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Dr. Pawluk: This is Dr. Pawluk, Welcome to the Pain Solutions Summit. And today we have a guest, Dr. Tiffany Caplan, who is going to help us to understand autoimmune disease and how autoimmune disease relates to pain and how to help people with their pain problems when it relates to autoimmune disease; both as a cause and effect relationship. So Dr. Kaplan, Could you please tell us about yourself?

Dr. Caplan: I'm a functional medicine based practitioner. I'm a chiropractor as well, but what got me interested in helping people with autoimmune disease is I have a family history of autoimmune disease. So things like Hashimoto's and rheumatoid arthritis and lupus and Crohn's and all these different things. And we found that by working with people in a more holistic approach, we can actually help get autoimmune disease in remission. And so that's my main focus is helping people identify what's actually at the root cause of the problem instead of trying to mask the symptoms and really be able to live a much healthier life and to have that in control.

Dr. Pawluk: Wonderful. And what we're going to try to do today is to offer people some practical solutions for how to deal with their autoimmune disease. And especially again, as it relates to helping them with their pain problems. So how does autoimmune disease cause pain?

Dr. Caplan: So it can cause pain directly and it can cause pain indirectly. And so there's actually about a hundred different autoimmune diseases under the category of autoimmune. Most common symptom with autoimmune disease is pain, but it could be from the actual autoimmune process itself. So with most autoimmune diseases, there's a level of tissue destruction that's happening. Your immune system, the very system that's supposed to protect you can turn on, you can be stimulated to think different parts of your body is the bad guy and maybe cause destruction of the joints or attack the muscles or the nerves; the different parts that can cause pain. We can see that directly causing it, but then there's also just inflammation that can happen in the body, which we know inflammation is a big contributing factor to all chronic disease and pain.

Dr. Caplan: Then there's also some indirect correlations, like when we talk about fibromyalgia, which is an autoimmune disease, and we know that there's a huge correlation between serotonin problems and fibromyalgia. So we know that the most of our serotonin, our neurotransmitters are made in our gut and there's a big brain gut connection so that imbalance of the microbiome or gut dysfunction can directly impact the serotonin in the brain, which causes central nervous system dysfunction and can lead to fibromyalgia pain. So it could be indirectly, it could be directly but I think a huge core is just the inflammation that happens in the body when you have an up-regulated immune response.

Dr. Pawluk: So using steroids and opioids is not a solution for an autoimmune disease related pain disorder, right?

Dr. Caplan: Right. It's a band-aid.

Dr. Pawluk: Most of the time.

Dr. Caplan: Right, right. Yeah, there's definitely a time and a place for medications especially when somebody just needs to get out of a very active flare-up or something, you know? It's an acute band-aid, but it doesn't fix the problem. It doesn't address like why the problem was happening in the first place.

Dr. Pawluk: Let's go back to the beginning. What is autoimmune disease? I mean, how does it start out? How does it evolve? How does somebody actually get an autoimmune disease?

Dr. Caplan: Yeah, and that's a great question cause there's so much misunderstanding and mystery around autoimmune disease. But how it starts is it's usually there's a predisposition for most people. Like you can have other family members that have autoimmune disease and you're more likely to develop it because of a genetic predisposition. And then there's also leaky gut, which is a big part of it. So you have too permeable of a barrier that's supposed to protect you from getting overstimulated, over-reactive with your immune system. And then there's also inflammation and environmental triggers. And so we have to look at the things that we're going to expose to you on a regular basis, whether it's from our food, things in our environment stress and all of those things to create the perfect storm for your immune system to be over-reactive. Because an autoimmune disease, it's actually an overreaction of the immune system and those things will then trigger your immune system to think different parts of the body is bad guy and will cause a tissue destruction. And so that's really where it will start for most people.

Dr. Pawluk: So I've always been taught that essentially autoimmune means that it's against self, right? So the immune system is attacking self at one level. Self is our bodies have the capability ourselves, our immune cells in our bodies know who we are. They know our own footprint, they know our own genetic imprint, right? They know that my joint cell in my knuckle is MY joint cell in my knuckle. They know that my thyroid is MY thyroid, right? So if something happens, then that changes that configuration that changes that signature. So the body's constantly surveying itself. The immune system is constantly circulating and assessing and judging every single second of the day, right? We have 100 trillion cells in our body. Could you imagine? And our immune system is constantly doing surveillance on that entire set of cells. So if this one cell becomes abnormal, the body no longer recognizes it as self, then what does the immune system do?

Dr. Pawluk: They attack. I'm supposed to get rid of you because you don't belong to me, you're an alien. You're a foreigner. You need to be attacked and gotten rid of. So tissues that become damaged then become unrecognized by the body or not recognize the self by the body and then the body attacks. Now that's a dysfunctional problem. It's functional most of the time, right? It's necessary for our survival. The body has to know whether it's a bacteria or when it's a virus or when it's a fungus or when it's a cancer cell or something that is not us. But unfortunately, if it happens to be my thyroid, then there's a problem right now becomes autoimmune in a more destructive non-directive self-preservation perspective. Do you agree with that concept?

Dr. Caplan: Yeah, absolutely. And we actually find too that a lot of times there's like underlying viruses in our tissues, like Epstein Barr virus. Most of the population has been exposed to--

Dr. Pawluk: What percentage of the population has Epstein Barr virus?

Dr. Caplan: It's like 90% I think.

Dr. Pawluk: And that's one of the reasons that doctors, for the most part, ignore EBV because it's so common. They think, well, it's so common. You know--

Dr. Caplan: It must be normal, right?

Dr. Pawluk: Yeah. So now we know Epstein Barr virus hides out on lymphocytes and hides out in tissues and so on. So it's everywhere. And just like the herpes viruses, just like the shingles viruses, it can be reactivated at any time. So I think that's a major source of autoimmune disease in our bodies. That's sad. That's normal. That's a normal process. And limited autoimmune disease is not necessarily a big deal. Right now we're talking about other conditions that are a big deal. In fact, let me make another point that maybe you would have made or not, but I'm sorry.

Dr. Pawluk: I'll preempt you. Autoimmune disease now is the third most common cause of death in this country. You probably knew that, right? The reason most people don't recognize it as the third most common cause of death is because there are so many diseases that are considered autoimmune. But if you lump them all together, now it becomes third most common after heart disease and cancer. So this is a big problem. It's not a small problem. It's a big problem. And again, you just have to be able to define them all into this big category: auto-immune. So when does autoimmune disease actually become more than just a local problem?

Dr. Caplan: That's a great question. When there's so much destruction that you start to notice symptoms, that's usually when it gets diagnosed, but it usually is in the works a decade or years and years before it gets to the point where you can even see the symptoms. And then you've at that point about already had so much destruction that your body it now can't compensate anymore. And now it's showing that. So it actually takes on average, about seven years of somebody actually having the symptoms to get diagnosed with an autoimmune disease. It takes going to four different doctors usually to get a correct diagnosis as well just because it can present differently in different people. People don't take it seriously. Like if it's just, oh, it's just pain. Oh, it's just fatigue. You know, a lot of the common symptoms that go along with autoimmune can just be written off as other problems as well and I think that's a big issue with autoimmune disease as well.

Dr. Pawluk: I think you're right. I see this in my own practice on a regular basis. I don't see this happening with most doctors in their practices. Every one of my patients, every new patient will get a rheumatoid factor in every single person because you don't know what, whether their symptoms, their problems, their back pain or their headaches or their shoulder problems or their eczema or whatever is actually caused by an autoimmune problem. What testing do you do?

Dr. Caplan: Commonly we do those and we do even inflammatory markers, C-reactive protein and homocysteine, and we can see levels of inflammation. Are they at high risk of maybe even cardiovascular disease. We can look at preventative markers as well. But like you were mentioning before, you can have some tissue destruction, maybe you sprain your ankle or something and have a positive ANA. But also looking at where in the range is that ANA? Is it at the very low level? Is it super high? So that also matters. If you look at all the lab results and look at it together as a whole person instead of bits and pieces, you can get a better sense of everything going on.

Dr. Pawluk: So how could a sprained ankle turn into autoimmune disease?

Dr. Caplan: So great question. Again, your immune system has to clean up the body. If there's damaged tissue, it has to go in and clean out those damaged cells because your body has to repair itself. And so if it starts to recognize and it comes into contact with broken ligament cells or something, and it starts to recognize those as foreign because that's not what they normally look like, it'll start to have an immune reaction to think that that's not normal and clean it up, so then you can start to develop an autoimmune type reaction against it.

Dr. Pawluk: So it's an over-vigorous, overzealous response to a common problem. It goes back to the point that you're making before about genetics, family predispositions, right?

Dr. Caplan: Yeah. And just because you have the genetic predisposition doesn't mean you're going to get the disease. And just because you don't have it doesn't mean you can't get the disease either. It just primes you to have a more risk factor, you know, a better chance of developing it. But it's not the only factor. And it doesn't mean that you will have the disease or that you have to have the disease. It's just part of the whole picture.

Dr. Pawluk: You would have somebody who frequently you'll hear, I'm sure you do as well, that somebody was well until X day and then after that all hell breaks loose. And I used that word on purpose. All hell breaks loose, but let's talk about that.

Dr. Caplan: So we always, with a new patient, we always sit down and besides looking at labs, we look at their health history and we try to figure out when did you not start feeling well? Right? And what was happening before that time? Was there a new stress? Was something else going on? Did you move? Is there a new environment? Did you start eating differently? All of those things can play a role and be like the defining factor of what set off the problem. Or even like a reactivated, going back to the Epstein Barr virus, like all of a sudden you could had a stress that reactivated the virus. And we can figure that out by looking at the timeline of when you started to notice certain things. And then also looking at labs, looking back and say, okay, where did things start to move in the wrong direction? We always start with kind of a timeline, but it's a lot of times people can help us pinpoint exactly where things started to go wrong. And that's a huge indicator of the big underlying factors of why they're having this problem in their health.

Dr. Pawluk: How does it help you to change your--How does it affect the way you approach or manage your patient when you have that kind of history?

Dr. Caplan: It changes everything because then we know what to focus on for that person. There is no magic cookie cutter approach that works for everybody. So if we just gave everybody the same diet and put them all on the same supplements, it would help some people and some people would get better, but it's not going to help everybody. And so if we know that stress is the biggest contributing factor, we can really focus in on helping them deal with stress better and figuring out where the stress is coming from or if they have more gastrointestinal problems. We can work on that so we can figure out for them what's the biggest culprit or underlying factor? Because it's different for everybody.

Dr. Pawluk: Well, those people might be relatively simple to deal with. Right? You talked about the fibromyalgia patients. How many of those, I mean I don't see too many of those that have that precipitant; have that one specific episode where everything begins after that.

Dr. Caplan: Right. And a lot of times the symptoms are gradual over time. A lot of times just because people are not paying attention to their body. I think that's the biggest problem too is people are just not aware and so many things that are common are just kind of written off as normal. Like, oh, it's just common to feel tired as I'm getting older or it's just because of a busy job and kids at home and all this stuff and there's excuses that we make to not pay attention to the symptoms that our body is telling us. And that's where it gets a little trickier. But symptoms are always the way your body is communicating with you. You have to pay attention and you just can't write things off as normal.

Dr. Pawluk: And often when you go to a regular medical doctor, what happens with when you get those kinds of symptoms?

Dr. Caplan: Yeah, you're told it's normal or you're told your labs are fine and you're told, just wait and see if something else pops up or you're given a pill, you go in and they can't find anything wrong, so they give you an antidepressant because it must be in your head.

Dr. Pawluk: Right. So, we take a very different approach. Right? Functional medicine takes a very different approach with these kinds of symptoms. And unfortunately we all also have to unravel spaghetti when they've already gone to other places, right? What happens then?

Dr. Caplan: Yeah, we get that commonly too. We have people that have come in. I had one person come in and she's like, you are the 84th doctor that I have seen. I was like, oh my gosh. Okay. So she had a list of labs and everything that's been tested and we had to dig through all of it. But it is if people are complicated and you have to sometimes take a step back and just have a conversation with them to see where they're at and what they've tried and what they haven't tried, what they've looked at because sometimes it's the simple things that are missing sometimes, we're jumping to conclusions about X, Y, and Z, but then we're not paying attention to a vitamin D deficiency or we're not looking at leaky gut. You know, we're not fixing the simple things that have such a big impact on everything else.

Dr. Pawluk: So do you evaluate for food allergies or food sensitivities?

Dr. Caplan: We do, but not through testing. Typically we do it through elimination diets. So we take out the common food culprits from their diet. We keep them out for at least 21 days because that's how long, usually an IgG food sensitivity reaction stays active in the body. And so we take the foods out that we think could be causing a problem. And then as we reintroduce the foods back in, we can see more specifically if we do it one at a time, what food is causing X, Y, and Z symptoms. So if we add back tomatoes in the person who gets the joint pain back, then we know, okay maybe there's some problems with

eating tomatoes right now your immune system is not tolerating them. So we typically do it through an elimination re-introduction type diet. And that's how found just kind of been the best answer because people can get a direct response when they eat something, their symptom comes back.

Dr. Pawluk: And I also find that again, most conventional doctors pay virtually no attention to the relationship of food to diet because, actually most physicians are inadequately trained when it comes to diet and nutrition and even food allergy because most doctors who do focus on food allergy are only looking at which particular immunoglobulin.

Dr. Caplan: Oh yeah. They're only looking at the IgE, which isn't a true allergy. If you have a true allergy, you usually know it though. So it's not as hidden as like a food sensitivity. And there's, you know, all the different types of immunoglobulins and not just the one.

Dr. Pawluk: I got in trouble all the time cause I tell people that IgE is everybody knows their IgE problems cause they're not hidden. They're not hidden. You know that day that that food caused the problem. But most allergists only focus on IgE. Most doctors only focus on IgE. Most conventional labs only focus on IgE. So we are really talking about delayed food reactions, right? And you can eat the food and not react for two to three days.

Dr. Caplan: I started out as a patient myself and so when I did the elimination diet, I realized when I reintroduce foods, most of my reactions were three days to a week after exposure. And a lot of times it would be something I ate the week before that I was getting a migraine from. And it was really hard to pinpoint it because it's such a delayed reaction. So it makes it challenging.

Dr. Pawluk: I've asked the [inaudible] because we're eating many of these foods all the time, for example, gluten or dairy or eggs. And I find dairy and eggs actually is a bigger problem than gluten. So many people are reactive to them, much more common. Gluten still a problem, but they're in eggs or are in the mix as well.

Dr. Caplan: Yeah. And it's hard to know that cause it's like in everything too. So people are like but it took then everything I'm eating and it's hard to help them change that.

Dr. Pawluk: And then you have to do an elimination diet for all three of those foods typically to really find out. So if you already do food elimination for one food, it's going to take a lot longer to figure out what the relationship food is to the symptoms.

Dr. Caplan: And there's other night shades are sometimes a problem. So the tomatoes and the peppers and potatoes and stuff like that, especially when I talk about arthritis and pain and stuff, that is a huge thing that I find is people react to night shades. So we take

those out too, we try to eliminate as many of the big culprits as we can at once. Because again, like if you take out one thing and you're reacting to five, there's still reactions going on. You're not going to feel that much of a difference and you're going to think it's fine. I caution people against doing one at a time.

Dr. Pawluk: And sometimes, in fact, a little bit of this does it cause a problem and a little bit of that doesn't cause a problem. But when you combine them, one plus one doesn't equal two it equals 500 then the reaction develops. So then that becomes even harder to figure out which foods are interacting. So what do you do? So you do food elimination. What else do you do when it comes to gut related pain? Because irritable bowel syndrome is a common chronic pain syndrome, right? All sort of colitis, Crohn's disease are often similar as well, right?

Dr. Caplan: Yes. And there's a lot of inflammation in the gut when that's happening. So we always like to start with a microbiome test. We look at, we do a stool sample and we see what's growing in the gut because the bugs in there have a direct impact on our immune system. About 80% of our immune system lives in our gut. And so, it's going to be injured or directly impacted by the bacteria, by yeast, by parasites, by different things that can be overgrowing or not enough. You might not have enough good bacteria. Maybe if you've had chronic antibiotic use because of these problems, you're going to wipe out all the good stuff in there. Or you could even have a small intestinal bacterial overgrowth. We're seeing that commonly because of antibiotic use and antacid use and all these different things. And so we can look at microbiome, we can look at signs of leaky gut, looking at short chain fatty acids, looking at the IgA and other immunoglobulins in the gut on the stool test. We can see, do they have really high levels? Are they having high reactions to a lot of things? Inflammatory markers. So stool samples can actually show you a lot. We look at those very commonly and that helps guide us to figure out what do we need to do or use more specifically for the gut.

Dr. Pawluk: So again, we're trying to get at the source of the problem, right? We're not just trying to put a band-aid on and make you feel better. We're actually trying to help you to actually resolve the problem as much as we possibly can. And that means a multilayered approach. Multifaceted approach. Can you do all this in one visit?

Dr. Caplan: No, absolutely not. And we could, I think we usually start with diet as number one because that's the biggest thing. You know, we eat every day, all the time. And that's the biggest thing that we can help patients control right away is look at what they're doing on a regular basis. But no, it takes time. And depending on like how bad leaky gut is, it could take months and months or even a year to fix it. And if you're still eating the foods that are causing or contributing to, it's going to make it even harder. And longer to go away. So no, it doesn't happen overnight unfortunately. But when you can identify

those specific areas and start to use food as medicine and different nutrients and work with your body instead of against it, then you can actually heal those problems, which is cool. That's how you get into remission.

Dr. Pawluk: And that's how you keep people in remission, right? Cause with autoimmune, once you've turned on the immune system, can you ever turn it off?

Dr. Caplan: There is no cure for auto-immunity. But you can get it into a state where it's not active anymore. And that's what we want. Exactly. So then it's not causing the tissue destruction; it's not causing the inflammation. It's not causing symptoms. And that's what we call remission.

Dr. Pawluk: So if you have an ANA of 640, let's say a normal ANA, antinuclear antibody, might be 2010. Now if you're up to 640, that's pretty high, right? 1,260. It's very high. Have you seen those numbers that are very high come down with what you do?

Dr. Caplan: Yes and that's actually really common. We'll watch the, the numbers over time. That's where we always like retest those lab markers that come back abnormal so that we can see what's changing. And I've worked with a lot of patients that have been able to get off of, especially like lupus patients that are on prednisone and plaquinone and went on all these different immunosuppressants, worked with them too. As their numbers are coming down their rheumatologists take them off the prednisone and taken off the plaquinone. We're now getting them off the medications because they're not eating it anymore. Their immune system's getting better, their symptoms aren't there and they're getting into remission. So looking at those numbers coming down is really helpful.

Dr. Pawluk: Sometimes the doctors are shocked. Of course they'll tell you that it was about the plaquinone when that brought the numbers down, it wasn't the food at all. Now how successful are you in getting the doctors to reduce the medications?

Dr. Caplan: You know, we just see, we use the objective data. So, we educate our patients on, hey, look at, these are the markers. This is what they mean. They are changing, right? The ANA is coming down. That's a good thing. That's what this means. And also your symptoms are going away, right? You're not having X, Y and Z anymore. And then we help our patients communicate better with doctors. Cause that's another part is like you go to a doctor and then they just talk to you for five minutes and you're done. But we want patients to be able to have an open communication with their provider and be able to talk to them about like how they're doing and maybe helping them modify their medication use. Cause that's optimally what you want to do. You don't want to be on immunosuppressants for the rest of your life and that creates other problems.

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Dr. Pawluk: Yeah. We have to work together as a team with the medical system because I think they do have an important role for managing a lot of these autoimmune diseases. Patients often come to them first anyway. We are usually second or third in line or fourth in line after that happens. But you don't teach. My rule is that you don't take somebody crutches away until you know they could walk. You don't stop the medication. So we have to educate our patients. Say, don't expect me to stop your medication today. Tomorrow we have to make sure that you're showing progress and improvement with the interventions that we've introduced.

Dr. Caplan: Yes. That's super important. Cause like you said, that's the perfect example with the crutches. You don't want to just crash and then be in a huge flare up. You have to fix the reasons why it's happening to not need those anymore.

Dr. Pawluk: Yeah. And unfortunately because we can't fix the problem, we can't reverse the autoimmune disease. We can improve it, but we won't necessarily take it away, remove it. We have to keep that in mind and constantly work with the person because you're never done. So when they're done, when their markers are way down and they're off their medications, what happens then?

Dr. Caplan: You have to keep keeping up with the lifestyle habits and the right diet approach and you have to keep up with the things that you know, support your immune system. Also we teach patients how to look for flare ups, look for signs that things aren't going very well and then do things to proactively prohibit a big flare up of all the autoimmune response. So if they start to feel some of the symptoms coming back, ask why, what's going on? What's different? Did I eat something different than I do something different and figure out like where's it coming from? So that's a huge part of it is once you get to remission, you have to learn how to maintain it just by taking care of your body just by figuring out what it likes and doesn't like.

Dr. Pawluk: What else? Some people are adventurers. Some people are risk takers because they don't want to have to go through all this stuff and keep up these diets and do all this stupid stuff. This doctor told me to do. So I don't want you, but I've certainly seen patients who have made the mistake of stopping things, or I should probably more commonly if they go on vacation. I think they take long trip and the diet's gone, the stresses there are back and all sorts of things happen. Right? Is that a bad thing or a good thing?

Dr. Caplan: Not necessarily a bad thing. I think it's actually like a learning experience for people. That's what I find most of the time; they learn.

Dr. Pawluk: Reinforcement. Well, and that's good, right? Because then you---it's like training. I consider it like training. You don't get off the couch and run a marathon the next day. You're going to have to train yourself up, but you're going to go through different levels of stress and pain and discomfort until you get to a point. That optimal training, if you back off what happens, you have to retrain again.

Dr. Caplan: Yeah, and life is always going to happen. There's always going to be new stresses, new things you encounter, and you have to learn how to, how to help your body get through it and how to deal with it better. And that's life.

Dr. Pawluk: That's life. Also people tend to get, not only do they get better, slowly, sometimes you get better really quickly, but they can get better slowly. But what you have a flare often, which we often see with things like MS and rheumatoid arthritis and all sort of colitis and Crohn's, et cetera, but you have one of these flares ups, can you reverse the flare overnight even though you were doing all the right things?

Dr. Caplan: Right. I mean if you are doing a lot of the right stuff, it's going to get quick a go away quicker, but not overnight. A lot of times it's going to take some time depending on how long you may be. We're ignoring the symptoms of the flare-up coming on and everything too. Cause it doesn't usually happen overnight. But that's kind of where you have to look at what am I doing different? What did I change? Kind of reevaluate everything and get back on track. And it might take a couple of weeks to really start feeling better again.

Dr. Pawluk: Or are even longer because the immune system is relatively unforgiving. So when you have a flare, it can take months for the flare to settle back down again. And unfortunately every time there's a flare, what happens? Well the tissue destruction happened. Even more tissue destruction, right? Oh you're at a different level now. The more of these you have then the lower the level becomes over time. So basically what I guess I'm saying, the message is that we wish, we hope and pray that this is a cure. Right? But it's not, so you have to educate people to tell them otherwise. Right?

Dr. Caplan: Right. Yeah. They have to understand what the autoimmune disease really is at the core. Like it's why it happens. It doesn't just happen for no reason and understand for them what are the big triggers, what are the big causes and what are the things that they need to modify on their daily basis to be able to control it better?

Dr. Pawluk: What about vacations?

Dr. Caplan: Yeah, again, life happens, but you do the best you can and you are proactive. Like I have patients take their supplements with them and at least, you know, stay on turmeric or

stay on their vitamin D and don't stop those things that are helping support where they've gotten to. And even if you go on a cruise or something, there's always food options. Like anywhere you go, you're going to be able to make better choices and it comes down to choice. It's never going to be perfect, but you can choose the right things that are really going to help instead of just going with, oh, well there's nothing, so I'm just going to eat this fried chicken that I know is going to flare me up or something.

Dr. Pawluk: What are your favorite supplements?

Dr. Caplan: For auto-immune, turmeric is one of the best anti-inflammatories; most people do well with turmeric. But I also find glutathione is a major one because it is a major antioxidant in the body. Most people are lower in glutathione when they have an autoimmune disease and active inflammatory process going on. So supplementing with glutathione and the precursors for it will help the body regulate the immune system better. Same with vitamin D. Most people are vitamin D deficient. Even when they're taking a supplement, they might be taking like a thousand a day and think they're doing good and not nearly enough, especially when the body's using it faster than you can take it when you have an autoimmune disease going on. So vitamin D is crucial for pain, with autoimmune, a lot of times I find CBD oil works really well. Yeah, I find that especially for like arthritic pain and stuff CBD is an awesome anti-inflammatory. Most of our endocannabinoid system has receptors in the gut, which again, 80% of your immune system lives in the gut. So there's a direct correlation there with how it helps with the inflammatory process. And I find that that works really well. So those are kind of some big things that are common.

Dr. Pawluk: CBD is not just helpful for inflammation. What does it do to the immune system itself?

Dr. Caplan: Yeah, it helps kind of modulate the immune system.

Dr. Pawluk: I totally agree with you. What about dosing?

Dr. Caplan: CBD? So we usually start people maybe like 10 milligrams of like pure CBD. We have a supplement company that we work with that uses or that makes one. So we know it's a clean product. We know what we're getting. It's not just like sending somebody to over the counter. We start with that and see if they need more, sometimes people will use it multiple times in the day. People will use it for anxiety sometimes or sleep; different issues. So it's depending on the person and depending on their level of symptoms and what they're using for, we just titrate it up.

Dr. Pawluk: What's the highest you've ever used?

Dr. Caplan: It's a great question. I have some people that use it pretty much continuously through the day. They do droppers under their tongue, for everything. So I don't even know actually how much they've been using because I haven't found it to be too much for anybody.

Dr. Pawluk: Yeah, I agree with you. I have never seen anybody OD CBD, right? You probably don't take enough of it to do that. They can't afford it. I find that some people need a hundred milligrams or more pure CBD, hemp based CBD versus there's CBD that you can get with marijuana, medical marijuana or marijuana. What about--?

Dr. Caplan: Some people do better with that. That's not something we give our patients, but some people do find that that works better.

Dr. Pawluk: So you have to find your way. What you have available to you without a prescription is the pure CBD-based CBD?

Dr. Caplan: Yes.

Dr. Pawluk: So you have to find your dose basically is what we're saying. Have you ever used LDN?

Dr. Caplan: No. I have not used LDN. I've had patients on LDN, I've referred out for LDN, but I don't prescribe that, but I know that it can work really well.

Dr. Pawluk: Yeah. It depends on where you are in the country and what the laws are in your particular state and what you can prescribe. LDN also happens to be already good immune modulator and in my practice I routinely put people with autoimmune diseases on LDN.

Dr. Caplan: Nice. Yeah, it could be wonders for people. I've seen that.

Dr. Pawluk: Mostly with LDN I actually don't notice anything. I like CBD. Because LDN works almost entirely at modulating the immune system. All you're doing is a decrease in the risk of progression at decreasing the risk of relapses and flares and everything keeps things more stable. But that's it. So you're not going to start to get a buzz from it. And with CBD you can get relief in a couple of hours, even with one dose. What dose of D do you recommend?

Dr. Caplan: Depending on where the person is on their lab rates, I usually start with at least 10,000 units a day and usually using it in the liquid form the D three with the K-2 as well to help the absorption better. And so I find that most people start there, if not more, if not 15,000 units a day.

Dr. Pawluk: So I think most adults should be on a minimum of 5,000 a day. Yeah, that's a good maintenance dose. I have never found anybody I'm testing who was not supplementing, who wasn't D deficient.

Dr. Caplan: I think if I found one person who was a coach who's outside all day in the sun, super tan, like that was one person that I found, I was like, oh, you're not on D? I was surprised; he was in the fifties or something. Well not great, but like much better.

Dr. Pawluk: I totally agree with you. I think that people in Arizona and Florida are vitamin D deficient too, right? Cause they're not outside. They're inside or they're putting on the sunscreen. I have another question, an interesting factor, how much D do lifeguards make?

Dr. Caplan: I don't know. That's a good question.

Dr. Pawluk: They make the equivalent of about 10,000 units of D. So our genetics is actually equatorial. We're used to having most of our body exposed to vitamin D most of the time. So we, in this culture, in our culture, we're fully clothed. We're indoors, and even in the summer in the Northern latitudes, like I'm at the say the level of Washington DC area, between October and May, you're not making D, even if you're outside with nothing on for an hour in the midday sun, you're still not going to make enough D; so D supplementation is critical for so many things. D has such an important role in autoimmune.

Dr. Caplan: Yeah. Because even being here in California where it's more, like on the coast, it's sunny pretty much all the time and people are still deficient all the time.

Dr. Pawluk: As I think people in California a lot, they're more than anybody else. I think that's a big problem. So let's talk about vacations. Let's talk about stress that you anticipate. You know you're going to have stress; Thanksgiving Day with family, traveling, food. Never mind food, but just the stress of the time that we're ending up in that season, right, shortly. What do you do to try to help people in anticipation of the stress, never mind maintaining, but what else can you do to help to support yourself even more because you're going to have more stress?

Dr. Caplan: Yeah. I think learning how to help your body cope with stress is the best thing people can do pretty much on a regular basis. And I think it needs to be practiced on a regular basis. So whether it is meditation deep breathing exercises. One of my favorite breathing exercises is four, seven, eight breathing. You breathe in for four, you hold it for seven, you let it out for eight and doing that helps stimulate the parasympathetic nervous system so it helps get your body out of the fight or flight mode into rest and digest state. And so people that practice these mechanisms on a regular basis, even

when they're not in stress, then can use those as a tool when they are getting into stress or they're experiencing acute stress and it's going to work a lot more effectively to help them deal with it.

Dr. Caplan: Learning how to do those types of things, whether it is meditation, whether it is yoga, breathing different exercises, I think is crucial. And then also we use a lot of adaptogenic herbs, things like ashwagandha that can help in modulating the stress response; the cortisol response in the body. And that takes some of the stress off too. So it helps your body deal with life a little bit easier. I find that those are pretty helpful for a lot of people when they know that there's going to be stress. It's prevention really. But then practicing those things when they're in the stress state.

Dr. Pawluk: And even if you're not stressed, which is highly unlikely, but if you're not stressed when you're traveling, when you get on an airplane, you're being exposed to a lot more bugs.

Dr. Caplan: And radiation and--

Dr. Pawluk: Oh, and all that. So probably when you're traveling, you should automatically be upping the amount of D that you're taking for the trip. And in both directions back and forth. And even if you're staying overnight for a week or so, probably for that time you should up bump up your D. What does it take to become toxic from D?

Dr. Caplan: Your levels have to get like 300, 400. It's almost impossible. I really have not seen people get close to that ever. Even on like 50,000.

Dr. Pawluk: There was a study for D3. There was a study done for people with an autoimmune disease called vitiligo or psoriasis. And this study was done in Brazil where they took people giving them 45,000 units a day for six months. They measured their levels. After that they measured their calcium levels, parathyroid hormone levels, all sorts of things were tested to see if there could be a risk of toxicity.

Dr. Pawluk: Not nothing, no problems. So even those very high doses for six months, it turns out that the people with psoriasis, hundred percent of them had their psoriasis go away. And about 70% had their vitiligo go away. But I think the key is that if you're going to be doing that, you better be monitoring your D levels and you better be monitoring your calcium levels while you're on very high doses for a long time.

Dr. Caplan: Yes. You definitely don't want to just do it for a long time and just see; you want to track the numbers, they help you. But yeah, that's interesting. And your immune system uses up Vitamin D so fast when it's having an autoimmune process. That's probably why their

immune system was able to go into remission and not have those problems anymore because it just had the necessary tools, the ingredients to do that.

Dr. Pawluk: Now D helps to protect the cells themselves; the cells use vitamin D to fight viruses. So when a virus goes inside a cell and is not just floating around in the blood anymore, its inside the cell, the body uses vitamin D to fight the viruses. So having high levels to get cellular saturation is very, very, very important.

Dr. Caplan: Yeah. And most people are walking around, they're so deficient and they wonder why they're getting sick all the time.

Dr. Pawluk: And their kids too. What do you do about vitamin C?

Dr. Caplan: Vitamin C? I actually don't use that commonly as a standalone product. It's usually when I am using other herbs or different immuno-support supplements. I have one that combined C and zinc and Echinacea and it's an all-in-one kind of a combination. And that works really well for helping support one side of the immune system, which most of the time, when somebody has autoimmune, they're a little bit more TH2 dominant so that is a good combination. But I don't typically use vitamin C as a standalone, but I know it can be helpful.

Dr. Pawluk: I would agree with you. I wouldn't rely on it by itself. And usually what we're talking about, again, is a multifactorial approach; everything gives you benefits at a certain level, but none of them alone are enough typically. Any other advice for us about autoimmune?

Dr. Caplan: I think the biggest thing to take away is that there's hope and you don't have to, even if you have an autoimmune disease, you don't have to live with it forever. I mean, you can definitely do things to control it better, to not have to rely on drugs, medications. It's an experience, or an opportunity to learn, about your body, to learn how to take care of it better, to prevent other problems. Because we know about at least 25% of people that have an autoimmune disease are going to get another autoimmune disease. And that's kind of a low estimate. So it's just, you know, prevention is a big part of it. That's always what I'm concerned about is for my health prevention, since I know I'm more predisposed all these autoimmune diseases. So that's the first thing is just know that there's something that you can do about it and start to be proactive in your health.

Dr. Caplan: Start to really pay attention to a symptoms are not normal. What symptoms are you having; what's causing it? Is there certain stressors or environments or in things that are when you eat a certain food, is it causing the symptoms? So paying attention to your body, what it's doing, how it's reacting. So key. And then maybe finding a practitioner

too that can help you with guiding you if you don't know where to start; or you need some extra guidance and finding somebody that you're comfortable with. You can talk to a functional medicine practitioner. That's huge.

Dr. Pawluk: How do you find a functional medicine practitioner?

Dr. Caplan: There is a great resource. The IFM Institute, Institute for Functional Medicine. You can go on their website and you can look for practitioners in your area. There's also Summits like the one Dr. Pawluk Is holding where there's a lot of different practitioners that you could look at to find people that are around you. There's some people that do virtual practices as well. I see Lupus patients virtually so people find me from all over the US Canada, different countries. You don't have to find somebody even in your backyard, you can find people online. You can find lots of resources, support groups, stuff like that. You just type in functional medicine practitioner and you know, Google, and you can find somebody.

Dr. Pawluk: I would say, thank you for that, and I would agree with you and I do refer people to functional medicine.org. There are other organizations like the American Holistic Medical Association, the Academy for the Advancement of Medicine, ACIM. There are multiple organizations that do this kind of work. Even though they're not "functional medicine", but they basically all practice functional medicine. They take a holistic approach. So there are many resources. Well Dr. Caplan, thank you very much for your time with us. I appreciate the help and the support and the suggestions and recommendations and hopefully people with autoimmune diseases will find that what you've recommended to them, regardless of the level of disease they have, will benefit from what you were talking about.

Dr. Caplan: Awesome. Thank you so much for having me. And if anybody wants to look up more, our website is Caplanhealthinstitute.com. We have lots of resources on there.

Dr. Pawluk: Kaplan is spelled with a C. Yes?

Dr. Caplan: Correct.

Dr. Pawluk: Thank you. Any books you want to recommend to people?

Dr. Caplan: If somebody has Lupus, we do have a book called The Lupus Solution, so that is out there. You can find it on Amazon and that's a great one. And then there's just again looking for, there's different functional medicine books depending on what topic you're looking for. So there could be I'm blanking on some of them, but there's, you know, Hashimoto's Protocol and Amy Meyer and all these different ones.

Dr. Caplan: And I know you have your book there too.

Dr. Pawluk: Well, Magnetic Field Therapy is one of the things that I recommend, but I only recommend it in conjunction with everything that we've been talking about. Magnetic field therapy is not enough by itself. You have to support your body, for everything else to heal maximum. Well, again, thank you very much Dr. Caplan. Enjoy the rest of your day.