Optimizing Peptide Therapy: Theories, Principles, and Breakthrough Innovations

Matthew Cook, M.D. interviewing
Isaac Eliaz, MD, MS, LAc

Matthew Cook, M.D.
Hi, everybody. Welcome to the Peptide Summit. My name is Matthew Cook, M.D., and I am speaking with one of my heroes, Dr. Isaac Eliaz, and we've been talking for the last 30 minutes, and just talking about stuff because I had 30 minutes of questions to get going on the the 10 hours that I would like to talk to him about. We have a lot of mutual friends, and for the last, basically, eight years, people are like, Isaac Eliaz this, Isaac Eliaz that, and so, then suddenly somebody proposed having him come on the Peptide Summit and he said yes. So, it's just the highlight basically of my whole year that you're with us, and I think that, for me, that's because you are one of the great thinkers in integrative medicine who, like us, has been very interested in some of the bigger procedures that can help detox patients with significant inflammatory problems, like with plasma, therapeutic plasma exchange and plasmapheresis, and some of those things. He is well known and extremely well thought of in the world of complex illness and Lyme disease, and also in cancer. He's an MD and has a background in integrative oncology as well as in family medicine, and so it's just my highest honor to be with you. I'm delighted to be here with with you, so thanks for joining us.

Isaac Eliaz, MD, MS, LAc
Yeah, thank you so much for having me, and yeah, we had a great conversation. I have learned a lot from the talk we had prior, prior to starting this interview, and I'm glad for the opportunity to make a contribution to this important topic, of course.

Matthew Cook, M.D.
Okay, perfect. This is one of the podcasts that my goal, my goal is just that I'm gonna talk to you six or seven or 10 or 20 times because I have that much that I could talk to you about. As we are kind of going back and forth in email, one idea that we came to was to have a little bit of a conversation around the overall scope of how to begin to think about complex illness and how to

begin to prepare patients from a detox perspective and in terms of some of the bigger things that you can do in terms of resetting immunity, autoimmunity, chronic infections, and inflammatory states. And so, we're gonna try to get into some of that because I think this is gonna be fertile groundwork that we can make that is gonna be something then that you could build on by starting to talk about peptides and stuff like that, but the framework of what we're gonna talk about, I think, is gonna be an important kind of background for people to understand. And so, maybe, with that in mind, tell me a little bit about, just a little bit about yourself, your thought processes in medicine, and how we got here.

Isaac Eliaz, MD, MS, LAc
Yeah, so I think my thought processes are a result of my life journey. You know, as a child, I'm a native of Israel. My father was a civil engineer, and as a child, we traveled with him to different countries, where he developed a watering system. So, I grew up early age in Ghana, then I grew up in Brazil when I was 10. I grew up in Korea, where I was exposed to Buddhism for the first time, and to yoga and to Tae Kwon Do. I actually used to practice with the national team of Korea because they had to learn English, so I was very fortunate. So, I had a multicultural upbringing that really prepared me for having a multidisciplinary view. And when I went to medical school, yeah, I knew I'm gonna do integrative medicine. I knew I'm not gonna be a regular doctor, but you know, I still survived the seven years that it is in Israel while studying Chinese medicine for three years. I organized a course in herbal medicine. Then I did a Master of Science in Chinese Medicine in the United States. I was very successful as a young doctor, and I felt it's too early, too soon. So, all these years, while I'm doing this, I always was engaged in meditation practice, since I was 16, and I had a big influence when I came to the United States at age 30.

I started training in Tibetan Buddhism, which I'm still training for decades. So, there's a part of me about meditation and healing. I learned and treated some of the most legendary Tibetan, no, Buddhist masters was in Malaya, and at the same time, while specializing in integrative oncology, which I was always interested in, I also was an active researcher. So, I have dozens of papers, I have multiple NIH grants, so I combined all of this, and with all this journey, all this journey allows you to really address complex diseases, because the trick, you know, about addressing complex diseases is really addressing the person. So, you know, if you really see the person, the picture will unfold. Through this very complex journey, and I tend sometimes, I used to tend to do very complex treatments, which I still do sometimes, I'm simplifying my life now, I realized that there is some kind of a very guiding principle in our healing, and the guiding

principle is that we lost the connection with our heart. You know, our heart is our greatest healer, and I don't know if we'll have time to talk about it today. There's a physiological reason for this statement, and really, when I looked at this epidemic of inflammation and fibrosis, what we see now with the COVID, for me, it's not a surprise. If you look at my patents and my inventions from over 20 years ago, they are all around the cytokine storm. So, in '95, I recognized and got involved with a specific protein called galectin-3, which is a carbohydrate-binding protein, a galectin-binding protein, and galectin-3 initially was implicated in driving the metastatic process in cancer. There was a very impressive paper in JNCI, that when you give modified citrus pectin, it can reverse it, and then I developed the first commercially available modified citrus pectin, PectaSol, and we now have over 75 published papers.

But as you looked at the effect of galectin-3, there are close to 10,000 papers, and you looked at papers on my compound, which are done by multiple universities, every disease, you know, you'll see renal disease and lung disease and liver disease and acute diseases and chronic disease and fibrosis. So, when I really looked deeper, I recognized the basic process that drives our aging process and chronic illnesses, and acute illnesses. That's the biggest finding of the last two years that I'm focusing on, and this is the survival paradox. It's really what we are built innately to survive, innately. So, if we are built innately to survive it just to be spontaneous, we can't control it, otherwise we won't make it, and this is where the sympathetic system comes into play, the part of the autonomic system. But then we have the parasympathetic system that really regulates it, and we can balance between them relatively easily, but then there's a biochemical response, and it's really, it's really triggered, one of the key proteins that triggers it is galectin-3.

So, on one level, my journey took me to understanding the extracellular, the pathways, you know, and how it affects the mitochondria and affects those M21 and HIF and PDK and PDH and, you know, and of course, in cancer, aerobic glycolysis, we can touch maybe later, but then it also looked at what we can do about it. So, now, when we look at what disturbs and disrupts our system, it puts us into survival mode, into a crisis. Then it's a whole gamut of things, right, from psychospiritual to psychological, to traumas, to mental, to emotional, what I would call, like, scars, energetic, emotional, to physical scars, to toxins, you know, to heavy metals, to more toxicity, to infections, and then, with all of this, we have our genetics and we have our epigenetics. So, how do we address the whole complexity? It's really, for me personally, I'm at a stage in my life of what I call unlearning, you know? I learned a lot, and then you kind of shed off the concept and you get a little bit of a deeper insight. And the survival paradox is a deeper insight because you

can see how it affects cancer, how it affects the cytokine storm, how it affects fibrosis, and it's specifically relevant for peptide therapy because you're trying to get the body to regenerate, right? You try your body to get to where it's healthy. So, if we look at the survival for somebody who's very young, a fetus, you know, like if we use stem cells, et cetera, their survival is growth, is regeneration, it's health, you know. When we get older, our survival is repair, and so the repair is driven by galectin-3. So, if you do an injury, I published very important papers, for example, in AKI sepsis, in sepsis that causes acute kidney injury in a very acceptable animal model, and you show that within minutes of doing this injury, it's a called sickle, it's a procedure, you show, within minutes, galectin-3 spikes. Only later, interleukin-6 spikes.

When I block galectin-3, when I give the modified citrus pectin, I attenuate the IL-6, there is no kidney damage, and there's a great improvement in the survival, from 60% deaths to 20% deaths. So, what happens is we want to see what puts us in a survival mode, and in this sense, your work and my work is not easy because we are bombarded all the time with EMF, with stress, with lack of sleep, with too much information, and with thousands of chemicals, hundreds of pesticides, and with heavy metals. So, it's an ongoing journey, where we have to understand we have to help our detoxification system. Detoxification is the first step, and if anyone has doubt about it, look what we do when we come to life. The first thing we do is we exhale, we detoxify. The last thing we do is we exhale. So, detoxification is a letting-go process, and the survival, the survival response is a holding, is a not letting go, right? Every cell has the wisdom to express itself and then die through apoptosis.

A cell that doesn't want to do it and goes into survival mode, doesn't accept the impermanence of things, that's what a cancer cell is. A cancer cell is a cell that decided not to die. Then what does it do? It creates a microenvironment, that you and I deal with all the time, right? How does it create a microenvironment? By bringing galectin-3, it creates lattice formations, five of them, that bind to different growth factors, inflammatory factors, immune evasion factors. It creates a lattice formation, literally coating, so the biofilm, it will be the basic structure of it, and then the microenvironment is very different. It's hypoxic, the receptors change. Insulin receptors go down, p53 goes down. You can get cancer pathways, you can get inflammatory pathways, you can get metabolic pathways, and mitochondria doesn't function as normal. Really, mitochondria in many levels is the smallest organism in our body, even within the cell, because it has its own boundaries. You know, it decides what to do a little bit. So, all of this we want to see in the big picture. The more we can see the big picture, the less we have to do. That really is it there.

Matthew Cook, M.D.
Okay. Okay. You gave me so much to question you about with that intro. So, I 100% love that. We're going to finish with the heart and all of that stuff because I think that that's crucial. You know, it's interesting to me, and it was interesting to read your articles, and I appreciated that because, you know, coming from a background, I actually am an anesthesiologist by training. And so, then one of the things that people will do from the anesthesia or the surgical world to try to begin to understand how a biochemical process would work around an organ is that they'll go in and then tie off the artery that goes to that organ, so basically kind of in an effort to kill it. And then that's fundamentally, I think, what happened with your study of acute kidney injury, right?

Isaac Eliaz, MD, MS, LAc
Yeah, this is, yeah, yeah. In one of the studies, one was a sepsis study, and the other was, it's called interim, it's called perfusion, reperfusion, exactly, which is what happens in cardiac surgery, you know, when you go on the heart-lung, and that's really, so that's what really happens in COVID. In COVID, actually, patients who have AKIs, so 40% of AKI, and 50% of them will die because basically the cytokine storm will give a message. The moment the kidney gets damaged, it's a game-changer because it's creative. There are some amazing papers on the topic. I mean, there's so much to talk about, not directly, but there are amazing papers where, with our compound, published by, not by me, by multiple centers, 1100 ICU patients, that they show the level of galectin-3 before cardiac surgery in patients with no preexisting, like, heart failure or kidney disease will determine very accurately who is gonna get AKI after the surgery. If you took-

Matthew Cook, M.D.
Right.

Isaac Eliaz, MD, MS, LAc
Yeah, so yeah, so this is, yeah, so you're right, it's a perfusion issue, which we are really having in a micro-level on the cellular level, right, when we have a microenvironment, right?

Matthew Cook, M.D.
Right, and so then, you know, I had always thought about that, and so we're always reading perfusion, reperfusion articles, and really about the liver, the kidney and the heart. And so, then that would be like kind of a trajectory of thought, that maybe I've been around kind of for 25

years, in a way, and you longer, but then I think that an interesting, and interestingly, that is almost kind of like a model of what's happening at a cellular level for people who have kind of chronic hypoperfusion, or maybe because of infections, they have hyperviscosity and clotting and decreased blood flow. But regardless, what happens is is this galectin-3 is this protein that is kind of helpful potentially initially in helping maybe prevent an infection from coming in, and it creates a lattice work, but when that is chronically happening, too much of it basically leads to scarring, where basically you'll scar off an organ or an area, and then that leads to fibrosis.

Isaac Eliaz, MD, MS, LAc
Right, yeah, so this is one pathway. So, the galectin-3 will drive the inflammatory pathway. IL-1b, IL-6, TNF alpha, they're all driven by galectin-3 through the inflammatory macrophages, and it will drive TGF better, but here is the thing, galectin-3 level will kill you acutely. So, what happened, you need galectin-3 for five minutes, five minutes, you know? We show in our studies, it's amazing, you look, look at CRP. CRP goes up a hundredfold between, like, under one and 100 when someone is very inflamed. IL-6 goes up one thousandfold. Galectin-3 will go up 30%, 40%. It's such an upstream that the smallest change will create, over time, a big change. So, we have shown, when we give MCP, and also when we do apheresis in rats, we actually do this kind of research as part of my work, we show that we are able to take down galectin-3 after two hours, but even if we don't, galectin-3 comes down after two hours, or eight hours. It's done its work, but it starts a crazy cascade of events. So, what happened, galectin-3 mobilizes the system, but then it causes inflammation.

It actually helps often to have an abnormal immune response, because one of the concepts of survival that we really have to understand, we are not the only ones who want to survive. The bacteria wants to survive, the fungus wants to survive, the virus wants to survive. So, if you look at COVID, the spike button of the COVID is almost identical to galectin-3. They are basic papers, so very important, and I was trying to get a clinical trial on such a cheap, you know, MCP, it's a hundred dollars a month, but it was so pharma locked, you know, I couldn't get a clinical trial, despite papers. A colleague I published with when she was in Harvard published an important paper in Mexico City showing that in the biggest hospital, in the ER, when a COVID patient came in, regardless of their involvement of their lungs, the level of galectin-3 in the ER determined who will get to the ICU and who will die at time of admission, and I published two papers on this, on sepsis and on post-cardiac surgery. When they walk to the ICU, a sepsis patient, no preexisting condition, and you check the galectin-3, you will know who will later get AKI, and

more important, who is gonna die. So, there's a whole field that I think we're all engaged in in trying to change the environment on a chronic basis, which is what we do in the clinic, you know, and on an acute basis, what I'm working now more on in an ICU environment. I think we have some fascinating solutions for sepsis, but this is not specifically for this topic. That's a-

Matthew Cook, M.D.
Well, and so that will be an opportunity for another talk. You've been a big researcher and a big, I would say, influencer on this thing that I wanna unpack for people, modified citrus pectin. So, what is this, and how can that impact galectin, and tell me what's going on with that, and tell me about your company.

Isaac Eliaz, MD, MS, LAc
Of course, so modified citrus pectin, I developed the first commercially available modified citrus pectin, PectaSol, in '95, and since then, we have published over, there were over 75 papers published on PectaSol. Some of them are mine, not all of them. Many universities, we did research with Harvard, with Columbia, with the USDA. You know, we are with multiple centers. Our latest paper is a multicenter trial in biochemical recurrence of prostate cancer, showing that MCP slows or reverses the biochemical recurrence. So, basically, MCP blocks galectin-3, and for this reason, it is, for me, it's a foundational supplement, because people, it's like when people, people really talk to me finally, and because I'm so busy with other stuff, know that I'm shy, but I'm busy with other stuff, and then they say, "Oh, my God, Isaac, this is the best-kept secret in town, people really need to know galectin-3 drives the inflammation," drives. It's not one more component. So, the problem is, let's say, you look at the studies.

Let's say there are, for reasons, it removes IL-6. It doesn't work because there are other cytokines. When you address galectin-3, you stop the whole cascade. So, in this sense, it's getting the recognition. I've made the observation on the rolling inflammation in fibrosis over 20 years ago, but it's finally got the attention about 10, 12 years ago, and now it has a lot of focus. So, galectin-3 has a neat thing about it. Not only does it block, modified citrus pectin, not only does it block galectin-3, but it also removes heavy metals. I published a number of papers. It removes some mycotoxins. It will break the biofilm. It is a prebiotic because it helps in this healthy survival. It's really a gift from nature, I really look at it in this way.

Matthew Cook, M.D.
For someone who, let's say, had mild systemic inflammation and some mycotoxins from an environmental exposure, and some mild to moderate symptoms of a systemic illness, like, let's say, Lyme disease, and you were gonna start, how do you start someone from a dosing perspective, and what time of day, well, how do people, how do you go through with that?

Isaac Eliaz, MD, MS, LAc
The optimal dose is 15 grams a day, and interesting enough, almost both mycotoxin and Lyme patients tolerated it very well, and I'll talk about it in a moment, why, because it has a very important, it regulates neuroinflammation in a very effective way. Galectin-3 drives neuroinflammation. The Alzheimer plaque has 20 times more galectin-3 than normal tissue, glia gets stimulated by it. It's kind of like, 'cause it has the same relationship with a microphage. So, you get to 15 grams, and if you wanna build it, you know, you can start with five grams. So, you either do five grams three times a day, most of my patient and I do seven and a half grams twice a day. You can take it on an empty stomach ideally, but you don't have to, you can take it as close to a meal as 10, 15 minutes. So, you know, 10, 15 minutes before a meal and before bedtime, these are good times to take it, but it doesn't have to be away from medicines or food as much as we thought. This was an initial thought in '95, and we have shown that it's not an issue.

Matthew Cook, M.D.
And so then, in terms of, like, you know, but a lot of times, people think about, like, some of the other binders that they take for mycotoxins. They'll take charcoal. The idea is you're gonna have to separate that from-

Isaac Eliaz, MD, MS, LAc
Not necessarily, it's not typical, no, but it's very different. Like, you cannot put modified citrus pectin as a binder. It is a binder, but as I explain to people, there are different binders and there's modified citrus pectin because of the effect on galectin-3. When you block galectin, in some people, it's dramatic, in some people, it will take even six months or nine months. We even know in our prostate cancer studies, we have people, after six months, only the ones who benefited continued, and some people who did not benefit decided to continue and they started getting results after nine months, and they're getting results after three, four years. So, it takes, each of us has a different physiology, different chemistry that affects us, but the idea is that, and because galectin-3 is so involved in joint health, for example, a lot of people will report improvement in

their joint pains, in the joint mobility. A lot of people will report improved memory. And so, I think that's one part that really is making this a foundational approach, and for me, you know, if you look at my charts from 15 years ago, I didn't give everybody modified citrus pectin, and it wasn't my first supplement. Now it's my first supplement, not because I'm involved with it, because the research is black and white on literally every condition, you know, And also, it helps, so naturally it will help to potentiate other treatments. So, for example, if you are doing, I mean, not talking specifically about cancer, when you're giving peptide therapy, where you're trying to change the pathways, you're trying to give the body a new direction, you really wanna make sure it's not going down to survival mode. So, one thing is using modified citrus pectin, but the other thing that you opened the conversation with is we've got to detoxify on an ongoing basis. So, in this sense, I think, in general, it's important to detoxify, and one area that I have to admit I knew, we all know, but I didn't pay enough attention to because it's like a given, is pesticides, and pesticides, I think, are driving, are driving chronic illnesses.

You know, if you look at the deterioration in the health of so many people, you can almost connect it to all these toxins that are, you know, like, you look at blood in the umbilical cord, I think I just read a study yesterday, 287 different toxic chemicals, on average, getting to the fetus already. So, I've been doing a lot of work lately on how to remove pesticides because MCP does something, and we're actually now starting a clinical trial. I developed a very neat supplement, called Glypho Detox, that specifically takes glyphosate and other herbicides, so it has a number of binders, but in a sophisticated way. And yeah, initially, the feedback is great, but the idea is that we have to detoxify, and we have to detoxify all the time because we live in a toxic world. So, detoxification is what we talked so far, a supplement, and a detoxification also internally. When we have an interaction, do we respond with a negative emotion, which we all do, you know, I do, you know, everybody does, or can we respond with an open heart, you know? Then it's actually a different, we are less toxic, and that's the idea. So, we can detoxify or we can transform, so there is a transformative healing effect in the body, and at the end, when we talk about the heart, I will explain it, yeah.

Matthew Cook, M.D.
Okay. So, then, I 100% agree with everything that you're saying, and then it's kind of interesting just to, for, like, a young doctor out there or someone, I've got a lot of pre-med medical students, and so we're talking about this. Just hearing how you're speaking is exactly how a wise doctor

should think. I love just listening to you, and if somebody comes in and you're concerned about pesticides, how do you like to test for that?

Isaac Eliaz, MD, MS, LAc
You know, right now, I use Great Plains.

Matthew Cook, M.D.
Yeah, me too.

Isaac Eliaz, MD, MS, LAc
That's the most agreeable test. You know, I think they're reliable. Again, a lot of these companies are not interested in research, you know, like, you know, I know it because I try to get their support to do trials, but I think it seems to be a reliable test. We have to know that a urine test is tricky because we don't know where is, you know, it doesn't really reflect what happened two or three years ago, or maybe it does and the tissue is shedding. I don't like to, like, induce, like, with heavy metals, because you never know which tissue is gonna give it and when. So, you know, like if you give the MPS before, let's say, checking mercury, you know, it comes from different tissues at different times. So, I think I'm getting a good sense off the urine, and I see a difference, like, when I treat people, the GLP and the glyphosate, you know, the glyphosate and the general toxins will go down and the patient will improve, and in this sense, it's very interesting. You can sometimes do it, I mean, with supplements. You know, when they take the PectaSol, I definitely see a difference, but that's where, sometimes, you've gotta go into therapeutic offerings, where you really, yeah, where you really have a system, you know. And why do you do it? Because many people have, you know, have genetic and SMPs, and they don't detoxify well, and we're all aware of it. It's like you are doing the work for them, especially for patients who are struggling, you know, patients who are trying to get better and trying to get better. The idea that they can sit and something is happening outside of their body, so there are no side-effects, it's happening outside of their body, and it's doing the work for them is conceptually, I know, it's really, it's a different concept, especially for a patient-

Matthew Cook, M.D.
So then, no, I'm so big on this, and that's why I'm so excited to kind of be connecting with you, but just to sort of highlight what you said, I think it's important that, maybe when I was growing up in Western Montana, eating all of my food from a garden, I remember there was an idea in

my family that, like, we didn't need to really focus on detox because we never, basically, we ate 100% organic, a healthy lifestyle all the time. Now the world is so toxic that even though I eat only organic, I have actually incorporated a lot of detox strategies into my life, you know. For quite a while, I used your product, and I'm coming back to it, and so I'm a fan of that. So then, here we go, we're doing all of these detox things and kind of working on ourself, but then suddenly, you go, is there a way in medicine and science that we can detox the body in a more substantial way than just, like, some detox strategies, and then that's what we're talking about with apheresis and plasmapheresis, and so you're just at the top of my list on this. And so, then tell me, what is happening with this? Tell me how you do it because it's interesting for people to hear.

Isaac Eliaz, MD, MS, LAc
Of course, and just before this, I want to touch on the pesticides again.

Matthew Cook, M.D.
Okay, yeah.

Isaac Eliaz, MD, MS, LAc
And then we'll go to this. Nature is wise. So, if you look at pesticides, they affect our soil, our ground, they affect our plants, which affect the animals that eat the plants, and they affect our waters, so nature provided us with solutions. So, for example, if you look at Glypho Detox, my product, so I use shilajit in fulvic acid from the soil that shows it can bind glyphosate. I use alginate and kelp. There are different binders, but alginate is more of a binder. Kelp also is a nourishment, so I give nourishment, and I use a special pectin, not modified citrus pectin, a high molecular, a higher stratification pectin, which binds in the gut, and then I use glycine as the fueling because it's similar to glyphosate. So, I just gave it as an example, that we always want to tap into the wisdom of nature and then go into the detail, and you are somebody trained in Chinese medicine as well. You really understand it. So, looking at this and understanding how we are bombarded, the concept of apheresis as a way to detoxify is a key concept, not only to detoxify, to change the extracellular, and as a result, the cellular environment of the patient. Now, it's not a permanent thing, but when you change the environment, you know, the environment, as you are changing the environment, the person is becoming different. You know, I collaborate, really, with the top apheresis people in the world, and you know, some people, you know, the chief editor of Journal of Clinical Apheresis, et cetera, and so I actually got to speak. I spoke in the three last ISFAs, International Society For Apheresis, before COVID, 2015, 2017, 2019, and I spoke at

ASFA, and actually, when I spoke, I presented some data. I brought the concept that, you know, people are changing as we do apheresis, and we can one day tailor-make apheresis based on 3D printing, you know, interesting. One of the leading people, he really came to me and said, "Isaac, I actually got you, I can see this happening." So, the idea is that we use apheresis to create a different environment, and then you put in your peptide, and then you put in your IVs, and then, and so what it does, it changes the environment. So, in oncology, I will use it pre-chemotherapy, pre-radiation therapy, as close as I can to the beginning, and especially pre-immunotherapy because all the PD-L1 inhibitors don't work when there's a lot of inflammation. And while I'm developing, personally, a column to remove just galectin-3, the more generalized apheresis is available, it removes a slew of inflammatory compounds and oxidized lipids. So, when you remove oxidized lipids, they have a great affinity to positively charge heavy metals. Very important, you know, so you're removing heavy metals. So, often, I would integrate chelation into the process actually, and I will support the shedding of toxins. You've got to know how to do this, not right away, but by using phosphatidylcholine during the apheresis, and then I have specific IVs afterwards. So, it's not the regular apheresis, but what it does, if you do it correctly, it is very unusual for somebody to feel depleted post-apheresis. Most people feel better. People who are very toxic, it can take a few days.

The thing is that it's a helpful tool, but it can not be a standalone, you know. We have to integrate it with everything that you and I and people like us are doing and developing, and I have to admit, kind of talking to you, I kind of see the next generation, you know. I'm now more in my reflection age, you know, in doing research, you know, teaching, still tweeting, of course, but I'm very focused. Therapeutic apheresis is my thing. It's the one thing that, like, I do, you know, that's the focus of the clinic. That's really what we do because it does take, it is a specialty, you know, and then there are more generalized apheresis, like, you know, plasma exchange, which I used, of course, for different conditions, but it was fascinating for me, what we are talking. In 2019, I was in Japan. It was in October, November, just before the COVID in Kyoto, and there was a session about new horizons for LDL apheresis, okay? And a very famous German clinician said the idea that he thinks it can be used in inflammatory conditions. You know, like, like as a discovery, you know? You, like, crack when you hear it, you know, of course it can be used! It's the most important use, you know? So, for people with mycotoxins that are struggling, it's really, it really can be a game-changer, and sometimes it's a lot of treatments and sometimes it's only a few.

Matthew Cook, M.D.
So, then, I would echo that, and so then, if you imagine that mycotoxins are neurotoxins.

Isaac Eliaz, MD, MS, LAc
Right.

Matthew Cook, M.D.
And then they're floating around. They get in our body, and they start to float around in our bloodstream, and so then, when you do, basically, imagine blood's coming in, and then it's gonna go through a process, a filter of some kind, and that filter might separate out lipids, or it might separate out plasma in general. And so, then, there's gonna be what we do now, but an evolution because of people like you, of being able to create a separation, and so the blood comes back, but then we can pull something out. So, then this goes back to our kind of detox strategy. If you think of all of physiology, go back to anesthesia, often, one thing happens, and then a whole bunch of things happen as a consequence of that.

Isaac Eliaz, MD, MS, LAc
That's correct.

Matthew Cook, M.D.
And that initial thing happens here, and then that drives another reaction and another reaction and another one, and then each of those drive several reactions. And so, you can go from zero to a hundred, and then we could call that a cytokine storm.

Isaac Eliaz, MD, MS, LAc
Exactly.

Matthew Cook, M.D.
And then, if we went from zero to 20, but we were constantly doing that, that might be something that would be kind of like what's going on with a lot of complex illness patients.

Isaac Eliaz, MD, MS, LAc
Right.

Matthew Cook, M.D.
And so then-

Isaac Eliaz, MD, MS, LAc
Yeah, if you go to 10, yeah, if you go to 10, if you go to 10, it will be like inflammaging, you know, that we have, like, almost subclinical.

Matthew Cook, M.D.
Yes! Exactly, and so then, with that in mind, you have a cytokine storm, chronic illness patients, and then basically people like you and me, that are just looking to repair and maintain and stay young, but have some inflammation. And so then, within that, then imagine that there's a molecule that's central in driving that inflammatory process, and then galectin-3 would be one of those molecules, and so we can pull that out.

Isaac Eliaz, MD, MS, LAc
So, I would say, again, this is my work. Nobody's able to do it yet, but the galectin-3, once I'm done with my column, it will be done, but galectin-3, you know, I work with some very renowned people from Harvard. I did some papers with David, David Sachs, who discovered MHC tools, the basic immune recognition, and I remember he sent me an email, something you can share, when he came and he saw our work with large animals. He says, "Isaac, you know, you really have something." We just shut down inflammation, you know, shut it down, the abnormal inflammation. The beauty and why I think galectin-3 is a central protein is because it can still be expressed locally when it's needed. You're not stopping the expression where it's needed, you're just cleaning up, and that's why PectaSol, modified citrus pectin, is so foundational. I'm mentioning the name because, you know, I am like many other innovators, there's always borrowed science, where people borrow your science and put out. Because modified citrus pectin is a generic name, anybody can take a pectin and call it a modified citrus pectin. So, all the research was done on a specific modified citrus pectin, but yes, but of course, you can't do only this. You have to address the other thing, and that's the beauty of the picture, but you know what? Your analogy of the little bit, 20%, 100% is great, and sometimes you need to do 100% for literally a few minutes and then stop it. So, when we are young, we can regulate it, right? When there is a cut on a baby, it heals without a scar. If we get a cut now, we're gonna get a scar because our injury repair is different. Definitely.

Matthew Cook, M.D.
And so then, that, I think, then brings up, from a trajectory perspective of integrative medicine, where we have this big opportunity, because, you know, if you say, what's the defining conversation of our sort of next 10 years, then I think it's gonna have the word COVID in the conversation somewhere because it's such a, it's just gonna be a problem that, you know, hundreds of millions of people are going to have to deal with, and some of those having long-term consequences of it. You know, I, in parallel, we're setting functional medicine and setting some of these big things and realizing, my conclusion, and I think your conclusion, you can't do one without the other because they're so dependent, but you really can't do the big interventional things without having a baseline concept of a strategy. And so, then, if you were to then build on, well, here we have 10%, 20 to 30%, 100%, cytokine storm is 100%, 10% is inflammaging, and so then we begin to think about things that we can do. And so, one thing we can do is we can do some of our sexy IVs, where we can pull inflammation out of the body.

Isaac Eliaz, MD, MS, LAc
Right.

Matthew Cook, M.D.
We could have, as your number one supplement, modified citrus pectin, which is gonna begin to affect certain proteins in a certain way, and then, also, is gonna help quite a bit with detox and doing some binding. Other directions in terms of strategies, then interventional procedures that you would build on kind of as next ideas after that.

Isaac Eliaz, MD, MS, LAc
Yeah, you know, so I would now put into the detox, addressing pesticides because we get them with the food. And also, we have to realize, you can grow organic, but where you live, the airplanes landing in SFO are probably flying above, so you are being showered with lead all the time, you know, because planes, plane fuel is leaded fuel. It's still leaded, you know, and people don't know it, so you grow organic in the garden, and sure enough, it's full of lead. So, we have to address it, and I'm usually, I'm a non-alarmist person, you know, I'm not tight, my whole philosophy. Then, I think, we need to look at very basic things that are very, very, very challenging. So, in Chinese medicine, there is a concept between how much the patient can do and how much the doctor has to do, and we start by going all the way to the doctor, intervention, et cetera, and then we wanna do less and less and less and less and less. The sage

in Chinese medicine, the doctor's sage, is the one that doesn't have to do anything. You just meet with the patient and everything changes, so we need to do what we can do for our life. So, I think a fundamental thing for us is to move our body, and to move our body in a harmonious way. You know, now there's a big movement for exercise, but it's becoming very competitive. People run marathons and, you know, and get their pulses to insane levels, which, in my opinion, is not balanced, you know? It creates oxidative stress. So, create movement, create movement physically, create movement emotionally, create movement behavior, really be open-minded, you know. One of the issues that you know so well, you went, you know, you were working in an ICU. I mean, it's like, look, and doing things that are so different. You know, when we have something that we're not familiar with, we either fight it or we ridicule it, or we have fear of it, which are really survival responses, right? So, the fear is isolation, it's a microenvironment. It's the lot, it's the fighting, it's the fighting approach, it's a cytokine storm, so you can see it in patients. So, in this sense, we have to look at our body and see what can really change our body, and if we look at our body, you know, mate, it's amazing. I'm rounding the number up a little bit just so it's convenient. We are made out of 50 trillion cells. Not a million, times a thousand is a billion, times a thousand is a trillion. We can't comprehend this number. You know how many reactions every cell has in a second? I didn't know, I admit. Take a guess.

Matthew Cook, M.D.
10,000?

Isaac Eliaz, MD, MS, LAc
That's what I thought. Close to a million reactions a second, okay? So, can you comprehensive that this body of 50 trillion, having 100,000 to 1 million reactions per second, is all working together and not falling apart? If that's not a miracle, I don't know what's a miracle. How does it happen? It's this mutual support, mutual support between cells, between tissues, but it's driven in most tissues by survival. So, the tissue knows, sometimes I'm gonna get more blood, like, now I digest, and then, when the body is jogging, I'm gonna get less blood, and then, you know, we're gonna work around it, you know. And so, every organ in the body, every tissue, every cell, wants to get clean blood, and it lets go of dirty blood. That's the basic detox and nourishment, and in the membrane, we have the transformation, things change. So, the only organ that functions differently in the body, that is built to take our toxins, if it doesn't get it, it won't survive, is our heart. Our heart gets dirty blood. It's fundamentally a different organ, and it gets it with no discrimination if it functions normally. it doesn't say, I'm gonna take it only from the liver or only

from the brain, it takes it from everywhere. It connects with the universe, right, with the breath, where our personal drama, for the universe, is nothing. Our toxicity for the universe, it can contain it, except when we start hurting our environment, right? That's the problem now. And then what the heart does, it gives without discrimination. That's the survival of the heart. In my book, "The Survival Paradox", I've expressed this concept in my book, "The Survival Paradox", which I published a few months ago. It bring these ideas in and goes over all the major diseases, cancer, autoimmunity, kidney, heart, detox, healing the scars of survival, and freeing from the survival paradox, which I clearly explained this. So, the heart gives, and what the heart does, the heart, who does the heart nourish first? The heart first nourishes itself through the coronary arteries. So, the heart nourishes itself in order to nourish others and as part of nourishing others, and what's also interesting, I was thinking, interesting, it's kind of an analogy I came up with, you know, I didn't find it anywhere, is that the heart gets blood supply only after it finishes its work. The blood is outside of the heart. It's the only organ in the body who gets its blood supply after the fact, you know? The blood is already out, and that's part of the transformative qualities of connecting with the heart. I call it open heart medicine.

That's the infinite healing power, and each of us has this potential, and in this sense, that's where amazing healing happens. So, in my work, when I have time, and the COVID definitely disrupted it, you know, with hands on, I work with a person, I teach meditation and healing a lot, and I try to help this, and for the patients with toxicity, it's very helpful. So, this is all nice, and it's practical, actually. I have a whole, very detailed meditation and how to make it that goes all the way to cellular biology and epigenetics, but putting this aside, why is it practical for somebody with mycotoxins or Lyme disease or chronic pain? It is because these people are hooked into a pattern. They are hooked into a pattern of pain that has physiological effects, right, biochemical effects, but also has neurological effects. They have one symptom that reminds them that, you know, somebody who, after a headache, will get, let's say, night sweats, oh, I have a headache, I'm gonna get night sweats. There's a certain neuronal connection that happens, and we need to disrupt it, we need to stop it. We need to allow for different things to refresh, and that, for example, is the great benefit of neural therapy, right, of injecting scars. You know, you inject a scar with procaine. It's insane, think about it, you inject a scar with procaine. Sometimes it gets better by 10%, sometimes by 50%, but it never comes back. The body forgets. So, in the same way, we want to also do the things on an emotional level, on a psychological level, and this is where the real hope for healing is. This is a place where we know that not everybody will be a miracle, but anyone can be a miracle because everything is changing all the time, and that's

really the basis of our work. We are trying to change how the tissue functions, but for the tissue to function, the thinking has to change, the feeling has to change, and then the physiology. So, we come to it from both ends, and in my journey specifically, one journey was this galectin-3 and finding how to move from scarring and fibrosis and starkness to change the environment so the cells can get oxygen. And then my meditation journey, you know, that also is the same, and they kind of met, and in many levels, the apheresis has a connection there because the apheresis is done outside of our body. You know, it's bigger than the body, right? It's done outside of the body. That's a little bit kind of connecting a few things together.

Matthew Cook, M.D.
Okay, okay. You know, we studied, I did a lot of Qigong studying, so I'll give you my thoughts on what you just said, and they talked about that the emperor resides in the heart, and the emperor wants peace. And so, most of my meditation experience was either around yoga or around Chinese medicine, but we did, you just reminded me, and I haven't thought of it in a while, but we studied in the Huichol shamanic tradition with a shaman named Brant Secunda, and he was an interesting guy, who was a Bay Area guy, who had studied with the shamanic people. These would be native, almost kind of like Native American, but in Mexico, shamanic people. In their imagination and their unconsciousness, the animal of the heart is the deer, and then what happens is they connect to the universe through their heart, so just kind of a, when you said it, I go, oh, that's just like what they talk about.

And then, interestingly, what happens with inflammation, you know, we talk about toxicity, you know, now, basically, we're finding that if you get metals down, coronary artery disease gets better. And so, there's an inflammatory part of the inflammation in those heart blood vessels that are primarily flowing when the heart's relaxing that's toxic. I think that, fundamentally, things like galectin, things like mycotoxins, you know, those things are probably implicated in cardiovascular disease. And then you brought up neural therapy, and people may not know what that is, but basically, you can take, if there's a scar, and inject that scar with procaine, and this comes from Germany, and basically, I think it's a really, very good idea. And probably a third of what I do in my life, I feel like, is somewhat derivative of neural therapy because I've been doing ultrasound-guided injections around peripheral nerves as an anesthesiologist, and then I had heard about neural therapy, and so then I started looking at scars with an ultrasound and doing injections. And so, we have quite a bit of experience using procaine, but using growth factors and peptides and other things.

Isaac Eliaz, MD, MS, LAc
Of course, yeah, you're mixing with it, but it's amazing 'cause you, with ultrasound, can even look at internal scars. Wow, that's amazing.

Matthew Cook, M.D.
Exactly, and so then, a lot of times, if you look at a scar, you'll see it go down, like at an angle, and so then we'll put our needle right into where the scar is.

Isaac Eliaz, MD, MS, LAc
Wow, that's amazing.

Matthew Cook, M.D.
And then it was interesting because I had heard about this. We started doing, quite a while ago, you know, 60, 50 years, doing an approach to treat the fight-or-flight nervous system called the stellate ganglion block 'cause the fight-or-flight nerves live right next to the rest-and-relax nerves. They're in between two muscles called longus colli and longus capitus in the front of the neck. And then, what we do is we come over the brachial plexus, and then we come basically deep to the jugular vein. Right next to the carotid is where these nerves live, and then we put a local anesthetic there and basically put those nerves to sleep, and sometimes the vagus nerve, but you don't have to do it just with local anesthetic, you can do it with other molecules as well. And then, what that does is that resets the balance of fight-or-flight and rest-and-relax, and then one of the most profound things that it will begin to impact is the heart. And so, now, as a way to kind of think about, as a way to engage just in this conversation, but then to think about something like heart disease, you have this spectrum of inflammation, that could be inflammaging, that could be toxicity, and then that toxicity could be metals, it could be things like pesticides and stuff like that. There could be an imbalance of fight-or-flight, there could be kind of a spiritual aspect of what is the heart, and so then trying to think about all of those things is interesting.

Isaac Eliaz, MD, MS, LAc
Yeah, it's amazing, wow! These tools, I mean, your patients are very fortunate that you can do these things. You know, when we look at this, we have our genetic makeup. If you look at how many people made us, you look, every generation is 25 years, right? So, two, 50, is four, 75 is eight, 100 is, you know, right, is 16. You go to 1500, an infinite number of people made us, so we have

infinite, we are all connected, we are all. There's no way that going back 10,000 years, one of us hasn't had a mutual parent or relative, it's impossible mathematically, but the genetics, the heart will change. The epigenetics is really, you know, is really where we make a change. There's a famous biblical Jewish saying, "Everything is predetermined, but we have the choice." The predetermination is our genetics, the choice is our epigenetics. So, often, when we heal ourselves, so if we have a healthy lifestyle, it helps our epigenetics. When we heal from our heart, it's a multigenerational healing, and in the book, in my book, when I talk about healing the scars of survival, I talk about my grandmother and grandfather from the Holocaust. I'm named after my grandfather, Isaac, and then the trauma I was holding in, I had this, you know, unexplainable, very strong chest pain, with some sclerosis in the upper back, but since the age of, like, 14, and I knew its deep. And then, when I healed it, now, as of five, six years ago, no more pain after 50 years, you know? I can, like, breathe. Everything is more open, it's like insane, but then it changed the way my mother is relating to the Holocaust, and I didn't tell her about it. So, it went to my grandfather and it affected the next generation, so this is the real power of feeling. When you do these injections, you are allowing somebody to get to this level of feelings. The heart doesn't have to hold all this older, generational, conceptual, traumatic information, and then the people recalibrate. Then, if you give them peptide or regenerating power, they're gonna go in the right highway, you know?

Matthew Cook, M.D.
Yeah. So, then, that is 100% my belief system, and so then I always tell people that there's often multigenerational trauma happening. So, your grandfather died in the Holocaust?

Isaac Eliaz, MD, MS, LAc
No, he didn't die. He made it, but he held his trauma. He died at age 50 from stomach cancer.

Matthew Cook, M.D.
Yeah.

Isaac Eliaz, MD, MS, LAc
In 1950, I think, and my grandmother died just in 2007 at 98, and when we were at her grave, my mother's suddenly telling us, you know, because they're buried one next to the other, and my mother is telling us, you know, she didn't have the right number, she said 10 out of 12 siblings were killed by Hitler. It was five out of eight. Then I went back to check. We were never told this,

you know. Here I am, you know, I'm almost 50 years old. None of my siblings, we are five kids, knows it. We were like, wow, he never talked about it. It was stomached in his stomach, he couldn't handle it. He got stomach cancer. My grandmother, she was a fighter. She led them to escape and she survived two cancers, lived to the age of 98, you know, each one a different pattern. And my mother was very successful in life, an amazing woman, still alive and healthy in her late 80s, mid 80s, but then she never could talk about the Holocaust. You could never see a movie, but when she would meditate next to me, she would come to my meditation with me, and when she would meditate just next to me, memories would surface for her just from meditating close to me, you know, and then she would interpret them sometimes a little bit differently. But then suddenly, after I had my own healing, she suddenly went to a ceremony about the Holocaust and was watching some movies about the Holocaust she would've never watched before. Something suddenly shifted in her. And so, this is just my own example, and there are, of course, many other examples, but it's the power of healing, and so it really is a multidimensional healing. And it's really interesting, you know, this galectin-3 and MCP is interesting. We talked about nature giving a solution, because MCP is a powerful chelator of lead. It's the strongest chelator of lead. You know, when we manufacture it, we have to use special peels that are lowering lead from special areas in the world and special pipes because most fibers, pectin binds to lead so easily, especially the specific. So, it's a powerful chelator of lead, of mercury, we published on arsenic, sorry, on uranium, all the positively heavy metals, and that's why it's probably one of the mechanisms of the cardiovascular help beyond the galectin-3, you know, because of its help. So, yeah-

Matthew Cook, M.D.
So then, you know what? We always had this idea, I learned this when I was studying energy medicine, and you know, I was using this term, and you could think about parents and kids, but you could also think about kids and parents. There's this song, I always like to reference this song if I can, but there's this song that John Prine sang called "Sam Stone", and it was about someone who came home from Vietnam and was addicted to heroin, and everything went kind of horrible and he dies. There's a line in the song, and it says, "Little pitchers have big ears, don't stop and count the years, old songs never last too long on broken radios." And so, the idea is little pitchers, these little kids, they have big ears, they remember everything that we say.

Isaac Eliaz, MD, MS, LAc
Right.

Matthew Cook, M.D.
And so then, and then you also, your mother also remembers everything that you say, and so then, like, and then, often, what I feel like is psychically around trauma, that there might be some expression of pain and trauma that's unresolved. And so, then everyone has an idea that it's unresolvable because it hasn't been resolved by the family.

Isaac Eliaz, MD, MS, LAc
Right.

Matthew Cook, M.D.
And so then, one way that you could define that would be with the word karma, but then that's coming along, coming along, coming along, and then you heal it. And so, then they're all looking at you and they're realizing, oh, he healed that. Oh, okay, that means we're probably gonna heal from this.

Isaac Eliaz, MD, MS, LAc
Right, yeah.

Matthew Cook, M.D.
And so then, that is-

Isaac Eliaz, MD, MS, LAc
Yeah, totally, so this is when it's verbal. In my case, I never told my mother because I couldn't share with her that my trauma was because of the Holocaust, and I had certain things I cannot share because of the sensitivity around even, you know, around the healing. It was so deep and so much forgiving that for Israelis and Jewish people, they won't accept that it's possible, so I don't even share, and I don't want to share here because, you know, people are going to hear this.

Matthew Cook, M.D.
Nobody's listening to you, you can.

Isaac Eliaz, MD, MS, LAc
But, you know, just because there were certain people in charge of the Holocaust, that I could feel their suffering, and anyway, but when the healing happened in this, the beauty is that I really didn't have to say it. For example, my mother, her father died when she was 17, and she could never go back to the moment all her life, never thought about it, and then when she was meditating with me one day, suddenly, you know, we don't do it a lot, the memory came back. So, it's what happened, it's me allowing my space to get bigger. It was a non-verbal, you know, effect, and that's the power of the mind, but the real power of the mind is the power of the heart, because the mind is driven by concept, the heart has no concept. You know, the electromagnetic field of the heart is the biggest field in the body. You know, every cell in the body is affected by what's happening in our heart, and that's the power of heart medicine, so, you know, and it's the vagal nerve giving so much information from the body to the brain, you know? So, when you're opening this, you are opening the communication. You know, it's remarkable, what you said, and then, of course, the heart will change.

Matthew Cook, M.D.
How did you heal yourself?

Isaac Eliaz, MD, MS, LAc
It was through this, through my meditation practice and certain inner work and psychological work, and kind of not, it's what happened when things surfaced up, deep insight, so the different meditation techniques, but the ultimate meditation, definitely not our talking in such a conversation. It is like the most esoteric meditation in Tibetan Buddhism, there is no meditation, everything is free. It's very hard, like right now, I'm talking to you and I'm meditating, and just like I will be sitting. There is no separation. It takes decades of training, and some people get lucky and find it. It's hard to find there, but you know, and I had an opportunity to study with great teachers, so I have some, a little bit of this, not a lot. So, what happened, when the issues come up, they just get freed, and then, when they get freed, it's like a bird flying in the sky, like writing in water, it disappears. If you hold it, analyze it, it just becomes another pattern. So, the idea is that when insights come, to come, like, you know, like I'm talking to you now, but my thoughts, mate, are coming from, I feel my thoughts coming from the heart. I don't feel them coming from the head. So, then it's flowing, it's moving, and then it is a different healing power, but-

Matthew Cook, M.D.
That's how I do it too.

Isaac Eliaz, MD, MS, LAc
Yeah, I know, I was gonna tell you.

Matthew Cook, M.D.
I try to.

Isaac Eliaz, MD, MS, LAc
You naturally do it because of what you shared with me today. You actually naturally do it and you are trained in it, you know, a lot of the energetic work, the shamanic work. I mean, you know, for someone like you, for someone like me, we are so fortunate. Every patient is amazing, every day is amazing compared to algorithm-driven medicine, and in this sense, we almost feel like, you know, I open my heart to regular doctors, even if they don't agree with me. I'm not trying to convince them, it's a waste of time, but they are really good people who just went on a path that didn't allow them to open their eyes, you know. I was fortunate, I went to medical school knowing that I'm not gonna do it, knowing, I started knowing that I'm not gonna do it with our medicine. I survived. You know, it was hard for me to finish medical school, and I was a pretty good student, but my professors were not happy that I'm going to an alternative field, but it's a different way of seeing things, you know.

Matthew Cook, M.D.
So then, it's interesting because then this might be kind of a good kind of final direction for us in closing, and then I'm gonna, we're gonna talk a whole bunch. My impression is, which is you're awesome, is that, you know, I am reading, you know, I pulled all of your articles and read all of your articles, and they don't read like alternative medicine, they read like clinical physiology that was done at UCSF, you know. They're basically, they read like basic science, but then the secret of medicine is being kind of connected to your heart, and then helping to tell yourself something of a story about how you are healing and what's happening as you go through this journey. And so, we talk about the hero's journey when we talk about trauma, and we talk about, and you know, for me, it's interesting because to the hero's journey, it's always changing. As you get better, your story gets better and you evolve and learn, learn to kind of go through it. But I think you hit on something that really is the truth, and I think, directionally, integrative medicine is just going to

adopt more and more science and more and more basic lab research. Then, if you can wrap that around kind of a coherent thought process of being a human being, where, as you reset physiology, it has a side-effect not just of having you be healthier, but having you be maybe spiritually calmer at some level.

Isaac Eliaz, MD, MS, LAc
Yeah, it's so true, you know, it's, I mean, you know what? I think this conversation reflects it, you know, and your work reflects it. And, yeah, on one level, you know, I have an NIH grant, so I publish with major, really, with leading authors in the fields, you know, and I can share with them whatever they can hold, you know, and they can hold their own belief system. Sometimes I know that certain, I can get certain results that are even not comprehendible by them. Like, the people cannot comprehend that degenerative liver or kidney disease can be reversed, but it can be reversed, you know. So, you have to work in, I speak their language, and I've learned, not in the easy way, to stay within their language, but then, for example, in my book, "The Survival Paradox", in my work in the clinic, in my meditation and healing retreats, then I really teach the whole, you know, and I share the whole picture, and the idea is to empower the patient to really connect with their infinite healing power, but in order to do this, then we have all the methods that we talked, you know, today. So, yeah, it's fascinating. I can only imagine where you're gonna be in 10 years. I would love to see.

Matthew Cook, M.D.
Oh, I'm kind of, I just started to see that. So then, let me say, let me say, so this is the Peptide Summit. So then, let me say some ideas that, sort of, I have, and kind of some trajectories of where things could go 'cause I think that that's interesting. So then, we are talking about inflammation and then physiological pathways that could, one expression is cytokine storm and COVID and organ failure, and then another expression is inflammaging and basically the toxicity of life that causes us to kind of get worse. Sometimes that is driven by an infectious process, sometimes that's driven by a toxic process, or sometimes that's driven by a handful of other things, but let's say infection and toxicity would be high on that list. And then, often, there's an inflammatory response, and so then we would, me and you would be thinking about plasmapheresis, plasma exchange, some of the other things that you're doing that will pull out lipids, for example, which I think are extremely interesting. Surrounding that, immune peptides and the immune kind of the peptide concepts, things like Thymosin Alpha-1 was one of the

original ones, which regulates immune response, and so I find that one fairly interesting 'cause if it's too high, it can come down. If I can pull out some toxicity, it will work better.

Isaac Eliaz, MD, MS, LAc
Of course.

Matthew Cook, M.D.
Things like, I really like the fragments of thymosin beta-4 better than thymosin beta-4, so like fragment one to four, fragment 17 to 23, also known as TB-500. And so, then, these can really have a fairly profound effect on regulating and modulating inflammation, and so you'll see them bring inflammation down, and we'll use them for everything from neural therapy, like around nerves, to systemically, to even IV, and then we'll find a lot of synergy between that and things like plasmapheresis. Once you start to detox people, one of the things that you mentioned early on is in the setting of fibrosis and toxicity, one of the first things that happens is our mitochondria, which make our energy become dysfunctional. So then, there's a variety of peptides that stimulate mitochondria, and so then, as you begin to kinda, but I find people do a lot better if you regulate immune function and work on toxicity before you add those in. And so, then, that's kind of an interesting idea, and then there's other things on a supplement wellness front, and so you have that whole category and constellation of things. And then, there's the bioregulator peptides, both orally and injectable, and so there's bioregulator peptides for blood vessels, the heart, three for the brain, three for the immune system.

And so, then, now there are small molecules that, in fact, may have more to do with epigenetic expression than anything, so they're going in, but they're so small, they go in and affect the transcription. And then even in terms of, like, mycotoxins, we're looking at, like, the GENIE test, looking to see if people are printing inflammatory genes, watching that come down, and then using kind of a constellation of all of these ideas. Then what I'm gonna do is we're gonna talk more about this, but then, directionally, we have basically all of kind of the IV-functional medicine that existed before you, which was before Isaac, but we'll call it before Isaac and after Isaac. Vitamin C, glutathione, antioxidants, all of those things are great. Then we've got these kind of bigger interventional things that really detox the body, and then, within peptides, regenerative medicine, stem cells, exosomes, now we have a constellation of things that can begin to regulate, balance immune expression, and then begin to optimize biological health for

everyone, from the sickest of the sick to people that are just living their lives. And so, then that would be some of the direction, where I see things going in the next year or two.

Isaac Eliaz, MD, MS, LAc
Totally, yeah, and probably even longer, yeah. This is beautiful, you really outlined it so beautifully, it's amazing. I mean, it's nice if you can do it in a year or two. It may take longer, but, I mean, it's really, it's quite amazing, your approach. Yeah, really.

Matthew Cook, M.D.
Well, almost everything I do, I've had hundreds of conversations about you, I can't even believe I'm talking to you, but I'm standing on your shoulders on anything that I'm doing, I have to admit, so I'm grateful for the work that you did. I've loved hearing about the hard work that you've done. I studied Tibetan Buddhism a little bit too. Have you ever heard of Lama Lar?

Isaac Eliaz, MD, MS, LAc
I think, but I'm not sure.

Matthew Cook, M.D.
He's Caucasian, but he's a Tibetan, a Buddhist teacher and monk, and he's hilariously funny. He would always talk to us and then make us laugh hilariously, and then mention something, like, really true, and then he would say, "You were too blocked to understand what I said, so I had to make you laugh so that you could receive it," but I'm delighted that people got to receive you and understand a little bit about you, and I think, kind of, we understand, I understand, A, what a great human being you are, what a thoughtful physician you are, and so I'm grateful for the scientific and spiritual and medical research that you're doing. So, thank you for being with us.

Isaac Eliaz, MD, MS, LAc
Thank you so much for having me. What a great conversation, and I am going to bug you with some more conversations in the future.

Matthew Cook, M.D.
Okay, perfect, I can't wait.

Isaac Eliaz, MD, MS, LAc
Thank you, thank you.

Matthew Cook, M.D.
Okay, thank you.

Isaac Eliaz, MD, MS, LAc
Bye.

Matthew Cook, M.D.
Bye.