincture.

Yeah, exactly. Again, the formula itself is the same. So the herbs that have been studied in it, we know can go after biofilm in multiple different ways.

and I can go over that in a second. But if they're in the gut and those biofilm are growing in the gut, then I do use the liquid, or the capsules. And then if it's more sustained, it gets more really trying to get to that intracellular component.

Then I would definitely use a light Bismol version. Yeah. So it's really about location but both work equally well. at going after biofilm every once in a while you do need to add an additional biofilm buster.

But what's so nice about this formula two is it really can cut back on how many supplements you're using, because we know Lyme patients are on many, many different supplements.

Oftentimes that's warranted. But you know, it becomes financially a burden. It's it's physically and emotionally hard to be taking all those things all the time.

So it's nice when we can cut back on taking some of the supplements. Yeah, absolutely. Yeah. So walk us through what and I would imagine you practice somewhat similar to me from what I know about you.

So it's hard to say the word protocol, but if you had to give kind of like a sample treatment plan or treatment protocol, what would that look like using Biocide in as well.

Yeah. Great question. So as I mentioned before, I think it's really important to focus on the foundations of health. And I often do that first. So I'm working on detoxification.

And a lot of that is opening up Monk diaries which is our organs of elimination, making sure people are, you know, urinating and, and, eliminating their feces appropriately, that they're sweating, that their limbs is working appropriately.

So those things are so, so important to start right away. I often will use some additional liver support because we know the liver plays such a big role in detoxification, like glutathione own and a handful of liver herbs that I love.

but this is where I get the binder. And right away I find that it's really helpful to start patients on binders to mop up whatever's already, you know, building up there.

And then once we add in our antimicrobial herbs that often do create a die off, we have those those binders in there already to mitigate the hurting. So detox and binding first for sure.

then I'll often try to use some things that will help control inflammation immune modulation and gut. I'd say those three are really interconnected because I, as I mentioned most of our immune system really does come from the gut.

So this is often where I will use the liquid biocide in first. Actually, with my Lyme, patients really focus on their gut health. one of the other products that we have, it's a newer product.

It's called GI intercom. It's it's an amazing gut healing powder. so kind of like some of those other gut healing powders on the market, but it's a little bit different.

## Sample Treatment Plan and Gut Repair

Instead of glutamine, which we see in most of our gut healing powders, this one has a backbone of glycine L glycine. So the reason we chose glycine was that it's an amino acid.

That's really important for protein synthesis and connective tissue repair. So it has that potential to support the gut lining in the leaky gut. But it also supports the nervous system. Right.

We know that we heal better when we're in that parasympathetic state, that rest and digest state. And a lot of people are anxious. They're wound up, they've been sick for a long time.

So we really have to work on that nervous system, too. So the glycine does a great job of supporting things like mood, sleep, as well as digestion and healing the gut lining.

And then it also has some zinc harnessing a patented gel called Gut Guard. And it has quercetin, which is a natural antihistamine and also helps to heal tight junctions.

And then it has four botanicals camomile, lemon balm, ginger and aloe. So it's a really nice blend. It's very soothing, calming, and I find that people feel a lot better when they take that towards the beginning of their protocol.

So I like to really heal the gut lining. get the binders and the detox going. I always like to add probiotics. We have a spore based one called Pro Flora for R, which has a nice combination of some spores.

It's for those listeners that aren't as familiar with spores, because there's just so many probiotics out there. And I know it's overwhelming, but the spores are great.

They come from the soil. They're extremely resilient. So they don't need to be refrigerated or coated. They actually get through the stomach acid to the intestines, and they really help to recondition the gut.

So, you know, besides supporting a healthy microbiome, they also can support inflammation levels and immune modulation, lots of different activities that these spores have.

And in the capsule we also have some quercetin, that we mentioned is a natural antihistamine and a little bit of marshmallow and aloe. So it's super soothing.

Just one capsule a day. It's easy to take. So after I get the supportive things in first, then I will get people on the Liquid Bio site. And that's kind of actually my last step.

in that first phase, because I want to make sure people feel good, I want to increase their vitality a little bit, and that will a lot of times mitigate that. Horkheimer action.

That's great. So how long of a treatment time are we looking at with something like those? Yeah, that's a great question too. so the gut kind of immune and inflammation focus is typically at least for 2 to 3 months in the beginning.

you know, I feel like it takes people time. You know, it didn't happen overnight for them to get that dysbiosis and that imbalance. So it does take some time to correct that to really get to the deep rooted biofilm.

But during that time we may, you know, trickle in some other support, adrenal support. bio tonic is one that we have that's really helpful for that. I may add some lime herbs throughout that too, but I really feel like if we don't get that foundation first, you know, we end up going backwards a lot of time.

So it's worth to take the 2 to 3 months and really, really focus on it. Yeah, I definitely agree with that approach. Yeah. now there's been some studies done. Right.

Did yes. There a yearlong study done on the true Lyme with Biocide? can you tell us about that? Absolutely. Yeah, we're really proud of this. It's a year long Lyme research study that we did in Finland.

Dr. Liana Gilbert, did this. It was in vitro, but what she was looking at was the effectiveness of biocide and formula. She actually looked at both the liquid and the LSF independently.

to see if it was able to go after Borrelia and all the different forms, a spirit key. So all deficient form cysts form in biofilm. And she actually found that it was able to go after all those forms very successfully.

And one of the bigger things that was really exciting from that is that we didn't see the spirit kits collapse into a persist or form that cyst form, which we know can be much harder to treat down the road.

And oftentimes a lot of antibiotics that we're using, including things like doxy cyclin can push the spirit kids into that cyst form. So then you often need to add an additional antibiotic for the cyst form.

Right. And it becomes even more and more stress on the system. In the microbiome. So we found that Lyme was able to go or sorry that the Biocide was able to go after the Lyme, that the Barella and all the different forms without pushing it into that cyst form.

So that was really amazing. And we really do think that one of the biggest, you know, supportive things with our formula is that biofilm busting abilities.

So in the study, she kind of looked through the different mechanisms of action and how it works. And so we saw that, biotin was able to inhibit something called quorum sensing, which is how bacteria communicate.

## Lyme Research Study and Mechanisms of Action

So I like to think of this like a military strategy in order for bacteria to, to produce this biofilm, which, just so you know, can resist to 5000 times the antibiotic concentration that's normally needed to eradicate an infection.

So it's really potent. It's really strong. you they need to congregate together as a colony. So a lot of their herbs and biotin have been studied to break up that communication.

It prevents them from even forming that biofilm in the first place. Some of the herbs in Biocide and have been studied to inhibit the initial attachment phase.

So if they do end up congregating together, they'll attach to the mucosal lining, whether that's the stomach or elsewhere in the body, to start to form that residency.

So some of those herbs can actually prevent that binding over time. The biofilm like these little pockets can grow and swell and eventually they can burst open.

And then the individual bacteria inside can then translocate or you change location to other places in the body. So some of the herbs can actually inhibit that sorry motility and keep them localized.

The Arabs are antimicrobial, which we talked a little bit about, but they're actually able to go after the different, infections that are inside the biofilm.

And then finally is I think the most impressive is that a handful of the herbs in our in our formula are called efflux pump inhibitors. So I know there's a lot of jargon that I'm throwing out.

But basically the efflux pumps, they're found on the membranes of many bacteria, and they're responsible for

pumping out whatever's threatening it. So any time our immune system tries to take care of it, or antibiotics or even herbs, it just pumps it right out.

And that's how it's able to resist these stealth infections, these reoccurring infections, these superbugs. And so by blocking that efflux pump, we allow for those antimicrobial properties of the herbs to work better and really efficiently take care of the infection.

So those are kind of the five mechanisms of action that we see. in Biocide. And being able to address biofilm, which I think is really just so key, especially with such a stealth infection like Lyme.

I know that we all experience common pitfalls and obstacles when dealing with patients. Could you share with us what maybe a couple of your most common obstacles are with difficult patients?

Yeah, that's a great question. first I would say is many Lyme patients have so many comorbidities or other issues going on at the same time, right? So it's just kind of really taking a full picture and looking at what's going on and making sure that you're addressing not just the Lyme, but the co-infections, the mold and the mycotoxins, genetic issues. Right.

Where people may have difficulty detoxifying because of mutations in their genes, you know, the list goes on. but, you know, a lot of times when we are working on a protocol and we kind of feel like we've hit an obstacle, we can't move forward.

there's a few things that I may think about. So focusing and working on the adrenals is extremely important. If, you know, most of these patients obviously have been sick for a long time, they're they're tired, they're chronically ill, they're wired and tired.

It's really hard to heal when your adrenals are tanked. so that's something else that either I'll start with in the beginning or I'll definitely add in if we're not seeing progress fast enough.

One of the products that site and has is called Bio Tonic, and it's a Chinese herbal blends. Really. Again, kind of cool blend. It's a it's broad spectrum.

And what it does is it has adaptogens which help to support the adrenals, but it's not super stimulating because we know a lot of these chronic patients are wired and tired.

It's really balancing. So it helps to bring energy back into balance. It helps us support healing. It also has some digestive bitters in it, which is a really nice combo because it helps our bodies produce enzymes.

It helps to support things like bloating, but it also helps the body release bile, which we know is really important for binding toxins and helping to excrete them from the body, as well as supporting the microbiome.

So it has this ability to support healing. It supports the gut and it supports our ability to remove toxins. So I find when I put people in the bio tonic, they heal better, they heal faster.

They don't have as much hearkening. So I do find that that's really helpful, especially if people are really sensitive. Another one that I will do is oftentimes, you know, as great as Biocide is and it's good at going after biofilm, sometimes you do need some additional antimicrobial support.

There's definitely some lime specific herbs that I use. But another kind of broad spectrum, one that we have is called Olivia X, which is a potent form of olive leaf extract.

And this is especially helpful for gram negative bacteria, which we know that drives the LPs that we talked about earlier.

## Common Obstacles in Complex Lyme Cases

So especially people have a lot of, issues with recurring sections on a lot of inflammation. I'll definitely on the Olivia Rocks, but it's also great at going after stubborn yeast methane producing Sibo, which is a form of Sibo where patients often have constipation and it can be really difficult to treat and viruses.

And we know that viruses are also a big common, you know, opportunistic infections are really common with Lyme patients, and a lot of them are viruses.

I've seen Barr virus at a Megalo virus and so forth. So addressing that viral load can be really helpful for them to heal, too. It it takes away some of that burden on the immune system.

So I find those too. Adding those to it is really helpful. And then the last thing I would say is working on oral health. I know this is a little bit maybe not what you're expecting to hear, but and I don't know about you, but in traffic school, I just don't feel like we got enough knowledge about, you know, oral health.

We've learned how important it is that it's connected to systemic health. We learned to ask about mercury fillings, but that's kind of where it stops.

but oral health is so important. And unfortunately, a lot of Lyme patients do have hidden spirochetes in their gum tissue. And if they don't address those, it's really hard for them to get over that hurdle.

One of the reasons oral health is so important is because the connection between our gums and our circulatory system is only about a one cell layer thick.

So once we have inflammation in periodontal pockets, it's very easy for the gram negative bacteria and the LPS and other metabolites to translate into our circulation and get to really important organs like the brain, the heart, lungs, and so forth.

So we really want to make sure we support a healthy oral microbiome. I know we always hear about microbiome and think the gut, but the oral cavity has the second most, densely populated and diverse microbiome after the gut.

So really important to make sure we're supporting our oral health. And like I said, if there's spirochetes there it's it's really, really important to treat that.

So biocidin actually comes in a toothpaste comes in toothpaste called dentalcidin it has the biocide and formula in it. As long with it's got a little bit of clove and spearmint as a flavor.

It's in a non abrasive dental silica as a base and it's gluten free, sugar free and fluoride free. So really nice. Although all of our products are, you know, we really try hard to, to keep any kind of allergens out.

which is nice. And it's a great way to address biofilm on the teeth, which is plaque. We know it as plaque. That's biofilm. Along with the toothpaste.

We also have an oral rinse called Biocidin LS, LS stands for liposomal. So it's a liposomal biocidin that you use as a oral rinse, kind of like an oil pulling swish in your mouth and spit.

That one's especially really good for Lyme patients because of the deep rooted, you know, spirochetes will get really deep rooted into the gum. So this can get a little bit deeper than just the toothpaste itself.

They're made to be used together, but they can be used on their own as well. But really easy to use. Brush your teeth, rinse for two minutes and spit.

And that's pretty much it. and we've seen some really great studies with this too. We have a handful of dentists that are looking at, you know, taking samples and looking under a slide at their, at their patients gingival fluids, seeing spirochetes and gliding rods and amoeba and all sorts of bacteria.

And after using our products for four weeks, they actually saw a significant reduction in those in those bacteria. We also have a video on our, on our website that's pretty cool, showing the dental side and being added to a slide where there's lots of spirochetes and activity.

And after she adds it, it's able to kill all those harmful organisms. So, you know, really helpful to focus on oral health.

## Oral Health, Dentalcidin, and Where to Find Help

Besides, you know, the gut and everything else to. Yeah, that's a really good point. And I think that it's something, myself included, that, you know, we kind of forget about when we are looking at the rest of the body and it's kind of, you know, everything drains down, everything's connected, even with the whole, you know, Chinese medicines, system and, and acupuncture and all of that.

Like, every single one of the teeth are connected to a various organ in the body. So super important and awesome that you guys have products that you're able to use localized there.

Yes, yes. And we actually recently came out with an oral probiotic, which again was new to me until recent recently. So it's actually a tablet that you take and let dissolve in your mouth to support the appropriate microbiome in the mouth.

So let our listeners know how and where they can find you. if they would like to be a patient, as well as how they can find more information about Biocidin Yeah, absolutely.

So my practice is called wild craft medicine. You can go on to our website which is just wildcraftmedicine.com. We also have an Instagram @wildcraftmedicine as well.

So super easy we offer free 15 minute calls. and if you don't get me, I also have another naturopath that works for me in his wonderful and biocidin And actually you can order yourself, we are direct to consumer and we also work with practitioners.

We've got lots of education, both on the practitioner side and the consumer side. So it's just biocidin.com. We have a newer aspect to our website called Health Hub.

For any of you consumers out there that just want to learn more about our products and how it really supports all the different parts of the body that we talked about.

And for practitioners, you can sign up for a professional account where we have more specific information about clinical uses and research and so forth.

So biocidin.com is the place to go. Awesome. Thank you. Thank you, thank you. So much for joining us. And thank you everyone at home for listening and I hope this has been helpful and helps you on your journey to healing Lyme. We'll see you next time. Bye