



## **TH1 and TH2 Shift + Ozone Therapy in Chronic Illness**

**Dr. Eric Gordon, M.D. interviewing  
Frank Shallenberger, MD, HMD**



### **Eric D. Gordon, M.D.**

Welcome. Welcome to another edition of Mycotoxins and Chronic Illness. This is 2.0. We're here again. And this time, we'll have a chance to talk to Dr. Frank Shallenberger. Dr. Shallenberger is just a very important man in my life, 'cause he's the person who really helped teach me about ozone and make me realize how important it is in all of its many uses. He's also inspired me to really pay attention to the mitochondria. And we're gonna talk a little bit about both of those today, but we're gonna concentrate on Dr. Shallenberger's approach to chronic infections and how he looks at this. Something that's been an interest of his for a long time. And I think he wrote his first paper about it in the late nineties. So, without further ado, welcome, Dr. Shallenberger. And pleasure to have you with us. And so tell me what got you interested, actually I'm gonna start with what got you interested in chronic illnesses in the first place?

### **Frank Shallenberger, MD, HMD**

Well, I guess that's a good question. I guess they just started coming to me. You're probably in the same boat, but after a while, you just get all these patients that have seen so many doctors that just do more or less conventional, kind of restricted to conventional approach and they're not getting anywhere. And so they end up on our



doorsteps and you say, okay, what the heck is this all about? I got a patient here and they've seen board specialists and all these people and nobody can actually figure out what the heck's going on. So at that point, you have to dig deeper and say, well, what was it that they didn't teach me in medical school that I'm missing here.

**Eric D. Gordon, M.D.**

That's what I love, is I think that makes doctors like you special is that you go back and you actually think about what's happening in that individual. And that's something that I think has been part of your approach to really thinking about metabolism. So maybe we should even start there. 'Cause I know that's been a driving interest of yours, is human metabolism. What makes energy? So, and-

**Frank Shallenberger, MD, HMD**

Yeah, that's exactly right. That's sort of my big baby, if you wanna know. And we talked a little bit about ozone, but I got into this whole thing because after I learned about ozone back in the eighties, started using it on my patients and it just worked with almost everything I worked on. It doesn't matter if it was an infection, autoimmune disease or cancer, whatever the heck it was, ozone seemed to be applicable and worked pretty well with that patient. So I'm thinking, why? What is it about ozone that is so applicable across the board? And then I started thinking, well, what is ozone? It's oxygen. It's high potency oxygen.

What does oxygen do in the human being? Oxygen really only does one thing. And that is, it's our energy source. We get energy from it. And then you sort of realize, well, what's the most common complaint I get in my office? It's, I got low energy. What happens to us as we get older? As we get older, we go through this aging thing, things start breaking down. We become more vulnerable to disease. But what's common to that? It's lack of metabolism. You could just, I mean, we all know this. The metabolism just goes straight down in a linear fashion, absolutely associated with aging. So when you add all of that stuff up, you gotta start thinking, metabolism must be at the bottom of almost any problem we ever have. And then, what I started to do is I started actually, and we talked a little bit about this, but I was measuring metabolism and it didn't take me but a couple years after measuring it to



notice, hey, you know what, the people that have good metabolisms never get sick. They might get a cold or flu, but they don't get anything serious. And the people that have lousy metabolisms, they're the ones that are sick with these diseases. So you add all that up and here we go.

**Eric D. Gordon, M.D.**

Yeah. Well, but it's getting to first principles. This is one of the things that I always like to emphasize to patients is that the doctors who often lead the way and I consider you one of them, are people who think with first principles. You say, you don't just, it's not all the stuff they made you memorize in medical schools, not the cookbook medicine that we were taught, some of it now, unfortunately, is mostly the diet in medical school. But it's thinking from first principles. And that's what you've done. And what's interesting is that I know that you've applied it a lot to aging, but you've also used it to look at chronic illnesses. And so, can you talk a little bit about how you've seen the overlap between people, the aging process and the folks who are getting ill now at 2030?

**Frank Shallenberger, MD, HMD**

Well, yeah. So that's an interesting thing. It brings me back to a study I published in 2004 where we took 50 young people between the ages of 30 and 40. All of them were quote healthy, a completely asymptomatic. Most of them were very active and athletic. And so, I took this group of people and I studied their metabolisms. I studied how well their mitochondria processing oxygen. Amazingly, only about 52% were perfect underneath that. So 48% of them were less than perfect, even in their thirties. And I'm gauging them against other 30 year olds, not against 7 year olds. And this was amazing. 12% of them, where had the same mitochondrial function is like 70 year old person. Now these were healthy. They were asymptomatic. Not complaining about anything. So this is early onset problems. Okay. But you gotta look at those group of 50 people and you gotta ask yourself, who's likely to be the one that gets sick here? Is it gonna be the 52% with normal mitochondrial function? Or is it gonna be these 12%? And so it starts at an incredibly early age. I didn't go back into the twenties, but I will tell you, and you've seen the same as I have. People in their thirties get stuck with the things that they can't get over and what's up with that, I have to



think that we're looking at a subset of the population that has certain problems that just makes them vulnerable when something comes along.

**Eric D. Gordon, M.D.**

Yeah. And one of the things that I believe, because I said, you've been practicing just a little bit longer than I have, is that we've seen this sicker younger population increasing especially over the last 20 years. I mean, it used to be rare to see teenagers who were bedbound with anything except very rare, strange diseases or trauma. And now, we're seeing them-

**Frank Shallenberger, MD, HMD**

Yeah.

**Eric D. Gordon, M.D.**

In our offices. So there's a lot of them out there. So something is happening that is exposing the vulnerabilities earlier, that's definitely happening.

**Frank Shallenberger, MD, HMD**

That's for sure. Childhood cancers are up, childhood autoimmune diseases are up, childhood sleep apnea. What the heck? It's just pretty crazy.

**Eric D. Gordon, M.D.**

Yeah. Yeah. We talk a lot about the toxicity of the planet and it seems to be happening. And what I'm interested in is this ways that we can do our best to help those people, the way you have of measuring metabolism is something maybe we'll just talk a little bit about, because it's so interesting. I don't think many people are aware of it and I don't know many people who actually use it other than you. So can you just explain a little bit about how you measure metabolism?

**Frank Shallenberger, MD, HMD**

Yeah. First of all, Eric, let me just say that metabolism is incredibly important. Why don't we hear more people talk about, well, actually, the scientific literature's full of it. But why don't we hear clinicians and doctors, people like that, talk much about it?



Simple reason, they're not measuring it. And if you don't measure it, you don't know what you're doing. So the analogy is, it'd be pretty hard to diagnose and treat blood pressure without a blood pressure cuff. You gotta actually measure things. Then number one, you know something's wrong. And number two, you know by monitoring it, if what you're doing is actually fixing the problem. So that's sort of the big thing, hardly anybody's actually measuring mitochondrial function these days. But the way you do it is surprisingly easy. It's about the biggest no brainer I think, I can think of in medicine. You hook yourself up to this gadget that looks like a scuba mask and it's connected to an analyzer that's basically gonna only analyze two things. One, how much oxygen are you processing? In an amount, how much oxygen are you processing? And two, in real time, how much CO<sub>2</sub> are you producing? Because as we process oxygen into energy, we release CO<sub>2</sub>, turns out that the better your mitochondria are functioning, the more oxygen gets consumed, the less CO<sub>2</sub> gets produced. So all we have to do is just look at that ratio.

**Eric D. Gordon, M.D.**

Wow.

**Frank Shallenberger, MD, HMD**

The ratio of CO<sub>2</sub> to O<sub>2</sub>, there are analyzers that do that. The main thing is when you get all this data, and there can be like a hundred pages of data in a test, you gotta have a computer program to analyze it and sort through it and give you a pertinent information and throw it in the various algorithms. And that's how we do it. It's really, it's a no-brainer.

**Eric D. Gordon, M.D.**

Yeah, no, and that's really important because I mean, something that you talk about is that, and we see this in our patients, is that when you're healthy, usually, you're pretty good at burning fat for energy and through that electron transport chain and making water as the end product. And if you're not so good at it, you wind up burning sugar and making carbon dioxide is your end product. So that's, yeah. And that's often what happens. I think that's why many of our chronically ill patients are stuck on glucose because they're just not able to-



**Frank Shallenberger, MD, HMD**

Absolutely. Absolutely. Yeah. It requires more things to be in a row to burn fatty acids than it does to burn glucose. Glucose is pretty easy to burn. It's the last thing to go. If you can't burn glucose, you got diabetes. Things are really starting to hit the bad time, but the very first thing to go is exactly as you pointed out.

**Eric D. Gordon, M.D.**

Yep. Okay. That's-

**Frank Shallenberger, MD, HMD**

Now, by the way, let me just mention for the listeners, if they wanna learn more about how we do this and measure energy in mitochondria, just go to YouTube. And in the search engine, plug in Shallenberger, Disease is optional.

**Eric D. Gordon, M.D.**

Oh.

**Frank Shallenberger, MD, HMD**

I've got a YouTube series in there, it's not long. It's a pretty short series but it'll go in detail and explain, number one, why this is important. And two, how just very fascinating it is to have the ability to measure somebody's mitochondria and how we do it.

**Eric D. Gordon, M.D.**

Yeah. And that's really, I think that what the exciting part of this is because we keep trying to do it with blood tests. But unfortunately, they're not great, partially because, when you measure chemicals in the blood, we forget that many of the things that we measure are involved in multiple reactions in the body. So we don't get clean answers. It's not like because you measure your, people are often measuring their, lots of tests, their succinate and their malate, and the fumaric acid, all these things that are part of the Krebs cycle. But these chemicals are used for lots of reactions. So



we're not able to be so clear, but like I said, it's like many great ideas, you brought it down to the basics. Oxygen-

**Frank Shallenberger, MD, HMD**

Yeah. Blood tests are just kind of a snapshot in a way. The analogy kind of, would be, you can get an electrocardiogram on a patient, tell you a little something about their heart, but if you really wanna know about their heart, you put them on a treadmill and you stress them, and the whole time, then you're looking at the cardiogram. Now we're getting something in real time. We're seeing a real movie about what's going on versus just getting a little snapshot.

**Eric D. Gordon, M.D.**

Yeah, yeah, yeah. You got it. It's life and life is in motion. You gotta do it that way. That's great. So I'm really glad you have that resource for people because I think it's something that I know most doctors don't know about. And if you're really curious, it's a good tool. I especially like it for the people who are interested in longevity. The healthier folk I find, it's even more eye opening to them because many of them, like if you're a weekend athlete, you might not realize how far you have slipped.

**Frank Shallenberger, MD, HMD**

Yeah. This stuff gets you even while you're asymptomatic and feeling good. It's that 10 year period that leads up to disease where you actually feel good and don't know that you're going down that road.

**Eric D. Gordon, M.D.**

Yeah, yeah, yeah. Unfortunately, many of our patients and our listeners are in that phase of life where they're having to struggle with the system not functioning well. So even though they could be 20, 30, 40, they are already having fatigue at minimal activity, which we would hopefully never have. When the system works well, you get to live to whenever you're gonna die and you die or something, but you don't have that period of exhaustion and fatigue.





**Frank Shallenberger, MD, HMD**

Yeah. Yeah. Good point.

**Eric D. Gordon, M.D.**

So I always wanna switch over to, unfortunately, the chronic disease people, you've done a bunch of work looking at immune function and how that immune function often gets skewed in chronic illness. So tell us a little bit about that work.

**Frank Shallenberger, MD, HMD**

I discovered this first back when I was studying AIDS and I was so interested in the fact that back in the eighties, we were testing all these antibodies. So we're testing antibodies for everything. All the viruses, antibodies for Canada, antibodies for lyme, whatever, all these antibodies. And from doing that after a couple years, I realized, you know what, these people that I'm seeing with these chronic illnesses, they have high antibodies too, like all kinds of things, not just one thing. It's sort of like, they're antibody factories. And they're having antibodies to stuff we all get exposed to. We all have antibodies to these things, but these sick people had way more antibodies. So then, back in the nineties, I read this really crucial paper where they were looking at men with AIDS versus men without AIDS and so forth and so on.

But the bottom line was, in this paper, they talked about two aspects of the immune system. One would be the Th1 system with the helper cells and the suppressor cells. And the other would be the Th2 system which produced the antibodies. And what they were able to show in this paper in 1993 was that the controls, the quote healthy controls, were already shifted away into producing too many antibodies. They were already in a Th2 dominant state where they're just making all these antibodies. And we were just having a discussion before we started this, about how these antibodies create problems all by themselves. We like to think, well, antibodies are great and everything, oh, well, everything's wonderful unless you get too much of it. And so we started, so that's what turned me on. And I started looking at the reason people getting sick is not so much the thing that actually initiates the process which could be a bacteria, or a virus, or a petrochemical or whatever. But it's the imbalance in the





immune system, this Th1 to Th2 shift that actually is responsible for them being vulnerable to it.

**Eric D. Gordon, M.D.**

Yeah. I mean, you bring up a really important point that I always like to remind people of, that the trigger, we spend a lot of time looking for the trigger for the illness, because sometimes we remove the trigger and it does make a big difference. So it's always important to do that, but unfortunately, most of the time, when illness is persisted for a few years, and you're not getting better, the trigger is no longer the dominant force, it's your body's response. And that's what you're talking about, is that persistent habit of the immune system. And so tell us, I mean, so you look at that as a, well, tell me more about how you look at that.

**Frank Shallenberger, MD, HMD**

Well, yeah. I started studying it, looking at it and saying, well, okay, what's causing this shift? And it turns out it's really fascinating because certain triggers tend to trigger the Th1, certain triggers tend to predominantly trigger the Th2. And then what we learned was, that when the Th2 is triggered, it shuts down the Th1. It actually inhibits it. When the Th1 is triggered, it inhibits the Th2. So it's sort of like, the body is saying, I'm Th1 I've got this, we don't need your antibodies right now. Or the Th2 is saying, nope, nope, you need us, antibodies, right now. So I'm gonna just shut down the Th1 innate system so that we can concentrate on the antibodies. So they actually suppress each other. So what I wanted to do was look at and say, okay, what's in the literature as things we can look at that stimulates predominantly Th2? And what's in the literature really surprised me in a way, one was parasites. Parasites selectively stimulate Th2, they don't stimulate Th1. Petrochemicals and pesticides selectively stimulate Th2, not Th1. Vaccines. Vaccines selectively stimulate Th2, not Th1. And fungal infections predominantly stimulate Th2, they don't stimulate Th1. And that got me going, 'cause all of a sudden, something's starting to make sense to me. We got these people, they might already be in this kind of a shift, where the Th2 is overbalanced and then they get around these things and it'll selectively push them right over the cliff.



**Eric D. Gordon, M.D.**

Yeah. Yeah. No. And the thing is, and what makes it even more interesting is that sometimes, some of the bugs will actually shift the immune system a little bit in that way to protect themselves. They'll kind of like pushes a little bit towards that Th2 system. So we kind of leave them alone.

**Frank Shallenberger, MD, HMD**

A lot of these bugs are intracellular. The Th2 antibodies can't get to them, like viruses in particular, but the mycoplasma, they're intracellular, that Th2, the antibodies don't do that. The only thing does that is Th1. You better be having your Th1 up, or you're not gonna get to so many of these infections, you can't get to them. You can stop the free floating organism, but to actually get to the factories that are making them, forget it, it's useless.

**Eric D. Gordon, M.D.**

Yep. Yep. Yep. It's interesting like how so many of these, the Th2 are, now I'm thinking about it, there are often things we've been exposed to, I think of the parasites and the fungus. We've grown up with them, so much of that, and the petrochemicals and how we make antibodies. And if we get rid of them, those antibodies go away usually.

**Frank Shallenberger, MD, HMD**

Yeah. Yeah. It's like a backup system.

**Eric D. Gordon, M.D.**

Yeah.

**Frank Shallenberger, MD, HMD**

You don't wanna predominantly be making antibodies. That's your backup system in case somehow Th1 fails for some reason, or you need extra help.



**Eric D. Gordon, M.D.**

Uh-huh. Uh-huh. So, at this point how do you work with people to try to rebalance that?

**Frank Shallenberger, MD, HMD**

Well, yeah, there's the art of medicine in a way, right? You're looking at individual people and you're looking at, first of all, I wanna know about petrochemicals. I didn't mention heavy metals, but heavy metals tend to poison everything, the whole package. So we kind of wanna look and maybe go back in history. Good clinicians, they're gonna spend a lot of time on the history. What is the sequence of events? I like tell my patients, you know, it's like we're going into a crime scene, in a crime that was committed 20 years ago. So we're gonna have to go back and pull out all the old data and look at the sequence of events and try to determine what got this person here. But I definitely wanna know a vaccine history. I definitely wanna know where they're working with chemicals, toxins, pesticide, are they a farmer? What was their history around things like that. I definitely wanna know antibiotic use, 'cause the antibiotics is pretty much, everybody knows now, just stimulate all these microtoxins and all the mold and put us into a Th2 type of thing. And yeah, we can look at antibodies. I don't typically look at them anymore because it seems like a waste of money. I just know they're gonna be all way high and they aren't very helpful to me. But one of the things I like most though is that ozone therapy, pretty much all by itself for the most part, will solve this problem. If you take out the offending causes.

**Eric D. Gordon, M.D.**

Yeah. I think that's one thing that I've often found so interesting is how the ozone can kind of get that stuck immune system unstuck. It's stuck in a habit pattern, a loop, and ozone seems to give it, I mean, do you think it's because it's changing the structure of some of the antibodies or do you have any thoughts? I mean, 'cause I said, I've read some of the literature on that, but I've never been certain, I quite got a good picture. Like, how does ozone-



**Frank Shallenberger, MD, HMD**

I think it's about cytokines and cytokine balances. And so cytokines, for the listeners, are these molecules that the immune system cells utilize to talk to each other, to orchestrate the total immune system response. 'Cause this immune system response is a lot like an orchestra. There's all kinds of parts that have to be working properly. And it changes on a fairly rapid basis, very quickly. It can change the immune system wants to change. And this whole thing's run by cytokines. And what we know from studies going way back into the early nineties, in fact, is that the major thing, well, one of the major things ozone does is, you take a Th1 cell or a Th2 cell, don't matter what you're taking, or both of them, take both of them, expose them to ozone, they instantaneously start correcting the cytokine balance all by itself. Don't ask me how it does it 'cause I don't know that any of us really know, but it's very conclusive. A lot of good studies have been published on this, that if my cell is supposed to make a certain cytokine, like IL-2, and that's what I need right now at this particular moment in time and myself's not making enough IL-2 to keep the system in balance. If I expose that cell to ozone, it starts making up to three, four times more IL-2. It's a automatic regulator.

**Eric D. Gordon, M.D.**

Yeah. I think the regulation is what we see. And that's something I think that, what's difficult for doctors anyway, is that we tend to think of interventions as drugs. And when we have something, ozone, to me, works more like herbs in the sense that the body gets to decide what it needs to do with it. When we give a drug, the drug's kind of like a hammer, it's gonna pound something in front of it no matter what it is, whether it needs pounding or not.

**Frank Shallenberger, MD, HMD**

Yeah. Yeah.



**Eric D. Gordon, M.D.**

The herbs and ozone is a much more, ask permission, is this the right thing for you to be doing before it makes its move. And it really allows the body to make a choice of which direction, and rebalance itself. I think-

**Frank Shallenberger, MD, HMD**

Absolutely, well said. That's exactly right.

**Eric D. Gordon, M.D.**

Oh yeah. Yeah. And one of the things that I've always been interested and really appreciated, another thing that I learned from you was the usefulness of rectal ozone. Because in the early days when I first started using ozone, it was a little bit in that I was just, oh, this is powerful medicine and it's intravenous and that's what makes it powerful. And I kind of like thought all those people using rectal ozone, oh. I'm kind of, I didn't realize it's utility and how effective it was. And just tell us a little bit about the history, if you will, or just how effective you have seen it be.

**Frank Shallenberger, MD, HMD**

It's an underutilized form of therapy, 'cause really, nobody wants to get tube stuck up their rear end. They don't mind a tube in their vein, but the tube up the rear end, it's just got some issues around it. That said, it's a very brilliant and very fascinating form of therapy because first of all, where's that tube going? It's going in your large intestine. And if you put enough gas in there, by the way, it will come out the mouth. We've done that before, you put enough gas in there, you're gonna treat the small intestine right down at the jejunum. So disease starts in the intestine in so many people. So number one, we're going right to the heart of why a lot of people are sick just by putting it in that particular location. Number two, the ozone travels straight to the liver and the liver is such a regulating force. It takes stuff out. It puts stuff in. It's sort of like the second brain in a way. It's busy just monitoring like a thermostat, just taking care of everything. And that liver's gonna get all beat up. If you got a Th2 overbalance with all these immune complexes and immunoglobulins floating around, that liver is just gonna get beat up. And so those two reasons alone are



enough to account for why rectal ozone is an underutilized way of doing business. And we do it an awful lot in the clinic. We do a lot of blood treatments and other ozone treatments too, but that's one of the more valuable things we do.

**Eric D. Gordon, M.D.**

Yeah. Yeah. I have seen on your rectal ozone, especially for people who are fragile, if they start very, very low, tiny doses, because it will gently allow the liver to begin to detox better. And you know the problem we always have with the really sick folks, if we do anything quickly or strongly, it doesn't work. It just gets-

**Frank Shallenberger, MD, HMD**

Really good point. Another thing I like about it is our patients can do it at home. They don't need us.

**Eric D. Gordon, M.D.**

Yes.

**Frank Shallenberger, MD, HMD**

So that saves them a lot of money, saves them a lot of inconvenience. And in a perfect world, really, every all our listeners would have their own ozone generators at the house and they would know how to use them.

**Eric D. Gordon, M.D.**

Yeah. No, no, really. I think that that is so true because I remember the data from Cuba showing how you really can mimic the effect of the lvs if you do enough rectal ozone at home all the time.

**Frank Shallenberger, MD, HMD**

Absolutely.

**Eric D. Gordon, M.D.**

It's really amazing. That's one thing, if you could just, 'cause you're the man who I always feel knows the literature on ozone more than anybody, and just for our



listeners, 'cause I realize we're talking a lot about ozones, though it's something that people are aware of and accept as real. And if you mention it to the average doctor, they're just gonna say, oh my God, what are you talking about? This is toxic. You're gonna inhale it and hurt your lungs. That's all people know is that it's a toxic substance. But I think, we're talking about very, very low doses and obviously, not inhaling them into your lungs. No, we can't use them in the nose, but we gotta be very careful. And have training, don't go home and do that. But just a little bit, just maybe two, three minutes 'cause I know you can talk about that. I've heard you talked about it for an hour about ozone itself. Just why is it so special? What's different about ozone from oxygen and maybe how important it is to make sure that if you are using ozone, that you are using oxygen to make the ozone.

**Frank Shallenberger, MD, HMD**

In the kind of like, maybe the first thing I wanna say is, you can go to the The American Academy of Ozonotherapy website. Everybody can do this. And it's aaot.us, aaot.us. You go to that website and you click on the library tab. You will pull up 3,500 abstracts on the clinical and scientific use of ozone covering almost any disease. You can search that website. So the first thing I would tell somebody if they don't know about ozone in medicine, hey, how about understanding that there's over 3,000 published papers on this and peer-reviewed journals. It's for real. The second thing I like to remind people is that ozone goes back to the 1850s. We're not looking at any brand new here. It was used in medicine in the late 1800s. Tesla was the first person who developed a factory to produce medical grade ozone generators for use in medicine in 1896, Nicola Tesla. And we have some just giants, Rankin was using ozone. We have all these giants over the years that have used this. So we have a very rich history with this. It's not the new guy on the block. And so, for listeners, if you don't know what it is, we take pure oxygen, which is  $O_2$ , two oxygen atoms kind of stuck together. Oxygen doesn't travel by itself. It needs to pair up and share electrons. So the oxygen that we breathe in is  $O_2$ . So you get a tank of  $O_2$  which is the oxygen they have in hospitals. You run it through a converter box, the converter box converts the  $O_2$  to  $O_3$ . So what comes out the other end is pure  $O_3$ . Now, you've got three oxygen atoms sharing the electrons that make two oxygen atoms stable. That's an unstable molecule. It's not enough electrons to go around. So as soon as





that ozone gets in contact with any organic substance, it instantaneously grabs an electron. So we're talking about instantaneous electron movement. And if you know anything at all about physiology and metabolism and energy production, you know it's all about electron movement. So here we have a prime mover of electrons in a heartbeat, in a second. And that's really from a physiological standpoint, that's why it's so applicable across the board. And that's why we have 3,500 papers published on just about any disease you can mention. Just plug it in the search engine and you're gonna see something. So it's for real, unfortunately, it's not well accepted here in the United States at all, but in European countries, it's very well accepted. Insurance pays for it and all kinds of things.

**Eric D. Gordon, M.D.**

Yeah. No, it is difficult in America 'cause we, yeah, I had a friend who actually went as far as trying to get an IRB with a hospital to use ozone. And the FDA said that he had to get what's called an investigation on new drug approval, which wouldn't be so bad, but they wanted animal experiments first. Despite the fact that we have all this literature and all this clinical experience-

**Frank Shallenberger, MD, HMD**

Yeah.

**Eric D. Gordon, M.D.**

On the safety of ozone.

**Frank Shallenberger, MD, HMD**

Yeah. And tons of animal experiments, by the way.

**Eric D. Gordon, M.D.**

Yeah. I know. But they wanted new ones. I mean, and again, I always get upset. I don't think the FDA, I might be a rare one. I don't think the FDA is out there, is bad in itself. I just think that their judgment is flawed. Like they mean well, but they designed the system to prevent anybody without \$100,000,000 from getting very far and-



**Frank Shallenberger, MD, HMD**

Fortunately, doctors can still use it. It's not against the law.

**Eric D. Gordon, M.D.**

Not yet. Yes. I know. I say that jokingly only because of our experience with our current infection where so many things, I happen to, my website had to go down for a while because I mentioned how people could use some of these therapies at home to deal with infections early on.

**Frank Shallenberger, MD, HMD**

Yeah.

**Eric D. Gordon, M.D.**

The Federal Trade Commission thought that, yeah. So it's just unfortunate that I'm hoping that medical freedom comes back because the idea, I am a great believer in studies and in double-blind, placebo-controlled studies when appropriate, but we've gone to the point now where specialists don't understand the disease process. They only understand the disease in their organ. And so they can no longer make judgements about, 'cause what we're talking about, Frank, is and what you've really said is this symphony of an immune response that affects organs all over your body. And I think that's what keeps a lot of our patients, the people who are our audience, ill is because they don't have something that's just wrong with their heart or their lungs or their brain or their guts. If they did, they would probably be better because then the specialist that they saw would've helped them.

**Frank Shallenberger, MD, HMD**

Yeah.

**Eric D. Gordon, M.D.**

These are good guys. These doctors, I mean, I just wanna always tell people that I have great respect for the specialists. It's just that they fail because they're looking for a disease of an organ. They're not understanding a dysfunction of the system.



**Frank Shallenberger, MD, HMD**

Good point.

**Eric D. Gordon, M.D.**

And that's what Dr. Shallenberger is talking about is looking at the immune system across fields, because you see, it's not just you go to the immunologist and they'll go, oh, you have too many immunoglobulins or your Th17 cells or Th1 cells are too many. That's not helpful. They just look at that and go, huh, where is the disease? Where is the one thing that's wrong? And what we're talking about again, is something that's not necessarily broken, it's merely out of balance. And your specialists know about things that are broken. They don't kind of care about what's out of balance, because in most people, that out of balance is transitory. It's something that happens for a while and rights itself. And what Dr. Shallenberger is talking about is those places where the system says stuck at a balance, but you're not dying, you're just fatigued. Or can't think straight or, and have trouble dealing with a mycotoxin or a pesticide that your body isn't able to get rid of because you overtaxed your liver or some other organ. Anyway, I can get off my soapbox. It's just the whole thing of the medical legal world is very upsetting because I said, these are good people who are trying to help and protect us. I just think they've lost sight of what health is about and what medicine is about.

**Frank Shallenberger, MD, HMD**

I have a good, I think, example or way of explaining this to patients a little bit, similar to what you're saying. And I tell them, imagine you've got a chain and one of the links is broken. So the chain doesn't work. So our specialists, if it's just one link broken, will figure that out pretty quick. And they'll fix the link and we're all back to good again. But what if you got four links broken? What if you got five links broken? What if you got 18 links broken? Those are the people that are gonna end up on my doorstep because you gotta fix a lot of links. And it's impossible to do that. Our bodies were made to fix those links. We have to ask a different question, not what links are broken. We need to ask that question by the way, but we need to ask another question. And that is, why isn't the body fixing these links? What's missing there?



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'Cause there's no possible way we can fix all these links. We have to depend on our internal doctor, if you will, to fix those links. And so we work on those levels.

**Eric D. Gordon, M.D.**

Yes, absolutely. As Dr. Naviaux calls it, I'm not the only one, the black box of healing.

**Frank Shallenberger, MD, HMD**

Exactly. Okay, good. Yeah.

**Eric D. Gordon, M.D.**

We have to get that activated. And that's where things like ozone and just many of the therapies that help balance the system. They don't have to go in and fix one piece. They just help bring your body back to balance, can be so, so helpful for all of us. So, yeah, it's an amazing world. And I hope that we can just have more people realize that, we talk about many different therapies on this series and no one therapy is gonna help everyone. Okay. And not one therapy is gonna get you better. But just be open to looking and don't give up and remember that, try and see if something really does begin to bring you back with a little more vitality and a little more ability to detox and to heal 'cause those are-

**Frank Shallenberger, MD, HMD**

Yeah, I'm glad you brought that up the way you did, Eric, because it's in our nature, I think, to go in to see the doctor and have this thought, oh, he's gonna give me this special herb. Or he's gonna give me this special treatment where it takes so much more than that and change in lifestyle. There's so many issues from stress right on down to nutrition, to everything. And it's not so simple as just taking that one pill.

**Eric D. Gordon, M.D.**

Yeah. 'Cause like I said, the one pill things have, usually people would be in these situations, but as far as, the interesting thing about mycotoxins in the gut is the way that they do tax the liver and getting back again. I think the rectal ozone is such a nice way to just give the liver a little help, a little chance to heal, to get a little more energy and to revitalize its ability to do one of its major jobs, which is to detox us.

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**Frank Shallenberger, MD, HMD**

Yeah.

**Eric D. Gordon, M.D.**

The liver and the gut they are where things start. And keep us going.

**Frank Shallenberger, MD, HMD**

Absolutely.

**Eric D. Gordon, M.D.**

Yeah. So just to wrap up, is there anything other than, I mean, what other favorites do you have if you will? I mean, I know in trying to help shift people out of this stuck, where they're often stuck either in Th2 dominant world or a Th1 dominant world, do you have any other things that you really focus on?

**Frank Shallenberger, MD, HMD**

Yeah. So basically, if we just stay with that paradigm, one point to think about is ozone therapy, it's a hormetic treatment. Meaning that the term hormetic refers to the same substance in a small dose does the exact opposite in a high dose. So ozone is like that. In a high dose, ozone turns down Th1, in a low dose, it turns down Th2. So if you're dealing with that, you can know how to properly dose your patient. The other thing that's important to remember is that virtually, every patient with any chronic illness that's having a hard time getting well, they should all have ozone, all of them. It's just a matter of how do I get it into the patient and what sort of dose do I use, but there's no way in the world that a patient is not gonna have a pretty significant benefit, no matter what their problem is, if they throw ozone therapy and along with the other therapies. Then the other thing I wanna think is, that most of the time, we're looking at people with the Th2 dominance. So you look at that and you say, okay, what other things besides ozone could help correct this? And the things that immediately come to my mind is detoxification, getting rid of those things that selectively stimulate Th2. Petrochemicals, chemicals in general, from the chemicals we're putting on our hands all the time, to the chemicals we're eating and

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the chemicals we're getting exposed to and breathing, all those things are very pertinent to a very sick person 'cause they keep them in that Th2 mode. The other thing that occurs to me is parasites, and parasites can be problematic for people who are already in a Th2 mode. For the rest of us, we can have all the parasites in the world, no big deal. But for those people, you wanna think, yeah, maybe we better start thinking about parasites and Ivermectins and hydroxychloroquines and et cetera, et cetera. And the other thing that people need to understand is that hydrocortisone and DHEA are major hormones that virtually, every chronically ill person is deficient in, guess what they do, they tend to suppress Th2, which allows Th1 to come up. So by aggressively treating the adrenals, keeping the detoxifications along the lines I just talked, throwing ozone therapy in there, you're automatically on first base now. And the rest of the time, like you pointed out so nicely, it's just gonna take time at that point. And there's other things, of course, and there's all kinds of great herbs. There's great herbs that turn on the Th1 like cannabis, curcumin, quercetin, all the mushrooms versus Lion's mane, all the good mushrooms do that. Turkey tail, all those. The drug, Metformin, is a very powerful Th2 suppressant. So lots of ways to approach that within this one paradigm. And that would be my basic message I'd like to get to everybody. Think of that paradigm and throw that into your program. And you're just gonna be way better off than if you ignore that.

**Eric D. Gordon, M.D.**

Yeah. Yeah. I think we have to be careful, but I think it's one of those basic steps that always take a good look at what's rocking your boat. Yeah. Is it the things that your body's overreacting to, or bugs that are provoking your immune system? I mean, and your body reacts very differently to those two things. Unfortunately, many people have a mixture of both. And then it's just peeling the onion. 'Cause sometimes you gotta balance one a little bit and sometimes you gotta balance the other, but that's where you need the physician, I guess. I mean this is the point, is that if you have one problem, your body's often gonna take care of that. But when you have these things piled on top of each other, that's when, we've always used that expression, peeling the onion, or I call about playing pickup sticks. And each time, depending on the person, there's the right stick to pick up. And that might be a really juicy and important stick to deal with. But if it's in the middle of the pile and you try to pull it,



the whole thing falls apart. Everybody gets sicker. So that's where, unfortunately, the clinician really comes in. And I say unfortunately, because a lot of the people are forced to be their own doctors in this field.

**Frank Shallenberger, MD, HMD**

Yeah.

**Eric D. Gordon, M.D.**

And deep intuition will help you, but the experienced clinician will also help you because he'll recognize the patterns that you're going through and be able to help decide, is this the time to be reducing your Th2 or is this the time to be like maybe, letting that ride and dealing a little bit more to Th1 side of things. So I just wanna thank you, Frank. This has been, I mean, what I love about these talks more than I, well, not my secret, is that just talking to clinicians every time I've been doing it, I'm always learning and it's not just learning details, but just it's like that sense of like, oh, okay. That's how somebody is thinking and that's priceless. That's an amazing gift. I just wanna say, it's one of the joys for me of doing this, is being able to bring information to the people out there who are hitting a wall and need a new way to look at their problems. And also for me, it's always a chance to learn and learn a little bit. And that's just amazing. I appreciate it. And thank you for your time and thank you for your life work, because you're really somebody who is a real giant in medicine. Okay. I mean, I don't say that lightly. Okay. 'Cause you have put the energy into ozone and paying attention to the importance of metabolism in longevity. So thank you so much for your work and remind people that, check that website for information about ozone. It's aaot.us. Is that the right-

**Frank Shallenberger, MD, HMD**

Yeah. That's right. Yeah.

**Eric D. Gordon, M.D.**

That's right. Okay. And also your clinic is the Nevada-





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### **Frank Shallenberger, MD, HMD**

It's the Nevada Center and the website is easy to remember. It's [antiagingmedicine.com](http://antiagingmedicine.com).

### **Eric D. Gordon, M.D.**

Uh-huh. Nevada. Okay. I'll say that. I'll get that better. Get the new Yorker out of it. Okay. Anyway. Yeah. Thank you so much. I appreciate it. And we'll talk again.

### **Frank Shallenberger, MD, HMD**

My pleasure, Eric. Thanks.