Paleo Solution - 317

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Robb Wolf: Hey, folks. Six listeners cannot be wrong. This is Rob Wolf. Another edition of the Paleo Solution Podcast. Today's guest is Guillermo Ruiz. He is a third year naturopathic medical student and also the founder of 3030strong.com.

Guillermo, how are you doing, man?

Guillermo Ruiz: I'm doing well, man. It's the best to be here.

Robb Wolf: I'm super exciter to chat with you. Tell folks a little bit, I didn't realize that the 2014 Robb & Mark Show lit a fire under you to do some stuff. Tell folks about that. At Paleo FX I guess you were in the audience. Just tell people that story.

Guillermo Ruiz: I've been in this paleo thing for a while now. It always I want to be a doctor. I want to be a doctor. I work at an emergency department, Arnold Palmer in Orlando Florida. I did that for 5 years and I grew tired of just seeing the patching up of kits and yeah we won. And then the discharge notes are like okay eat healthy. What does that mean? So I started looking into things.my girlfriend's mom was diagnosed with cancer. So I go into PubMed. It turns out that the cancer she was diagnosed with its related to celiac disease. So pint out all these studies and case studies. Because it was jejunal cancer so by the time you are diagnosed your jejunum was completely obstructed and by that time it was everywhere.

So print out all stuff, she talks to the surgeon and says well it's not your fault. It's nothing you did. We need to fight this and be strong. But what about all the genetic material that she has that is working around the earth. So I was disgusted and I was get into this in a different way. I need to be on actual healer or whatever. So I started listening to Robb. I started listening to Chris Kresser. In fact, Chris Kresser was the first person I ever heard naturopath. So I send an email to [indiscernible] now I'm here. But the biggest thing was going to Paleo FX '14 and sitting at The Robb & Mark Show and you just basically tossed the ball and said hey it's your turn. What are you going to do? And I did that seriously so I reached out to Dr. Ruscio and we've been in contact, emailing just bouncing ideas. Then, I came to school and started-- I've always liked research. So I started getting really really heavy into research and I went from just being a PubMed junkie with no lab experience and under the

help of Dr. Jeffrey Langland who was my mentor basically just caught my teeth, doing viral experiments and gels and bacterial experiments. And that's why I'm here, man.

Robb Wolf: That's awesome. That's awesome. You know the history of medicine is really fascinating and I know typically first year naturopathy school you get an exposure to that and in the late 1800', early 1900's, it was a very different landscape than what it is today with essentially a monopolistic entity of like the American Medical Association. We'll call it the allopathic medical model. Do you want to talk a little bit about that? I just that find that very interesting and most people don't know much about it.

Guillermo Ruiz: The basis like where it started was Germany and this guy, Priessnitz, he was in nature just looking at nature and he saw a deer that was injured and that deer was coming to this creek and basically just dipping his leg into this cold stream and just by doing this and sort of like a hormetic way just increasing circulation to that leg and then after a while this deer get better. That was the beginning of using nature to heal yourself. Then this guy, Priessnitz, got into a big accident and they thought he was going to die and he would just real himself to the creek and that's how constitutional-- that's the beginning of constitutional hydrotherapy. And from there you start having all this crazy or hippies like me who are looking for alternatives for just using mercury to try to cure things.

Robb Wolf: Right.

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Guillermo Ruiz: And that's how you start getting into people like Rickley who I believe was the first paleo guy. All the rave was doing a vegan or vegetarian diet and he said that-- That didn't work for him so he stated eating meat again and he started getting better and then he introduced tanning so then he started using the sun, the nature. And little by little you start creating this natural medicine front and you could go to your doctor who would use crude, mercury or different chemicals to try to treat something or you could go to the naturopath and try to use nature and then the Flexner report comes in and then there's a bunch of money thrown in towards John Hopkins and we basically start getting discredited. At one point, natural medicine almost completely disappeared from the United States.

Robb Wolf: But a period prior to that there were many naturopathy schools around as what we would call like allopathic medical schools.

Guillermo Ruiz: There were two types of schools. The allopathic school and the naturopathic schools were around too at the same time and then the Flexner report was what started defunding the naturopathic schools.

Robb Wolf: Right.

Guillermo Ruiz: And the chiropractic schools and--

Robb Wolf: Osteopaths.

Guillermo Ruiz: Osteopaths. And the osteopaths ended up in the same camp as the MDs can't really differentiate their curriculums anymore. And I hope that in the future because I see regulation. When I started school there were around like 13 states that were licensed. We're up to 18 and I hope that the more acceptance we get and we don't start going into that allopathic way and I hope that we preserve our core and we use pharmaceutics because they're useful but we continue focusing on nutrition, focusing on natural therapies.

Robb Wolf: It's interesting because the pendulum has swung in such a fascinating way. We've really gone down this pharmaceutical route whole hog. I've been picking away the kind of like food politics, medical history, like how do the state of United States healthcare get to where it is. One chapter I actually make a point that antibiotics were so powerful and such a game changer that it oriented everybody towards this one disease, one cure, magic bullet kind of orientation and this is where chemotherapy has gone with cancer and we've done a heroic effort investigating that and if you look at trauma medicine and emergency medicine, I would argue that it's almost miraculous like if you get shot, you get hit by a bus, like the things that we can do today versus 20 years ago are nothing short of miraculous.

But when you look at our ability to deal with chronic degenerative disease, it is completely unimpressive and if you look at kind of innovation in different areas like microprocessors like your iPhone, the smartphone we all have is way better and way cheaper than the one that we had 5 years ago. So this Moore's law thing where things tend to get cheaper and better and we see none of that in the rest of medicine. Very rare instances like LASIK eye surgery, you see some of this. You don’t see a ton of this so now you do have an element of I guess what you call the mainstream medical community that are starting to think like okay so sleep, food, exercise, community, gut biome. This stuff is actually pretty important if we're going to get something going here like we're probably not going to figure out a pill that can replace all of that stuff, all the

epigenetic inputs that alter the way our genes work pushing it towards a healthy state.

Guillermo Ruiz: And it gets-- it's so much bigger than our nearsightedness. For example I supper with shin splint for years and I went to Walgreens and I'm ashamed to say this. I went to Walgreens and grabbed one of those braces and I put on the brace and I thought this is life. That was my thought. I'm just getting old.

Robb Wolf: What are you like 24, 25?

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Guillermo Ruiz: At the time I was. I'm 34 right now. So then I started this paleo thing and then I started reading about minimalistic shoes and I go I'm going to give it a try and the shin splint disappeared completely. Just this very small intervention that is used. I was talking to one of my classmates and he was telling me that he has read that plantar fasciitis is not a fascial problem. It's actually in your feet getting too laxed and your fascia just keeping your foot together. And it makes sense. So now when we have these interventions that are so cheap. Instead of buying your Nike just buy you minimalist.

Robb Wolf: Right.

Guillermo Ruiz: And they are curative. And that's the core of naturopathic medicine. You don't treat symptoms. You don't treat symptoms. What you're treating is the obstacle to health. So in this case with plantar fasciitis, you go to your practitioner and they go I'm going to give you some oxycodone or I'm going to give you some naproxen sodium and the symptoms gone but did you fix the problem. That's at the core of naturopathic medicine, we're looking for what that problem is. One thing that really upsets me sometimes is when you hear-- I'm talking to people about my profession or what I want to be and they'll say my doctor is so holistic and instead of metformin, he gave me cinnamon. As if you have a cinnamon deficiency.

Robb Wolf: Right.

Guillermo Ruiz: It's unreal. It's unreal but that tells that the tides are changed. That tells me that they know that we need to figure out how to use this more naturalistic approach and I don't want to sound that airy-fairy but it is important to look at this evolutionarily and then make those changed. If you need a little bit of metformin or if you need a statin so that you don't

stroke out, that's important but always for that foresight of getting you out of that medication so you can get better.

Robb Wolf: Right. I can't agree more. Ironically I'm recording from today's podcast from the specially health clinic. We're doing a remodel of the Lazy Lobo Ranch so I'm out of there and then they were doing a construction in the office that I have downtown so I basically am in a broom closet at specially health. But what this guys were doing was some really amazing lipidology when I first met them but I started looking some of the patient files that they had and there were people with high LDL cholesterol, high LDL particle count and I started digging in a little more. I'm like hey this guy really looks like he has some squirrely thyroid maybe he's got some adrenal stuff going on.

Why don't we do a 4 point ASI test and we started getting him doing some functional or evolutionary medicine and a bunch of people I would say like 70% of the folks that we're getting a low dose statin, quite low dose, 5 mg a day whereas the usual doses like 20 to 40 mg a day of like Crestor or something but I still to your point I just had this sneaky suspicion they do not have a statin deficiency. So we dug a little more, dug a little more and then we got the docs trained up on how to find let's say HPTA axis dysregulation instead of calling it adrenal fatigue because people freak out about that.

So they had some signaling going on that was maladaptive between the adrenals, the thyroid, pituitary gland and we managed to get ahead of that in a variety of ways that usually had some customization. And about 80% of the people that were going on statin albeit very low dose statins no longer needed those. We were able to reverse their elevated LDL cholesterol and elevated LDLP by addressing some deeper underlying issues. And then that was kind of one layer of the onion and the next layer was like hey this guys might have some gut dysbiosis and that might be driving some of this stuff. So they were already doing some really good work here but over the last 4 years it's really gotten much more-- we start asking fundamental question instead of just treating symptoms and even the very few people who are still ending up on a statin like from a standard care deal, you still to cover your own ass you kind of have to support some of that. But I'm still like I don't know if this person needs that. Maybe there's just something we're missing here.

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Guillermo Ruiz: And then it's so frustrating because we're having this circle jerk conversation right now. You agree with me. I agree with you. And then

when I go into my classroom and I sit down. The other day I had a couple of classmates talking about paleo and I don't want to be the "oh, actually-" guy- He was saying I really don't get the oomph that I get with paleo that I get when I don't eat paleo. They are still thinking that paleo is like this macro nutrient driven thing where you eat bacon and brownies made with yucca flour. I don't know. I actually teach a class at a school for the community called demystifying the paleo diet. And I go into the science of like okay guys really it's not about bacon and lard. It's more about looking at your genome to a certain extent and looking at your ancestry and looking at your energy expenditure levels and then go from there and what's paleo anyways. But it's just a big mess.

Robb Wolf: It's the paleo moniker and I've talked about this a lot. One thing that I just have to remind people I didn't come up with this. Loren Cordain didn't come up with this. Boyd Eaton didn't come up with this. This was stuff that was in the anthropology and archeological literature where this folks found observationally got to have that caveat. It's observational but they observed that our archaic human ancestors were tall and robust and had a full mouth of teeth and relatively few dental caries and each one of these things like somebody will find one example are like there was a homo erectus with cavities.

They'll find the one except-- there's always an exception to something but what's the general trend here. And it's like these people lived without the benefit of any type of real medical intervention or public health or hygiene or anything like that generally were pretty remarkably healthy and then there was this transition to the agricultural life where people tend to get shorter and bone malformations, higher infant mortality rates. We can tell that because there's a lot more infant skeletons in a given group of people.

Again it's observational but it was just like that's interesting. All those conversations doesn't stop there but it's just from observational point like what can we learn from that? And maybe try to think about how our not so distant ancestors ate and slept and moved and interfaced with each other in the biome around us. Maybe there's some implications there for our health. But that's a relatively nuance story. Cordain has articulated that. Boyd Eaton has articulated that. I've done the best I can to articulate that. You try to put out these heuristics so you got some simple guidelines. It's like okay generally avoid greens, legumes and dairy and get back to me in 30 to 60 days and some people will do that. They're like wow this is great and I can have some corn tortillas and no ill effects. If I have a piece of wheat bread then I'm shitting like a goose. That's really

about as far as the analysis I guess kind of needs to go beyond customization but it really becomes an incredibly contentious topic.

Guillermo Ruiz: Within my close group of friends every time we talk about either my family member has this or I have a patient and the joke is have you tried gluten free? As if it's a panacea. It's an inside joke. But there're very healthy people that can get away with eating bread and it turns out as a practitioner how do you explain, how do you sit in front of your patient and tell them hey you need to stop eating donuts. Because there's going to publications that say wheat is not that bad and there's going to be publications that wheat is bad. At some point, you have to draw that line and just go back to your point of-- There has to be guidelines.

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There has to be and maybe sometimes these guidelines are going to be crazy and they don't apply to everyone in the population but for the most part going gluten free for a period of time and see how to react to that is pretty straightforward and the cost benefit is you're going to be on the block at the end of the day. If once in a while you can eat a piece of bread, more power to you. I can't but we need to look at this not for me black and white but more into let's see what we need to do in order to get this person better and then we can move on from there. And maybe in the future just like with the statins, maybe in the future you stop taking your statin and you'll have some cake once a year and you'll be okay.

Robb Wolf: Right. Right now I just couldn't agree more. I think most folks listening to this pod cast we're pretty much singing in the choir on this like you said we're having a mutual circle jerk here on a lot of this stuff. But a ton of people are coaches, healthcare providers, one of the most common questions that I received is what should I do with my life? Should I be a doctor? Should I be a naturopath? Should I do this? Should I do that? There's a lot that goes into that like how do you want to spend your day? What type of security do you want?

Guillermo Ruiz: Risk aversion.

Robb Wolf: Yeah, risk aversion and all that but at the end of the day most of these folks are in some way or another whether your blogging or podcasting or actually being a brick and mortar clinic healthcare provider, you are going to interface with people and you're going to have somebody sitting across the desk from you and hopefully you're going to have something to say to that person that's going to move the needle for them and there's just an amazing amount of pushback about this. If I were to throw

one thing out there, what's the one thing a person could do or I'll sneak in two things it's like sleep more, try removing gluten for 30 to 60 days and I just—

We had a really fascinating thing go down here at the University of Nevada, Reno. The guys who run the athletic training department, really good dudes. They do a phenomenal jobs and they're super into paleo and gluten free and they understood early on the need for appropriate carb dosing but they were getting it from lower inflammatory sources and the athletes loves these guys. People were doing great like all this wacky things like plantar fasciitis and stuff like that got better because they're kind of inflammatory load decreased.

Guillermo Ruiz: Less inflammation.

Robb Wolf: But the nutritional folks got wind of this and there was a pissing match like you could not believe. There was a group I'll say like the kind of paleo friendly folks literally on one side of the table and then on the other side of the table was a doctor and a dietitian and professor of nutritional science on the other side of the table. Man, this thing just got super-heated and I had not said anything at this point then I leaned forward and I said could you guys tell me what nutritionally gluten and gluten containing items are providing that cannot be found by other sources. And it was just silence beaches it's bullshit. Like if we were talking about B vitamins, it's like broccoli wins or we're talking protein well nuts or meat win. It's just like thing after thing after thing and then we get into well it's disordered eating. So where does that start? Is a big gulp is a bag of Fritos is that disordered eating and why not?

Guillermo Ruiz: You remember Denise Minger, how to debate a vegan?

Robb Wolf: Uh-huh.

Guillermo Ruiz: I've been living with what you said at the end of that when you were like you know what screw them. There're sick people out there. . There are sick people out there that are willing to listen to you. Why are you wasting your spit trying to convince a vegan to eat a different source of protein?

Robb Wolf: Right.

Guillermo Ruiz: That's my call right now. There's people at my school. They are 100% vegans. There's people at the school that are into paleo things and there's people at the school that bring Domino's pizza to a class. And

guess what the only people that I care that are listening to me are my patients and people are going to be sitting across from me are people that are so sick that they're willing to stop eating donuts just to get to live it better.

Robb Wolf: Right. Guillermo, so we've talking a lot like as we've been putting together this risk assessment program on the compliant side, I feel like I've been pretty good at putting out let's say like the knots and bolts of how this stuff works like sleep, food, exercise influences your genetic, epigenetic profile in a favorable way and that's appealed to one to 1 to 5 million people in the United States between myself and the other people in the ancestral health scene.

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That's kind of where the bubble of this thing stops and then there's a layer of folks that are just not buying into that the idea of this change is too onerous or it's too weird or what have you. What are the levers that we need to pull to get that next 10% buy in on this topic to just get people to try this thing. It's like the person who has emphysema but they're smoking through their trach tube. How do we get beyond that person who clearly needs to change things but is afraid to do it?

Guillermo Ruiz: I'm going to make two points and you used emphysema as exaggerated example. But why are we-- the thing that this get-- The person with emphysema is probably addicted to his nicotine and nicotine is pretty benign. So just give him a patch, have him chew some gum and just try to work with that patient so that they get better. There're very good studies on the good effects of nicotine and you know that. But we are so scared of tobacco causes cancer and then when you start looking at nicotine, nicotine is actually pretty good, benign just like caffeine. But we stopped at tobacco and we don't continue that story. For example a lot of insurance companies now are testing for nicotine as a way of saying hey is this person have a higher cancer risk.

Robb Wolf: Right.

Guillermo Ruiz: Which is insane but that besides that point. That was just a silly side comment. One of the biggest things that I think that is going to bring bi-compliance is being effective. So who's going to be listening to you? I am focusing on chronic pain right now with my education because we have this huge gap where we have people that are hurting and they go to the doctor. They have some tendonitis or something like that. They give them some oxycodone again removing symptoms not the actual problem and

then the continued pain and they wait until they need surgery or they run out of oxycodone and then now they're treated like drug hippies because they are still in pain. So these are the people who are looking for alternatives and I don't like to call my type of medicine is alternative medicine because medicine either works or it doesn't. So they come to us and all these people have certain level of insulin resistance. You have two groups.

Your CrossFit people that are hurting because they did France times three and they can't wait to get back to the box and then you have these other subset of people that are a little bit older that have the disease of civilization kind of picture with a little bit of insulin resistance, a little bit of this, a little bit of that. And by treating the actual problem with injection therapies with deep tissue massage with a little acupuncture and you correct that problem and then you add to it but you need to eat an anti-inflammatory diet and guess what the pain goes away and now you have buy in and now these people are willing to do anything and everything so they don't have to be suffering again. And you know in New Hampshire huge problem with heroin because it turns out that heroin is cheaper than oxycodone and we're going to kill ourselves with treating the way we treat pain and the way that we're treating it and it's not right and it's goes back to your penicillin for bacteria and oxycodone for pain but the bacteria is the actual to health. Is pain the obstacle to health? Again, no. that's the symptom. We correct the underlying thing.

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Robb Wolf: I like it. I like it. So just to maybe encapsulate that as kind of an actionable thing for folks whether they're healthcare provider, coach, maybe trying to find a specific intervention like in this case we're talking about some injection therapy that maybe gets the person out of the pain cycle initially and then you've got a little bit more potential buy in for them to like okay the injection therapy work for now because we got this localized inflammatory response. We got some remodeling and everything but this is a symptoms of bigger stuff and we need you to sleep more, we need you to do some movement, and we need you to modify your diet. You fell like the injection therapy is maybe something that kind of an ice breaker to just get in the front door and say hey I know what I'm talking about, man. And now we need to take the next step and the next step.

Guillermo Ruiz: Do you mind if I explain a little bit of what this injection therapy is?

Robb Wolf: Absolutely, please.

Guillermo Ruiz: So it's a proliferative therapy or prolotherapy and it's just a little bit of dextrose with either a short acting or a long acting anesthetic like procaine. Let's say you have like a torn ligament in your shoulder or something, not torn because that would need a surgery to fix it. But you have some laxity in your shoulder. So we go in and we inject right at the capsule or we target those structures that might be affected and we do this with a clinical diagnosis approach. We do some muscle testing just to see what muscle is the one that is not activating. We do always some fascial work to try to realign the fascia because that fascia is not elastic like your muscle it keeps everything in place.

And then the dextrose goes in and creates inflammation so now your body is like oh shit that's where I'm hurt and it sets the anti-inflammatory cascade there and by proxy it fixes whatever underlying problem is there plus you get a little bit of the procaine so you get a little anesthesia in there so now you don't hurt. But you have to tell your patients maybe the reason your body was not acting on that lesion was because you're not sleeping because you do have a little bit or you're little bit overweight and you are pre-diabetic and if you don't want this to continue, you need to do A, B, C and D not just take an anti-inflammatory for the rest of your life whether it's turmeric or some other COX inhibitor. You need to change your life.

We try to get these people and one of the doctors I work with, Dr. Inouye, he wants to see results within 6 months. He's not there for you to go and get injections. After that, he refers you out because you obviously not complaint because this stuff works. Little things like this that are going to allow people to return to their daily living. People that work with manual labor and their income depends on this pain, they'll do anything. They'll do anything to get better. And when you're sitting there and you actually being effective and actually giving results. They are going to pay attention to what you say and hopefully buy your book and then give it away and then tell other people. But we're getting them in. like a couple of years ago. It was hypothyroidism or it was celiac disease that was getting people into the door and then making this recommendations. I see a future where we can grab this subset of people with chronic pain and turn them into our allies.

Robb Wolf: It's a huge number of people that you're talking about. There's a huge number of people coming out of the military that have this pain syndrome whether it's back or the neck and like they just can't get on top of it, lots of people on the repetitive movement seen but it's a pretty large group of people. There's outfit called proofed genetics. We actually did a sit down with them about 5 months ago and they're doing some

really fascinating genetic testing where they find folks and these are people who are perspective back surgery patients. What they're screening them for, there are some people who have a very low pain tolerance for other people. It's a spectrum. You have a low pain tolerance, high pain tolerance, people in between.

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You also have a low opiate response versus a high opiate response. The low responder needs a big dose of opiate. The high responder needs a low dose of opiate and then you also have a likelihood of opiate addiction so you've got this kind of matrix here. The disaster person is the person who is a low opiate responder, a high likelihood of addiction and they have a given amount of pain induction, they feel pain more acutely than most people. And those folks if you're able to screen them out then they will do everything possible before surgery, every--

Guillermo Ruiz: Intervention.

Robb Wolf: Every intervention you can imagine - physical therapy, shaman, DMT. I mean they'll do anything because these are people that are very high likelihood of getting the back surgery, getting hooked on opiates and never really getting some resolution whereas if you got a different matrix like somebody that's a good responder, low perception of pain then there's some improvements there. are you doing of any type of genetic or even just kind of on an intake or what type of screening are you doing in that regard so that you can kind of sort and shuffle people?

Guillermo Ruiz: We have a pain center at my school. When I'm at the pain center side of things, it works. It's pretty fast paced. We have a lot of patients coming in so we really can't sit down and say so how does your poop look in the morning. These are people who are in pain and do injection therapy and it's in the fringes of natural medicine. I believe it's curative. It's a curative approach but we really don’t have any screening. But a lot of the patients who were referred to the pain center are patients from naturopath who have been doing the diet thing, have been doing the sleep thing, and the lab thing and then they're referred to us because they just need that little extra push to get them better.

So that's how we work. Now we're doing some really cool things at the pain center. We had a couple of injection therapy sessions where we're actually using stem cells where we go into the iliac crest and we purify those and we inject them back. Pretty crazy results and that's the sort of things that made me go into the wild wild west of naturopathic medicine

that I'm not tied to my prescription pad that I can make my own path even though there's a lot of risk because there's not insurance-- there's little bit of insurance coverage but it's not mandatory. So you got to be good in order to make it out there. So doing that, it's just fantastic.

Robb Wolf: That's great. That's great. Guillermo, you have a poster presentation slated for the ancestral health symposium in Colorado this august. Talk to folks a little bit about that.

Guillermo Ruiz: Right after I spoke to Robb at Paleo FX '14, I went back to SCNM and I was like I need to do something. I need to make a dent somewhere and I got involved with research. My involvement really started during one of the classes someone said botanical teachers are so awesome because antibiotics they create resistance to bacteria or bacteria create resistance to antibiotics but botanicals they're natural. The bacteria will never create resistance. So there was a project where we were able to prove that bacteria can make resistance to botanicals.

Robb Wolf: Which would make evolutionary sense. I mean this is an arms race.

Guillermo Ruiz: We'll be gone and the bacteria will be gone. So then with the diffusion disk and $1 TSA plates, I started cross examining the relation between antimicrobial tincture and the actual antibiotics and I started unearthing or discovering the actual mechanisms of action of these botanicals and you're talking about very similar mechanisms of actions to a beta lactam, very similar mechanisms of action to quinolone to that point that we did ELISA test and there's actual beta-lactam in some of these tinctures.

Robb Wolf: Interesting.

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Guillermo Ruiz: So now imagine all of the people that walk around with their bottle of water, squirting a little bit of tincture for whatever health purpose and now their drinking all day long this antibiotic water so that makes no sense. So then my mentor, Dr. Langland, had been doing a little bit of work with carnivorous plants and we started getting into the evolution or why do these plants make this endogenous things? It's not because they want to help us because whatever.

They are evolving as we are. But because there's this access where a carnivorous plant has to eat and whatever a mosquito flies into it, it has different things, different pathogens. It's a vector for many things and that plant can't just get up and go to the doctor and get an antibiotic

prescription so this plant creates this endogenous substances that it's going to help the plant survive this infection and they seem to be effective in humans too. So my poster presentation I'm going to talk about and not to give it all the way because you guys got to stop by and say hi to me when I'm at a poster. For example if you look at the taxonomy tree, there's a fork where these plants become carnivorous or non-carnivorous. The carnivorous side of this tree has antiviral activity and the non-carnivorous doesn't and if that's not evolutionary medicine, that's not-- what we are trying to say out there, I don't know what is. It's just pretty fascinating.

Robb Wolf: Right.

Guillermo Ruiz: So we started testing and there was this paper on The Lancet about pox viruses. When there was a breakout of pox in New England the natives were treating these people with carnivorous plant and there was a complete resolution and that was in the 1800's and they got lost. So then Dr. Langland started doing a couple of experiments and sure enough it worked. So then we started looking at what other viruses mechanistically work like HPV or pox and it turns out that HPV, H is the-- and all these different viruses have very similar ways of infecting the cell. A lot of cancers or some cancers are caused by viral infections. They start as a viral infection that goes out of hand. In HPV there's this little thing where it has two proteins E6 and E7. E6 and E7 sequester P53 and P53 is what tells the cell to go into apoptosis. Without that P53 the cell keeps replicating. So it keeps replicating that's how you get cancer. What *[Indiscernible]* does? It basically does blocks E6, E7 and once it does that P53 is able to say oh shit we've been infected and then the cell destroys itself and the cancer is gone.

But it only works with those cells that have E6 and C7 so it's like the holy grail of chemotherapeutics because the normal cells are not going to be affected and the cancerous or transformed cells are. So I put together this presentation. We go to Boston and we do a presentation at the society of integrative oncology. People are coming around and they're like your work is great blah blah blah. And I got contacts from NIH and NCI. We come back to Tempe, and we make those calls and they were like whenever you get that isolated compound, give us a call. And I'm like okay come on. We are showing that the tincture works but they have no interest in natural medicine because natural medicine is just so confounded so we're trying to put evidence behind our medicine just to bring it to the forefront and trying to just break that glass ceiling, man.

Robb Wolf: That's awesome. Natural products are non-patentable but if you can stick a chorine or--

Guillermo Ruiz: Amino acid like--

Robb Wolf: A benzene ring on something then you're in.

[0:45:06]

Guillermo Ruiz: For example like Abreva if you put Abreva on an HSV sore, they did the experiment so many times to get to a significant figure. The difference between using Abreva and not using Abreva is 48 hours. It is significant because they did it so many times with a mixture of botanicals. We have case studies where you start feeling tingly of a cold sore. You apply this botanical and within 48 hours, it's scabbed and gone. And then we've had people that scabbed gone and never came back.

Robb Wolf: How interesting.

Guillermo Ruiz: The way we do this is whenever we create a treatment, what we do is we try to find different mechanisms of actions from different botanicals that attack the same things so against viruses we might target attachment. We might target the reproduction cycle. We might target E6, E7 and by combining all these things. If 90% of that viral particle was affected. It was killed with the first intervention but the 10% it was resistant, it's going to keep coming back. So by multiplying or adding different mechanism of action, we're minimizing the chances of that virus being resistant to it. So one of my projects right now is trying to identify mechanisms for different botanicals in order to just draw a line on the ground and say okay natural practitioners these botanicals work this way. These botanicals work that way.

Don’t combine them or do combine them. Like if you go to a store and you pick up a natural antimicrobial you're going to see three different types of berberines. If you followed what I was trying to say about the evolution of plants, it's highly likely that all berberines have the same mechanism of action. So adding a mechanism of action that is similar on top of another on top of another, you're just increasing the chances of making bacterial resistance. So that's a good takeaway for practitioners. If you want to treat a bacterial infection like SIBO, don’t combine something like comptus with another berberine because you're just using the same mechanism of action twice. Maybe some allicin, something different that is far away from the tree and they're not related and chances are that the mechanism of action is not going to be the same.

Now this is just speculation but we're really hard to try to get it done, try to identify the actual mechanisms of action.

Robb Wolf: Nice. That's fantastic. That's super exciting stuff. Do you see yourself, once you're done with school, do you see splitting time between research and clinical practice or are you going to do 100% clinical practice or what's your plan with that?

Guillermo Ruiz: I'm a lab junkie now so I hope to continue this because we need evidence behind the medicine and like you said I'm going to be a position where I'm going to have to pass the ball at some point. But I think I'm bright eyed and bushy tailed that I can do it for a couple of more years but I do want to treat patients. I don't want to spend time the rest of my life in vitro cultures. They're sick people out there and we need to get them better.

Robb Wolf: Awesome. Guillermo, where can folks track you down on the interwebs?

Guillermo Ruiz: So 3030strong that's 3-0-3-0 strong that's my website. I keep a little bit of a blog. I'm super busy with school. If you are going to the ancestral health symposium go ahead and heed me up and let's have a little nice conversation. I'm also going to be presenting at the American Association of Naturopathic Physicians Conference. I presented some of this research last year and I was invited again to present. That's going to be in Utah this years. I was also invited to present at the International Congress of Naturopathic Medicine in Barcelona, Spain. So I'm flying out there. And in the middle of everything I got to see patients at the pain clinic and hopefully not fail my exams.

Robb Wolf: Details, details, passing school that's just details.

Guillermo Ruiz: 3030strong is my Twitter handle, hit me up and then my website and hopefully I can start creating a little bit more content because it's kind of *[Indiscernible]* right now.

[0:50:09]

Robb Wolf: As I said before we started recording right now it's pretty much keep your head down and get your school done then you can start doing all the other stuff. Guillermo, I'm sure people really enjoyed the conversation we had. Really interesting stuff. Let's circle back and get you back on here once you wrap up your fourth year. It'll be interesting to see how all these stuff wraps up and see where some of your both in vitro stuff and your clinical practice has progressed.

Guillermo Ruiz: Hopefully I won't come back and be like it's all lies! It's all lies!

Robb Wolf: I was wrong about everything. Don’t answer the answer.

Guillermo Ruiz: anytime and hopefully this will give me a little bit more exposure and I can be doing some of this podcast rounds because like I said this is high risk hopefully highly reward but I got to start somewhere.

Robb Wolf: Absolutely. I think you started in a great spot and clearly you've got the passion and the aptitude to be doing phenomenal work in this so I'm super excited to see where this goes.

Guillermo Ruiz: Me, too.

Robb Wolf: Awesome.

Guillermo Ruiz: My girlfriend is too because at this point, I think she's like one step in the house and one step out.

Robb Wolf: That's probably not a bad place to be. It wasn’t until my second daughter that I was like I don’t think Nicki is going to leave me and if she does it'll be like a small caliber gun back of my head shallow grave and then she's moving on which is fine that would be an easier deal for me so that's good. That's good.

Awesome, Guillermo. It was great talking to you. Are you going to be at Paleo FX?

Guillermo Ruiz: Because I'm going-- I don’t know how many months I'm going to rack up this year, probably not going to be at Paleo FX. Hopefully, I'll be able to make it next year. I didn’t go last year either because I was in Oakland at the same time. But Keith Norris, I emailed the guy I just basically goggled his email, emailed him and he has been so supportive with the stuff that I'm doing.

Robb Wolf: Nice.

Guillermo Ruiz: So I wish I could go and maybe I'll just fly out there and just do it and fuck it, I'll do. But at this point, I don’t think I'm going to be there but I'll be at HS. I'll be around.

Robb Wolf: Awesome. I will run across one of the two venues and then I'll definitely talk to you soon.

Guillermo Ruiz: Awesome.

Robb Wolf: Alright, Guillermo, take care.

Guillermo Ruiz: Thank you.

Robb Wolf: Buh-bye.

[0:52:48] End of Audio