

Unlocking Leaky Gut with Dr. Chad Larson
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Tony: Hey, Paleo Nation. I'm Tony Federico, and you're listening to Paleo Magazine Radio, the official podcast of the original Paleo lifestyle publication. It is thought that Hippocrates, the 'Father of Modern Medicine' once said that "All disease begins in the gut", and while we can't exactly prove that Hippocrates actually said that, modern science has begun to discover that whoever said it was right. When we take in food or the evolutionarily novel food-like substances sold at most restaurants and grocery stores, an entire cascade of reactions, absorptions, and outcomes occur. If we're eating biologically appropriate foods, our body will break them down, separate essential nutrients, feed the microbiome, nourish, rebuild, and repair our body, and eventually eliminate the waste, but if we go for the food-like substances, we disrupt vital tissues, irritate the immune system, and ultimately create disease.

On today's episode of Paleo Magazine Radio, I got the opportunity to have an incredible conversation with someone who works on the front lines of this battle between our bodies and the ersatz food stuffs that make up much of our diet. His name is Dr. Chad Larson, and he's a trained chiropractor who also works for Cyrex Labs, a clinical testing laboratory that provides high quality testing services for clinicians. Cyrex Labs' assays can help detect leaky gut, gluten, and other protein sensitivities, autoimmune and pathogen reactivity, and even blood-brain barrier permeability. In our conversation, Dr. Chad and I discussed gut biopsies, Non-Celiac gluten sensitivity, the limits of conventional care, the dangers of immunosuppressive drugs, how to talk to your doctor about gut health, and how lifestyle factors like nutrition, alcohol, and stress impact your gut. Before we get started, I want to take a quick moment to thank the sponsor of today's show, Ancient Nutrition, makers of the original Bone Broth Protein.

Dr. Josh Axe, one of the co-creators of Ancient Nutrition Bone Broth Protein thinks that there's a problem with many of the foods people eat nowadays.

Dr. Josh: They're very hard in the digestive system and we're not actually absorbing a lot of the nutrients that we think we're getting on a daily basis.

Tony: Unlike most foods however, the proteins in Bone Broth are already in their amino acid form which makes them extremely gentle and easy to digest.

Dr. Josh: Just imagine them going into your intestines, and your intestines are having to work. They're simply bringing into your cells, bring these nutrients in, and so again, it is very, very easy on the body.

Tony: As you may imagine, Bone Broth is considered Paleo for good reason, but even if you're not fully Paleo, it can still do your body good.

Dr. Josh: It's friendly for a Paleo diet. It's the number one superfood recommended for the GAPS diet, the SCD diet, and anybody with especially digestive disease. This is one of the number one foods that's recommended for those people in supporting the health of their gut.

Tony: You can hear more from Dr. Axe and learn more about Ancient Nutrition Bone Broth Protein by going to their website, Ancientnutrition.com. All right, Paleo Nation. It's time to get to know our leaky guts. Paleo Magazine Radio starts now. Hey, everybody. Welcome back to another episode of Paleo Magazine Radio.

I'm here with Dr. Chad Larson. He's with Cyrex Labs, an advanced clinical laboratory focusing on mucosal, cellular, and humoral immunology. That's a mouthful. Can you maybe introduce yourself and give us an idea of what you guys do over at Cyrex?

Dr. Chad: Sure. Yeah. Thanks for having us on the show. Yeah. Cyrex really focuses on autoimmunity and immune dysregulation.

When an autoimmune condition manifests, something has happened with the immune system. There's oftentimes been some kind of environmental trigger which has made the immune system abnormally work in a hyperactive way and start to attack its own healthy tissues and throw in some other things like genetic predisposition, and that's a good recipe for an autoimmune disease.

Tony: Give us a real world example. Joe Smith was walking down the street, and lo and behold, he encounters something that engages his immune system. Can you just maybe walk us through what happens in a normal situation, in a normal immune response, and then what that would look like from a autoimmune perspective?

Dr. Chad: Yeah. Let's take a pretty clear cut type of autoimmune condition. Clear, meaning we know the trigger in every person who has this condition, and that's Celiac disease. In Celiac disease, it's a condition where gluten, which is a protein in wheat reacts with the immune system in such a way where the immune system recognizes gluten as a poison in that individual, and it develops antibodies. We call these 'Immunoglobulin A' in particular with Celiac disease. Immunoglobulin A or we call it 'IgA' is an antibody that responds to that gluten, and -

Tony: Now, just to be clear, that isn't the case for everybody. Is that what you're saying that not everybody develops IgA in response to gluten?

Dr. Chad: Yeah. Yeah. Let's talk normal first. I think that's a good way to put it. Normal is a person consumes a wheat-containing product and there's gluten in there, and that gluten gets into the system, and the immune system doesn't care about it. In other words, they have what's called -

Tony: Whatever.

Dr. Chad: Yeah, whatever. It's called 'Immune tolerance'. The immune system tolerates the presence of that protein, and so it gets into the system and there's no antibody immune response, and the gluten gets dissolved down and gets assimilated and no problem. The person just goes about their day, and it's just a normal immune response. Those nutrients get into the system, everything is absorbed, and no problem. That's normal.

Tony: Hopefully if you're a Vegan, that's ideal. You want that non-response to gluten because textured vegetable protein, it's all gluten.

Dr. Chad: Right. You know what? Bring that up later because I have a recent study that I feel obligated to share about that in particular.

Tony: Okay. We'll keep that in our pocket.

Dr. Chad: In an abnormal situation then is what I'm describing where gluten is

recognized by the immune system as something foreign and bad, and it produces these antibodies. Then, through maybe some genetic predisposition, it affects a component of the gut called 'Transglutaminase', and this Transglutaminase enzyme then has antibodies produced to it, and that's what we call an 'Autoimmune reaction'. The immune system is targeting its own tissue, this Transglutaminase tissue, and now, that turns into Celiac disease and autoimmune condition.

Tony: Specifically, how does that progress, because obviously we talk a lot about it in the Paleo community and people are aware of Celiac's, but I think it's always good to do a review from time to time? Someone has that immune response, they're producing IgA, their body is producing antibodies in response to the IgA, and then what?

Dr. Chad: Right. Then, what happens is there's further reaction of that IgA just as that local tissue, Transglutaminase is there with a certain genetic predisposition. The immune system doesn't stop at the gluten, and it continues on into the small intestine, and it creates antibodies as just almost like collateral damage to that Transglutaminase. Then, when those Transglutaminase antibodies have been produced, then the person is going to start a downward cascade of destruction of the gastrointestinal lining, and that's where oftentimes the final criteria of a Celiac disease diagnosis is gut biopsy. They take a little chunk of that suspected damaged tissue, look at it underneath a microscope, and then we see something that we call 'Total Villous Atrophy'.

The villi which is where nutrients are absorbed get flattened, and yet, the -

Tony: Those little hair-like projections on the outside of the intestine?

Dr. Chad: Yeah. Exactly. It's a vital area. It's where enzymes exist. That's really what increases our surface tissue of the gastrointestinal tract for absorption and so forth.

When that gets flattened, that majority affects the person's ability to absorb nutrients, and that's why oftentimes, people present to their provider with deficiency type symptoms of certain nutrients like iron or just other nutrients that require absorption into that gastrointestinal tract. It's going to be stunted, and so it oftentimes leads to further investigation into something like Celiac disease when somebody has iron deficiency or some kind of other deficiency syndrome.

Tony: This autoimmune response initially to the gluten, I guess the byproduct of the gluten, the immune system's response to the gluten is really what the body is then responding to again. I guess that's what you mean by a cascade. It's one thing leads to another, and then there's this spill over of just normal human tissue that's caught up in this in ... I guess would you call that an inflammatory response to that?

Dr. Chad: There's definitely an inflammatory response. Yeah.

Tony: Now, let's stick with this for a little bit because in the Paleo world, we talk a lot about the problems with gluten, and obviously it's basically a gluten-free diet, so people maybe with diagnosed Celiac's disease or maybe people who just suspect that they have Celiac's disease are eliminating gluten. Now, another cause or another reason why people avoid gluten is not just

the Celiac's component. It's this whole leaky gut component. From what I understand, there's a little differentiation between this and what you just described, this autoimmune response, or are they the same thing? It's just taking it a couple steps further. Could you go into that?

Dr. Chad: Yeah. There's basically two types of gluten-related disorders.

Tony: Okay.

Dr. Chad: There's Celiac disease which is this autoimmune process with gluten cross-reacting with Transglutaminase leading to this problem, and then there's Non-Celiac gluten sensitivity. It's not on the lesser end of the Celiac spectrum. They're two separate and distinct conditions with their own continuum of severity. In other words, some people with Celiac disease don't even know they have Celiac disease. Other people with Celiac disease are it's life-threatening, and the same is true with Non-Celiac gluten sensitivity.

Some of these people are extremely symptomatic and a lot of them have no idea that they have Non-Celiac gluten sensitivity, but there is a common denominator between the two, like you're saying is leaky gut, intestinal permeability, and so there's a recent study. This is a good segue to what I mentioned earlier. I want to bring up the study. A study that's done by some premier Celiac researchers. One of them is Alessio Fasano.

He's out of the Massachusetts General Hospital in Pediatric Department, and his whole dedication is Celiac disease. He studied it from multiple components, but a fairly recent study with some other researchers, what they found out is they took patients who have active Celiac disease. In other words, they were not on a gluten-free diet and they had active, ongoing destruction to their gastrointestinal tract. That's the act of Celiac disease. They took people in remission from Celiac disease because they were following a gluten-free diet.

Then, they took another group of people who had Non-Celiac gluten sensitivity. In other words, they have symptoms when they're on gluten, and their symptoms go away when they're off of gluten, but they -

Tony: We're talking about stomach upset, and bloating, and things of that nature when you say symptoms?

Dr. Chad: Exactly. Exactly, but when they look at their autoimmune Celiac disease markers, they're negative. That's why we call them 'Non-Celiac gluten sensitivity'.

Tony: Yeah.

Dr. Chad: Then, they took a fourth group which did not have Celiac disease and did not have Non-Celiac gluten sensitivity, so they had no issues with gluten. What they did is they give each of these groups a dose of gluten, and then they measured the integrity of their gut barrier in a very highly scientific way. They did a gut biopsy which is an extremely direct evaluation of the integrity of the gut barrier.

Tony: Just cutting a chunk of tissue out, and then looking at that under a microscope.

Dr. Chad: Exactly, and so it wasn't surprising on the act of Celiac disease. When they gave them gluten, sure enough that caused breakdown of their gut barrier. Then, they tested the people who had remission in Celiac disease. They gave them gluten, and sure enough, that gluten caused leaky gut in their system. Then, they took the group who have Non-Celiac. In other words, a non-autoimmune sensitivity to gluten.

Guess what? They also had leaky gut. Then, I think to everybody's surprise, the people who do not have Celiac disease and do not have gluten sensitivity, when they were given gluten, they also got leaky gut.

Tony: There you go.

Dr. Chad: They also got compromised to their gut barrier, so they even have a line in their paper that says something like, "Everybody gets leaky gut by consuming gluten".

Tony: Wow. Now, just so we're doing good science, let's just clarify that this doesn't happen when you eat everything. You know what I'm saying? Is this a normal response to eating food, some sort of temporary disruption or irritation in the stomach lining?

Dr. Chad: They tested that. They used another substance and measured the reaction to this other substance, and it did not cause leaky gut.

Tony: Okay. All right, so we know that the gluten is doing something that causes leaky gut, and you said this is going beyond the autoimmune cascade that we described before with the intestinal villi, the little finger-like or hair-like projections being ... I almost imagine like a coral reef when they talk about it. Coral reef being bleached maybe out in Australia of the Great Barrier Reef. I think of that as maybe a large scale version of what's happening in someone's gut with Celiac's.

We're going beyond that. Let's talk now about normal gut lining structure, and then what leaky gut looks like.

Dr. Chad: Yeah. Great. Just to give you a little visual. I'm a visual person. I think a lot of people are.

Tony: I like it. Let's do it.

Dr. Chad: If you take your hand and you stick your fingers out straight, your fingers will represent the epithelial tissue that make up the single cell layer thick barrier system in the gut. It's just one cell layer thick barrier system, and your fingers are these epithelial cells that make up those, we call it the 'Intestinal barrier'. Right on top of your fingers would be those little microvilli, those little waving of hairs, increasing the surface area in where the brush border enzymes that break down your foods are all hanging out in that microvilli. Between your fingers, if your fingers are sticking out straight are a little cross-bridges that tie your fingers together, and we call that the 'Tight junction'. That's what creates this tight barrier system is these little ties, these bridges tying your fingers together, help to create this nice, tight barrier system, but -

Tony: Each finger is a single cell?

Dr. Chad: It's a single cell. It's an epithelial cell, and each finger is tied together, and

that's what creates the strength of the barrier system.

Tony: Got it.

Dr. Chad: That's what a good, healthy barrier system looks like, but in a case where there's leaky gut or intestinal permeability, there's a breakdown, so your fingers are no longer tied together and the fingers open up, and there's a space now between your fingers, and that's what we call 'Leaky gut', and so the things, antigens and other components of bacteria and things can now get through that barrier system when they otherwise are not supposed to.

Tony: In a normal situation, fingers together, that tight junction is established, the cells are being held together, and they're being very selective about what comes through.

Dr. Chad: Exactly. There's dedicated channels right down through your finger, right down through that epithelial cell that helps to transport important things through that barrier system that are supposed to be transported, but if there's a breakdown in the tight junction, a breakdown in the epithelial cells, then that's what we call 'Leaky gut', and there's no longer a healthy, dedicated channel. Things are now allowed to freely pass through that shouldn't.

Tony: It would seem as though gluten is affecting those tight junctions if it's stimulating intestinal permeability or leaky gut in all individuals.

Dr. Chad: Exactly. Something is happening where gliadin is affecting the strength and integrity of those components that hang out in between the epithelial cells, so that tight junction we call it gets torn up by gluten.

Tony: Now, you mentioned gliadin. What's the difference between gluten and gliadin?

Dr. Chad: Okay. Yeah. There's two things that come together to make gluten. There's gliadin, and another component called 'Glutenin'. When you add gliadin and glutenin together, that's what makes gluten, and so gliadin is one of the chief peptides of the protein, gluten that humans adversely react to.

Tony: Got it. When you eat bread, something that has gluten, and I guess through saliva and digestion, by the time it gets to your gut, now you have these peptides of gliadin and glutenin.

Dr. Chad: Exactly.

Tony: Okay. The gliadin, is there a particular reason why you singled that one out? Do they have some thoughts as to why that one might be particularly problematic for the tight junctions?

Dr. Chad: I don't know that they know why, but it does seem that that one is more hyperreactive to the immune system than glutenin, but a good comprehensive gluten evaluation, including the one that I use includes glutenin, and I've seen multiple people react to glutenin as well, but gliadin is a much, much more reactive substance than glutenin in our experience.

Tony: It's the more potent I guess of the two gluten peptides.

Dr. Chad: Yeah. Right.

Tony: Now, once somebody has this leaky gut situation, what takes it to the next level? Is it the chronic exposure? How much recoverability does the intestinal lining have after being subjected to a scorching by gliadin?

Dr. Chad: It depends on multiple factors. It depends on are there other insults that they're consuming or exposed to that are also leading to compromise the gut barrier. We can go over a few of those if you want to.

Tony: Yeah. Let's do it.

Dr. Chad: Yeah.

Tony: I think you're going to get into some of the lifestyle stuff.

Dr. Chad: Yeah. Absolutely. Yeah, just to throw in that real quick. We know that stress ... Cortisol is a hormone from the adrenal glands that gets released during events of stressful events, and cortisol is very well understood as one of the potential things that can break down the gut barrier, so stress could break down the gut barrier, lead to leaky gut. We know that alcohol can lead to leaky gut, and that's not just chronic alcoholism. There's an interesting study where one episode or event of a binge drinking, one binge drinking session that -

Tony: How do they qualify that because I think there's a lot of variability to individual if you ask, "What's a binge?"?

Dr. Chad: They did this in the study, so they had to quantify it a certain way.

Tony: Okay. Good.

Dr. Chad: I was going to ask you, guess how many drinks constitute a binge session?

Tony: I have a feeling it's not going to be a lot.

Dr. Chad: It's not a lot. It's four.

Tony: Okay. I was going to say three, but -

Dr. Chad: Yeah. Yeah. Four drinks is considered a binge, and straight across the board of the subjects that were a part of this test, it caused leaky gut, and that compromise to the gut barrier persisted for an extended period of time beyond the alcohol consumption and -

Tony: Wow. We're talking hours, days, weeks?

Dr. Chad: It was days.

Tony: Wow.

Dr. Chad: It was days, and that varied a little bit from subject to subject, but what was more important is they measured certain inflammatory components after the binge drinking, after the leaky gut, and so it created a significant amount of inflammation from that one binge session.

Tony: Sure.

Dr. Chad: It caused these components to get past that gut barrier and induce a pretty significant inflammation in the system.

Tony: Interesting.

Dr. Chad: Certain medications can do it like Ibuprofen is pretty well-documented to break down the integrity of the gut barrier, and of course we talked about gluten. Once that barrier system is broken down, then a whole variety of inflammation components could get through. One of the key ones is a component from bacteria, because remember, there's five to nine pounds of bacteria in the gastrointestinal tract.

Tony: No shortage of bacteria. Just waiting to get through?

Dr. Chad: Waiting to get through, and there's these particular components of a type of bacteria called 'Gram-negative bacteria'. You've heard of the gram-negative bacteria. They're like E. Coli, and Salmonella, and Klebsiella, and Helicobacter pylori. There's a huge, long list of these gram-negative that people have as part of their normal balance, but it's when these are allowed to really proliferate this component called 'LPS' or 'Lipopolysaccharide' which is from this gram-negative bacteria. This is one of the major problems in leaky gut.

This LPS from this bacteria is allowed to get through the gut barrier, and that's not good, because when that LPS gets through, that's a major inducer of inflammation systemically. In other words, even outside the gut. Once it gets outside of the gut ... Yeah. Go for it.

Tony: This bacteria in your gut normal. We have it in there. It's producing LPS. No big deal. It's getting passed out or circulated through the gut microbiome in some way, gets into your body, and that's bad. That's causing your body to freak out.

Dr. Chad: Yeah. Even this binge drinking study talks about maybe this is part of the component of a hangover the next day.

Tony: Wow. There you go.

Dr. Chad: It's this massive induction of inflammation from this leaky gut.

Tony: It's probably interesting.

Dr. Chad: Yeah.

Tony: I've actually just in my own personal life found that my max drinks in any given day ... This isn't like daily. This is every once in a blue moon when I decided, "All right. I'm going to cut loose a little bit". I say right around three or four because anything beyond that, I start feeling really bad and that's just a natural number that I have noticed like, "Okay. Five?"

"Definitely don't feel good the next day. Three or four?" I'm like "Okay. One or two? I'm usually feeling just about the same", and I'm thinking to myself, "This is probably because of the effect that has happened on my gut".

Dr. Chad: It totally fits with how you feel. Yeah. I'm sure other people have the same experience, and yeah, that could be a big component of it.

Tony: You could really see how these different factors are really piling all in a lot of individuals. You mentioned the Ibuprofen. I'm just thinking of some personal training clients of mine, people that have some maybe osteoarthritis or some aches and pains. Boom. Ibuprofen.

High stress jobs. Sleep I'm sure is a huge component of this as well. Having a few too many drinks, a few too many days a week, and now you've got five or six different things that are contributing to this gut breakdown, this intestinal permeability. I've also seen something recently. I think it's that long distance running was another contributor just maybe because of the amount of stress it puts on the body.

Dr. Chad: You explained it exactly. I mean, how common is that that people are consuming gluten, they're taking Ibuprofen like candy, they have three or four drinks every night, and have a bunch of stress? It's just it's no wonder -

Tony: Then, they try to run it off because they [crosstalk 00:26:11] -

Dr. Chad: Then, they run it off. Yeah. It's just multiple insults to the gut barrier, and then people are wondering why they have chronic inflammation, and chronic pain, or chronic headaches, or chronic whatever, and it could be coming from their gut.

Tony: Now, what are your thoughts on the relationship between this gut breakdown, the introduction of LPS and other inflammatory compounds passing through into the bloodstream, the correlation between that and some of these really well-known autoimmune conditions? I'm sure you can list off a few. I'm just thinking of like Hashimoto's and multiple sclerosis. What do you think about that contention that there's maybe a causal relationship there for some of these mystery illnesses?

Dr. Chad: Yeah. There's a pretty well-understood ... There's multiple studies that have made the connection between gluten reactivity and cross-reacting with certain thyroid components leading to autoimmune thyroid like Hashimoto's Thyroiditis, so there's a pretty clear connection there and it's getting clearer. The connection with leaky gut is when there's compromise to the gut barrier, that's going to make one much more potential to having gluten sensitivity. Since we know that gluten is one of the many potential triggers for breaking down the gut barrier, then this gluten, gliadin peptides are going to get through and the immune system is not going to recognize it as anything friendly, and it's going to produce these antibodies.

Then, probably for some susceptible, maybe genetic reasons or certain predispositions, that's going to cross-react with that thyroid tissue leading to that thyroid disorder, or you can put it in other areas of the body and potentially be a trigger to other autoimmune conditions, so yeah, there's a really developing, especially in the research world connection between these environmental triggers and autoimmunity. By environmental, I also include dietary proteins, along with other chemicals and things that we might ingest.

Tony: Right. When you say environmental, you just mean external, something that's not a genetic factor?

Dr. Chad: Exactly. Exactly. Yeah.

Tony: Got it. What I'm thinking right now, this is a good time to talk about what you guys do because I'm sure like myself, other people are wondering, "Okay. How do I know if this is going on in my body? What's a good way for me to figure this out without having to have a gross destruction of my intestinal lining already?", because you said that that's one of the, maybe I guess you'd say mainstream means of diagnosing it. It's "Do you already have that [villous 00:28:58] atrophy in the gut lining?" That seems like a little bit too little too late because by then, you've already been suffering for a long time.

Dr. Chad: Yeah.

Tony: How do you catch ... What's the canary in the coal mine? What can we do to figure this out before it gets to that stage or to an advanced autoimmune disease?

Dr. Chad: Yeah. I'll answer that by giving you a little bit of my history about how I came around to this is in clinical practice, my thing was always sports medicine and orthopedic injuries. It was my main focus, but autoimmunity kept showing up and I had to keep addressing it even though that wasn't really my focus. Some people came in with autoimmune conditions that weren't really being managed appropriately, and then in many cases, I had to actually diagnose the autoimmune condition because people just weren't looking for it, and there were symptoms that we needed to take deeper for, and we find out that they were autoimmune, and so I needed to get educated. We had a little education in school about autoimmune conditions, but I wanted -

Tony: Where did you go to school just so we can have an idea in our head?

Dr. Chad: Yeah. I was first a chiropractor. I went to Los Angeles College of Chiropractic, and then when I started having patients that their conditions didn't really fit into my chiropractic license, I decided to go back to medical school, and I went to Southwest College of Naturopathic Medicine. It's in Tempe, Arizona, and it's a naturopathic medical school. That's where some of my initial understanding of autoimmunity really happened.

Then, I've read multiple papers by this point from a researcher named Aristo Vojdani. Dr. Vojdani, his whole focus as a researcher has been on autoimmunity, so really got educated pretty well by his papers and his lectures. Then, I said, "You know what?" I found out he was creating this lab called Cyrex Labs, and the whole focus is autoimmunity, and he's the Chief Science Officer for developing the test, and I said, "Man". I want to just go ...

I called them up and I said, "Hey, I just want to learn from you guys. Can I just come and hang out?", and they decided to hire me as a consultant. They got me educated and I had lots of one-on-one time with Dr. Vojdani which really took my understanding of autoimmunity to a new level. That's really pretty much everything I've mentioned I've learned from Dr. Vojdani and his teachings. That's really where I learned about autoimmunity.

If a person is developing these symptoms that just aren't going away, yes, getting tested is so key because the earlier that we could detect the autoimmunity and start treating it, the better, because remember, we're talking about organ destruction which in an unresolved case could lead to

organ failure, so there are still some health of the tissues that we could maintain if we could diagnose and start treating early on.

Tony: Right.

Dr. Chad: We don't want everybody to be hypochondriacs, but we're talking about symptoms that really, really persist, and autoimmunity hasn't been evaluated yet.

Tony: Sure.

Dr. Chad: That's a stone that needs to be turned and there are some things that we can do to start to identify these triggers.

Tony: Now, I think it can be a little bit ... Okay. Let's say someone gets to this point, and to get to this point, you already have to be thinking a little bit outside of the box, and you already probably have to be suffering quite a bit because if you go to your standard practitioner or your standard gastroenterologist or your family doctor, and you say "Hey, I'm having stomach upset and bloating and these other problems", and they're going to send you to get a colonoscopy, and they're going to likely tell you that everything is okay even if you're still suffering, and if you're still suffering, maybe they're going to give you some medication, some anti-inflammatory medication, or maybe some steroids of some sort. Now, while I'm mentioning that, what do you think about the standard practice of medicine when it comes to somebody with Celiac's or with leaky gut? Do you think that our medical community at large, and I'm not talking about specific individuals who are likely doing a very good job, but just in general, how well or how poorly do you think we're doing when it comes to that?

Dr. Chad: Let's say they go to that let's say standard medical doctor or pharmaceutical-based doctor and they have those symptoms that you're mentioning like gastrointestinal symptoms that are becoming chronic, and let's say they even run a Celiac panel which after they rule out a few things, the Celiac panel should be a part of their general algorithm that that would be the next thing to evaluate. Let's say they do that, and let's say it comes back negative. Then, they say, "All right. That's one more thing we ruled out. You don't have Celiac disease, so let's move on to the next thing."

All the while, they might have this underlying Non-Celiac gluten sensitivity, and they were told that gluten is not a problem, and gluten might be their actual primary problem, but it's going to be missed on a Celiac panel because a Celiac panel is only looking for Celiac disease. It's not looking for Non-Celiac gluten sensitivity, but we know now from the most current literature that there's two gluten-related disorders.

Tony: Right.

Dr. Chad: There's Celiac disease and there's Non-Celiac gluten sensitivity, and so that's exactly where a Cyrex Lab type test comes in. They have a test called the 'Array 3', and it goes well, well beyond the Celiac panel. It has the same markers that a standard Celiac panel would have, but it also has a whole bunch of other markers to evaluate also for gluten sensitivity that might not have any Celiac disease component, and so it helps to decrease the chance of a false negative. Remember, a false negative would mean that "Okay. You don't have gluten sensitivity", but they're measuring a very, very narrow

gluten evaluation, and we want to have a much broader evaluation to really rule out gluten sensitivity, and so that's going to be missed by most standard doctors that are falling just a typical western algorithm for ...

Tony: Right.

Dr. Chad: Yeah.

Tony: What do you think about the standard treatment which I've seen is often the [anti-steroidal 00:35:49] medication, anti-inflammatories?

Dr. Chad: Yeah. It's very common to just put a person on anti-inflammatories and just see if their symptoms get better which they do because it's going to be suppressing inflammation, it's probably going to be suppressing their immune system's response, so you just put a cap on it. You just drive that down, but that festering issue is still percolating underneath that cap, so when they start to come off with these anti-inflammatories or immunosuppressors, it's just going to explode right back out again, and so they're just going to be on just a conveyor belt of medications, and yeah.

Tony: Those medications obviously are now without side effects of their own?

Dr. Chad: Absolutely. Absolutely. I mean, anytime you're on a corticosteroid like something that's going to be immunosuppressive, it just makes that person a susceptible host to any opportunistic pathogens that they're exposed to, and that can lead to a whole downward spiral of immune issues, so yeah. Oftentimes, they're mismanaged in autoimmune conditions because oftentimes, we talked about Celiac disease, but we also mentioned something like Hashimoto's Thyroiditis which what's mostly treated is just the thyroid symptoms because of -

Tony: Right. Yup. Put them on Synthroid or do some thyroid replacement or something along those lines? Destroy the thyroid basically, and then replace it?

Dr. Chad: Exactly. I mean, it's an autoimmune problem, and everybody forgets that. It's an immune problem. The thyroid is manifesting the symptoms, and so it needs to be treated relative to the case, but we have to go after the immune system. That's what's oftentimes neglected is we have to help try to identify the triggers to that abnormal immune response.

Tony: It seems like in a vast majority of cases, the source of this autoimmune response if you exclude lifestyle factors and genetics, it's diet. It's what's happening in the gut.

Dr. Chad: It's diet and including intestinal permeability. Leaky gut is a key gateway to autoimmunity.

Tony: This is what I was getting at before I segue it into the conventional medical care. Let's say I'm hearing this, I'm feeling it, I've gotten to a place where I have a healthy level of skepticism when it comes to conventional medicine or perhaps my particular physician, and I say, "Okay. I want to take control of my health and I want to figure out what's going on", I go to your website at Cyrexlabs.com, and I look at the test and arrays, and there's I think one, two, three, four, five, six, seven, eight, nine, 10, 11, 12, 13 different things. How do I navigate that? Do you recommend finding a [with it 00:38:48], cool, a

practitioner, someone whose got this down?

Is that what you would recommend to help navigate this or do you think that this is something that someone could reasonably manage themselves in terms of at least selecting which tests are going to order?

Dr. Chad: No. Actually, I would not recommend that. I would recommend that in fact, Cyrex doesn't communicate directly with patients. I mean, you could call them and ask. It's not like they won't take a phone call, but you can't order a lab kit as a health consumer directly from Cyrex.

The client of Cyrex are the providers, not the patients.

Tony: I've got you.

Dr. Chad: A patient would have to either find a Cyrex provider in their area or they go to the provider that they like and say, "Hey, I learned about this lab. Can you look into it, and if you agree with it, can you set up an account, and so we could order this lab, this Array 3 or Array 2?", or whatever they are interested in. They could open up that line of communication with their provider, and then their provider takes it from there.

Tony: I think a good question at this point would be "What do you look for in a provider? What are maybe some credentials or what are some things that people can just keep their eye out for?" Just like if I'm reading food labels, I know what to watch out for. I know high fructose corn syrup and hydrogenated oils and anything wheat-derived. I'm looking for those things, and those are red flags for me. Are there green flags for looking for a practitioner? Are there certain things that you would notice and say, "Okay. This is a promising prospect"?

Dr. Chad: Yeah. I would say if you're looking out a website of a provider and they say things like non-pharmaceutical approaches to disease or integrative medicine, or even alternative medicine, whether it's an MD, a medical doctor or a naturopathic doctor, or a chiropractor, they can all order from Cyrex test. Oftentimes, a chiropractor who's trained in these type of internal conditions or a naturopathic doctor very much understands these underlying triggers to autoimmunity, and then medical doctors who've had extra training in integrative and alternative medicine, they're going to understand the stuff as well, and they're going to want to ... The medical doctors that practice this way are going to talk about that pretty obviously on the website, and first of all, just if a medical doctor has a website.

Tony: Right.

Dr. Chad: Most likely, they're in private practice and they're not at the hospital setting and they're probably doing some type of integrative medicine, but yeah, you might have to dig a little deeper and call them and find out, see how many cases that they've taken that where they've looked at underlying causes to autoimmunity or maybe even just calling a provider that you might have in your area and say, "How do you approach autoimmunity?", and they should let you know how they approached that.

Tony: Nice. Don't be afraid to do some interviews, and remember that you're in control, that you don't have to just accept the current doctor that you're with. Be empowered to find a practitioner that's of a mindset that's maybe more

progressive when they're doing their practice of medicine.

Dr. Chad: Absolutely. Yes.

Tony: Awesome. Hey, Dr. Chad Larson, thank you so much for joining us today. Is there anything else that you like to mention before we wrap up?

Dr. Chad: I would say just that we all keep those things in mind, that our general health very much has to do with our environment that we find ourself in, and to be mindful of the things that we expose our bodies to the different types of environment, including the types of food that we choose because foods could be poison and food could be medicine, so just to keep that in mind.

Tony: Awesome. Thank you so much. This is certainly enlightening for me, so I'm glad I got to hear this conversation. I think our audience is going to enjoy it as well. Thanks again.

Dr. Chad: Thanks for having me.

Tony: That was Dr. Chad Larson of Cyrex Labs. You can find out more about Dr. Chad, Cyrex, and the clinical testing services that they provide by going to their website, Cyrexlabs.com. Next week's show will be a Paleo Radio bite with Dr. Polina Sayess, co-founder of the Physicians for Ancestral Health. Here's a preview.

Dr. Polina: At some point, we were curious how many doctors were there, so we asked the organizers to send an email to everybody asking if there are any doctors in the audience, and basically, we met on the patio and decided to get together after that. That was the origin of the Physicians for Ancestral Health.

Tony: To find out more about Dr. Polina, as well as the Physicians for Ancestral Health Organization, you'll have to tune in to next week's show. To make sure you don't miss it, be sure to subscribe to Paleo Magazine Radio on iTunes or favorite us on Stitcher. Before I'd go, I like to thank the sponsor of today's show, Ancient Nutrition. This past year has age us. Chris Masterjohn said that "Collagen protein like the kind found in Ancient Nutrition Bone Broth Protein can help make meals more satisfying". I've tried this technique by adding collagen to coffee, shakes, soups, and other foods, and it definitely works.

I'd also like to mention that the November issue of Paleo Magazine Insider is now available. If you don't know what Paleo Magazine Insider is, let me tell you. It's a monthly online exclusive publication that features original content from the Paleo Magazine team. In it, you'll find delicious Paleo-friendly recipes, thought-provoking articles, and insightful lifestyle advice. In the current issue, we've got Paleoish cocktail tips, the Paleo dieter's missing link, cautions on probiotics, and more.

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