Paleo Solution - 386

[0:00:00]

Robb: Hey, folks, welcome back to another edition of the Paleo Solution Podcast. Robb Wolf here, super excited for today's show. Dr. Michael Ruscio is back. He is the most frequent guest we've ever had on the show. I don't know if anybody is ever going to catch him. Love this guy. He's been an incredible friend and just someone that I've learned enormous amount with regards to gut health.

He's been chipping away at a book on this topic for a long, long time, at least three years. The title of the book is Healthy Gut, Healthy You. That book is due out depending on when the show drops, very, very soon, or it may already be out. This is easily the most comprehensive book on gut health and perhaps, more importantly, the treatment of gut related issues that has been done to date.

Dr. Ruscio has done an interesting job on this and that he starts from a very big picture perspective, ancestral health, epidemiology, and then he starts working his way inward and looks at a host of different issues ranging from SIBO, small intestinal bacterial overgrowth, to C. difficile infections, and he gets more and more granular as he goes and relies more and more on the state of understanding with regards to randomized controlled trials in humans.

It's a fascinating way that he unpacks this whole process. The book is phenomenal. He covers just about every angle on this. What is really powerful about the book is that in addition to better understanding what we do and don't know about the gut -- Because there's a lot of claims out there. There's some people that made claims about their understanding of the gut that they're either much, much smarter than literally anybody else in the world or they may be selling you a little bit of a line.

And it's not to say some of these folks can't be helpful at times but we know far less about the gut than what we do know as with nearly everything in health. The story kind of boils down to context and it depends on specific situations. Like, for example, we talked a little bit, although he didn't give it away in the podcast, what is the role of, say, coffee and caffeine in gut health?

Apparently, there is a contextual element to that. It might be good for some folks, maybe not that great for other folks. I've tended to be in the camp of coffee up to your LD50, the point where it's going to kill you, and just stay below that. But there may be some arguments for staying below that. Anyway, this was

a great podcast, really enjoyed my time with Dr. Ruscio. I encourage you to give it a listen and definitely check out his book, Healthy Gut, Healthy You and we'll have links to that both in the show notes and at the end of the episode.

Dr. Ruscio, you handsome devil, how are you doing?

Michael: Hey, thanks for having me back. I'm doing good.

Robb: Great. Well, this is the new theoretically improved Robb Wolf Radio, still only six listeners so you can't go wrong with that but you, I believe, were the most frequent appearee on the Paleo Solution Podcast. It's a huge honor to have had you on there, huge honor to be your friend and to constantly learn from you. You were kind of my person for all things gut related which covers a pretty broad territory. I hear tell that you've maybe put down a little missive about the gut. Can you tell folks a little bit about that?

Michael: Just a tiny little morsel.

Robb: What was it, like 380 pages? What does it say?

Michael: No, 330 pages.

Robb: 330, yeah.

Michael: And about three years of work and not only my work but also a small research team that helped me fact check and help call through the research so that we could do something like a comprehensive review of the literature on stomach acid and trying to determine is the philosophy or the feeling that almost everyone and their mother needs to be on stomach acid, just as an example, is something that's validated or is this something that's more dogma that maybe needs to be updated?

We can come back to that in a minute if you want but, yeah, we spent a lot of work and it's really been a labor of love. I can't say I enjoyed writing it at all times because it was very challenging but I wanted to give people a guide to help them navigate all the different opinions that they hear regarding their gut health.

Because you're going to go and you're going to hear, of course, low carb is the best, you're going to hear that you shouldn't be low carb because it's bad for your gut. For some reason, you're going to hear everyone should avoid gluten vehemently. You're going to hear that gluten-free is a fad. You're going to hear that probiotics are good. You're going to hear that probiotics can make SIBO even worse. You're going to hear all this stuff.

I wanted to give people a guide that said all these things are true for some people for some of the time. Some of these things actually aren't true at all. They're just dogma.

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So, let's first set the record straight and then tie it all together with a self-help plan that's personalizable and will help you navigate through the interventions that are going to work best for you. Some people will do better with lower carb, some people would do better with higher carbs, some people will need to feed their gut bacteria, some people will need to starve their gut bacteria.

The self-help plan at the end of the book helps take someone through a process of navigating that. It's essentially what I do in the clinic with patients turned into a book that, hopefully, is preceded by an interesting storyline that gives you some background and some context. Yeah, you can tell I'm a little bit excited about it and I'm glad that it's finally here.

Robb: That's awesome. I'm thinking 50 different things here. One of them is I get a lot of questions from people career related and should I write a book, should I not write a book. It becomes a calculus problem pretty quickly. What's your goal? Clearly, everybody would like to write a book that sells like Harry Potter and then you can buy an island in the Bahamas and rule your feed from there and eat coconuts and spear fish all day, or at least that's my picture of heaven on earth.

There's lots of reasons to do these things. I wrote my first book somewhat as almost like a self-defense move. I was doing an eight-hour seminar all over the place which is where we met the first time and you and your buddy were some of the sharpest people that I ever met there. I was like, "Oh, I need to be really on my game with these dudes." You've got some really incredible questions and observations.

I saw some super consistent questions and it almost became this deal where I could predict at a certain point in my talk what the next question was going to be and stuff like that. Nikki helped me outline all that stuff. That's really where the book kind of came from. Initially, it was going to be kind of like a field guide that people could read before attending the seminar and then as I started looking at the volume of material there, I'm like, "Damn, there's actually a book here."

I mean, is there a little bit of that? I mean, what was kind of the impetus here? Because, I mean, you have a thriving clinical practice and as good as that is, it's somewhat limited. I mean, there's only one of you. We can't clone you. We can't clone the practice. I mean, what was some of the motivation for doing that?

Michael: I think exactly what you said is a very good encapsulation of what, I think, the background would be for a very utilitarian book. There are some books, and I'm sure people can relate to this, that you've read that were interesting but at the end of that you say, "Well, what do I really do with this? This just seems like a lot of cool facts spun together and a couple of vague recommendations but it's not very helpful."

For me, what's been a huge gift toward the utility of the book has been my time in clinical practice because you become very quickly accustomed to what are the most common concerns and questions and sticking points for people. And so there's a lot in here that helps to undo unnecessary fear especially -- And we've talked about things that are just in the past but people are, if they ever get diagnosed with small intestinal bacterial overgrowth, SIBO, they are scared to death or they're scared to death of gluten if they have hypothyroidism.

A lot of this is really not supported when you have rational look at the scientific evidence. A lot of the book, in addition to giving you this self-help guide, is written like I'm talking to a patient. A lot of the conversations in the book are very similar to the conversations I have with patients that are trying to undo some of these unnecessary fear and dogma and trying to get them to a better place where they're not paralyzed by confusion or by fear and also knowing what some of the common sticking points are.

An example of that, sometimes people will go on antimicrobial therapy. That's very helpful. And then shortly after ending the therapy, maybe weeks or months after ending the therapy, their symptoms just slowly return. Unfortunately, what happens is, in some cases, people go on the internet, they start reading about this, they read this very dismal information on SIBO or irritable bowel syndrome being a chronic relapsing condition that's very hard to clear, they get very fearful and they don't realize that I've seen dozens and dozens and dozens and dozens of times what will work for those people is just a simple touch up to get them back to a balanced state and then they'll be better in the long term.

A lot of this is, yeah, just written out of experience. I think I forgot to mention the title of the book, just in case people are in and out.

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The title of the book is Healthy Gut Healthy You. It's exclusively available on Amazon, available as a print book and also as ebook. There may be an audiobook in like six months but there's no plan for that right now. But, yeah, to your question, Robb, yeah, I mean, a lot of this is exactly the same stuff I work through with my patients that's probably concerning or what have you for them.

I think that's really going to help the book feel very real because a lot of it is derivative of real world experience.

Robb: Right. I just want to throw something out there. You alluded a little bit to this with jumping on the internet, reading stuff. On the one hand, that's amazing. On the other hand, that's like this rabbit hole to hell. There's this other spinoff element to this, both with my second book and also with the Keto Masterclass, some of the folks that pop up online and they put commentary about it, they're like, "None of this information is unique. You can find all this on the internet."

And it's kind of like, yeah, no shit, man. Everything is available. But information is commoditized. Information is cheap. You can find it. Anybody can find it. The difference with what you've done here is that you've actually taken a really thorough deep dive on the relevant research, try to parse that stuff out and weighed it, like randomized controlled trials being more valuable than epidemiological studies and things like that.

And then, actually, have drawn upon years of clinical experience to provide a sorting process so that people can say, "Okay, I think I fit in this bucket. I'm going to follow this protocol. If it's working, it does this. If it's not working, it probably does this, this or this and then we can shift into a different bucket and try a different protocol."

There's an enormous amount of value in that. And so I would just caution people about dismissing resources whether it's this book or other resources that are drawing upon some pretty good clinical experience. Yes, information is commoditized. I get it. But if you've got a problem you either need to find somebody who's really good at it and pay some one on one coaching or consulting or doctoring or what have you or if you do a little bit more of the self-care bootstrap kind of deal then a book like this can be really, really powerful.

It's making me a little bit crazy these days when people just dismiss something like, "Oh, all that information is available." It's like, yeah, totally is. You spend 20 years figuring it out the way that you have done with the gut and get back to me.

Michael: Yeah. I mean, it's well said. I actually speak that point in the book in a sense where there's information in this book that, of course, you'll be able to find in other places. I also think there's some information that you may not have heard in other places or you may have heard only rarely in other places. But there is some that's available. We're talking about the low FODMAP diet, low carb diet, were' talking about probiotics, microbial herbs.

Of course, there's plenty of information on these things out there. But one of the things I discuss is there's a difference between knowledge and wisdom and that

difference is experience. You can go out there and find all sorts of protocols, that's knowledge, but you have no clue how to us them, that's wisdom. And so this is what helps you take the wisdom, that is the experience that leads to the wisdom is what helps you to take all these different protocols, sequence them into a logical series of steps and then help guide someone through those so as to obtain a result efficiently.

There is a huge, huge difference. I would even go as far to say that when you give people knowledge without wisdom, they have a higher probability of self-destructing than they do of actually doing something helpful. Because I see patients come in, like I was discussing earlier, who are scared to death, who are making themselves worse because they're forcing a solution onto themselves that they've read about as being good somewhere but actually for them is exactly the opposite of what they should do.

They actually have enough knowledge to be doing something but that something is actually the wrong thing for them and so that knowledge is enough to actually give them the ability to make themselves worse. Yeah, I agree with your point 1000%. That's maybe a good transition into the first part of the book. I tried to write the book in a natural evolution to help you go from foundational understanding all the way through super crisp clear granular steps in the protocol and being able to go through that protocol highly confident.

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Because what I didn't want someone to do would be just giving them a protocol and not having an understanding of the rationale behind the protocol because then compliance is going to be not great because someone's going to be doubting.

The first part of the book -- there's five parts. The first part of the book we establish what I think is a really important premise and we talked about this, I think, on the very first time I came on your show. We discussed this and I remember you saying something about that show being very highly downloaded and I think it was because we introduced the concept that the gut or problems in the gut can cause a litany of symptoms outside of the gut.

That doesn't sound so controversial now but four years ago, telling people that your depression, your insomnia, your skin breakouts, your fatigue may be caused by a problem in the guts, your brain fog may be caused by a problem in the gut even though you don't have much or even anything in the way of gut symptoms, I think that was semi-cathartic piece of information way back then.

That's one of the first things that we try to establish in the book which is if you're suffering with these non-responsive hypothyroid-like symptoms or if you're suffering with brain fog or if you're suffering with fatigue and you've improved your diet, you've improved your lifestyle, you're not getting the traction that you're looking for then one of the -- Probably what the best next step would be to have a good investigation with your gut health because it's possible that your gut health could be driving those problems.

Also in part one we discussed this concept that not all guts are the same and the analogy that I use -- I think we discussed this one of the last times I was on the podcast is just like we have different ecosystems in the geographic environment, we have rainforest, we have semi-desert climates, just because a lot of rain is good for a rainforest doesn't mean a lot of rain is good for another environment like a semi-arid region in California.

In fact, a lot of rain, a rainforest level of rain in a non-rainforest environment can damage the environment, can cause mudslides and does cause mudslides in California and literally kills people. And so the same concept applies for the gut. I use carbs, fiber and prebiotics as kind of a parallel to rainfall. It's important for people to establish what type of gut do they have?

Do you have a gut that will do well on a high intake of carbs, fiber and prebiotics? Or do you have the type of gut that will be decimated by that? I think that will help people start to be more okay with the fact that, okay, I was watching this PBS special and Dr. So and So is saying how important gut bacteria are and he has this high fiber action plan what have you, which is fine and good for some people but then there are clearly other people that that will really damage.

And so I try to establish this premise of we have to understand that your gut is an ecosystem and we have to find the appropriate environment for your ecosystem so that your ecosystem can thrive. It's not about here's what I've been told is a healthy ecosystem because it's not to say that one ecosystem -- Who is to say that a rainforest is better than a semi-arid climate like in California?

One is not better than the other. They're different. And so we have to establish what to do for each one. Those are a few of the things that we discussed in part one and also we discussed, like you were saying a moment ago, just three simple things people can do to evaluate health claims and health research. I try to break them down and make them very simple and accessible but there are essentially three simple tips that people can use to evaluate if the health recommendations that they're being given are ones that they may not want to listen to or if they're ones that they should take seriously.

A lot of this is just helping people identify, okay, this is a mouse model study or this is a clinical trial with humans. If you can just have your feelers out for that, you can really do a lot to establish if the recommendations that you're being given are well-vetted or if they're more speculative. Because a lot of the high fiber, high prebiotic recommendations came from observational studies and those recommendations actually end up hurting a fair number of people.

It's not to say that a high carb, high fiber, high prebiotic diet isn't helpful for some but it definitely damages others. Again, we get really excited from some of this hunter-gatherer research mainly coming out of Africa and we started to make this recommendation that everyone should eat high fiber high carbs and high prebiotic.

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I'm sorry. I'm kind of monologue-ing here. For example, for these Africans, they ate a lower calorie diet that had a lot of dense fibrous material, dietary fibers, what have you, and we found that they had a very high colonization rate with Methanobrevibacter smithii and this is a bug that essentially slows down transit and helps to extract more calories from the diet which works for them.

Highly dense fibrous food, okay, we need more time to break that down and I want to squeeze all the calories out of that that we can. Great for the Africans. When we see high levels of that in westerners that's been correlated with constipation and with weight gain. And so it's not to say that we can just conflate one population with the other and excise one dietary piece from their whole environment and try to force that into a westerner and see a positive outcome. And so that's, in a long-winded fashion, some of what we discussed just in part one to kind of lay this foundation.

Robb: That's awesome. I'm working on a metabolic flexibility talk right now that I'll be doing for Paleo f(x) and Low Carb USA. It's going to be a little bit of a hip fake because in the beginning of the talk I'm going to lay out this thing that's really looking like we should be eating all carbs all the time and from anthropological recommendations, amylase gene frequency, like there's a really strong point of view made for that.

But at the end of the day, we're not all Kitavans. We haven't all lived as Kitavans or Hadza. We've had antibiotics. We've had multiple generations of epigenetic changes which are influencing the gut and everything else. And so at the end of the day, this is where -- You know, as powerful as that ancestral health model is, it's really, the primary utility is in hypothesis generation and finding a north star

to orient and then the rubber hits the road on clinical application. That's just where it all plays out.

Do we have disease process occurring, yes or no? If yes, then we need to figure out the strategy for getting rid of the disease process. That may mean a lower fiber, lower carb type of intake for a lot of people. That may be the default load for a lot of people in the west. It's a pruning type of dietary approach versus a really seed it and grow it. Clearly, again, to your point, that's not going to be true of everybody but that may be true of a lot of folks.

Michael: It's interesting to see how from Paleo f(x) 2017 compared to Paleo f(x) 2015, the opinion on that feed your gut bugs to not feed your gut bugs swung wildly. In 2015, I kind of felt like a jerk in the room because I was the only one saying, "Hey, we may not want to really just bull in there and blast people's gut bugs." People weren't very receptive to that message because there was so much excitement. The bandwagon was just trucking along at full speed and people were thinking here's a nice cure to all my ailments.

Yet I'm looking at the clinical research, looking at what happens when people with IBS and IBD go on a higher carb, higher FODMAP diet compared to when they go on a lower FODMAP diet and clearly the research literature shows that for a lot of people not feeding your gut bugs, pruning your gut bugs actually tend to be beneficial.

That finally started to catch up to the gut panel in 2017 which I was really happy to see. It just goes to show you that it's important to have clinical experience and be looking at clinical outcome data to help personalize this stuff because, to your point, a lot of that research was coming from kind of Kitavan like African hunter-gatherer bands that were way different than us. It makes a difference.

There have been a lot of times when something looks really good on paper, when we bring it into clinical setting and experiment with that in humans it ends up backfiring in a huge way.

Robb: Right. Yeah, it's funny because I've always just felt and performed a bit better at that lower carb level. There was all kinds of excitement about potato starch and cooked in cooled potatoes and cooked in cold rice and green bananas. I was like, well, I don't want to be the asshole who's just dragging his heels on this and so I got in and tried it. Dude, it broke me. It broke me in a bad way. It took quite a while to come back from that. Over the course of time -- and I've actually followed some of your gut restoration protocols.

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I will say this, my carb tolerance has improved. But interestingly, I do better with things like beans and lentils than I do rice or potatoes. I finally come to the conclusion that green leafy vegetables are there only to try to kill me. They don't do a goddamn thing for me other than seemingly irritate my gut lining and make my digestion not that good. I've almost dropped all green leafy vegetables and I go more for like zucchini and chayote squash and things like that and doing a little bit of berries and what have you.

My digestion is just way better. That's another one of these things where I've just tried to square peg round hole this stuff where it's like, well, greens are good for you and they would always really kick up my intestinal transit time. It was like in and out in no time flat and clearly wasn't well digested on that Bristol stool chart. It was more like bug against the windshield than some coprolite you would find a million years from now.

It's just been a funny process with that. Maybe somewhat off topic but what do you feel like -- You're so good at being grounded and reasonable and everything but what's the biggest flub you've done in this space? What was something that if you could go back and talk to yourself five years ago or what have you, what's something that you'd be like, "No, dude, don't go down this path. Danger, danger, don't do it." What's something you did miss but then you had to circle back and kind of do damage control either for self or others later?

Michael: You know what I think was probably the most ineffective thing that I've done is probably using testing and not contextualizing the testing to the patient to ensure that we have -- I went to look for two or three points. You have your test, you have your symptoms and you have the other context, the age, the history, the presentation, what have you.

And a lot of this occurred more so in the Lyme and Lyme co-infection information I was working with. I was more so just going based upon the test. This is one of the things that has led me to have the thoughts that I have now which is not having a monotherapeutic approach that's solely guided by testing because I had patients with testing telling me that they should have this treatment and we treated them and the response was really poor.

Later I came to find that some of the tests actually were suffering from an extremely high false positive rate and in the lab -- So, essentially, back story -- I hadn't organized my thoughts here, sorry. I was not seeing the positive lab results were correlating with the patient presentation and I was finding that patients were not responding well to the treatment.

So, I stopped using certain tests and then later, a couple of these markers, the labs I was using released statements saying that we're no longer offering this

marker because it's suffering from a very high false positive rate. And so I reflected on that and I said I knew it. I knew that I wasn't the idiot because nothing here made sense. Other than the piece of paper telling me that this person needed this treatment, nothing else was reinforcing that.

And so I learned that testing is not perfect. You have to really be very judicious with the testing that you use because it can really throw you off the mark. I think it's one of the most damaging things that happens in functional medicine, is over reliance on testing and not contextualizing things and not realizing that what you're doing is either ineffective or might be hurting people.

And to your earlier point with the fiber and the prebiotics, people will be doing these microbiota stage for diversity which by the way most of these are not, actually none of these, with a rare exception of a couple, are ones that had been what is used in the research literature.

Let me give a maybe bad example, but I'll try. You want to drive a car really fast on this tipsy-turny road on a cliff side and you watch a video of a guy doing it in a Lamborghini. And you go, okay, he can take that turn at 50 miles per hour and not go over the edge of the cliff. Then you go and you get in a Ford Taurus and you try to do the same thing. You're going to kill yourself because that car can't take the turn at 50 miles per hour. So, you have a lab that's in a research setting only and is using a method of testing that is not the same test you're getting from your clinician's functional medicine lab.

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But you try using that same test score to garner treatment and so you have a low diversity score, for example, on a microbiota assay that has been completely non-validated to correspond to benefiting from said treatment. It's a similar kind of example where some of the testing that's being used there with microbiota assay might show things like low diversity but the utility of that testing, the validity of that testing is just not there.

So, this is maybe one of the reasons why we see, again, people who are using prebiotics and fiber actually getting worse because the test is saying you have low diversity and then logic would suggest let's try to feed that diversity with fiber and prebiotics yet that person is getting worse symptomatically. I mean, testing for me, is the answer to your question but it was more so testing in kind of the Lyme and Lyme co-infection field where it was just thwarting me from listening to my patients and the experiences that they were having.

Robb: Right. That totally makes sense. I am curious on that point of stomach acid because I've cycled on and off of supplementing with Betaine Hydrochloride and

some different products to help support stomach acid production. What's the poop on that?

Michael: The stomach acid piece is actually really interesting. When we went into the research literature to verify some things, we found that some of the recommendations regarding stomach acid were completely wrong. I don't know how else to say it. Excuse me. There's this kind of dichotomy where conventional medicine almost indiscriminately wants to lower stomach acid, natural medicine almost immediately wants to increase stomach acid by using things like gentian or hydrochloric acid supplementally.

Usually on these things, the truth lies, of course, somewhere in between. It's just trying to figure out what's the nuance and how do we help people find perhaps what end of the spectrum better suits them. One of the things that we found was that some of the references that had been used in fairly popular books written on hydrochloric acid, when you actually fact check the references to see if what they're saying in the book is actually supported by the reference, you actually find that the exact opposite of what's been listed happens.

Essentially, the short story there, sometimes people who have indigestion, dyspepsia, reflux, heart burn, the theory is they don't have enough stomach acid. And if we give more stomach acid, that stomach acid will acidify the gastric cavity and that will help close that lower esophageal sphincter that helps keep everything down and prevent things like dyspepsia, heart burn, indigestion, reflux, what have you.

But when you check the references, the reference is saying that that is the case. They actually don't support that statement at all. In fact, some acid lowering medications have actually shown the ability to help tonify the lower esophageal sphincter. So, you start pulling on the string, you start seeing that, okay, some of this isn't what we've been led to believe.

When you start looking a little bit further, you see that about 2% of the population has been diagnosed with low stomach acid whereas 6.5% of the population has been diagnosed with ulcers which are oftentimes the result of having high stomach acid. That is a little bit of a tipsy-turny. We're kind of turning the argument upside down. However, if someone has an autoimmune condition the incidents of having low stomach acid increases to anywhere from 5% to 50%.

So, if someone has an autoimmune condition and especially if someone has an autoimmune condition and an anemia, it greatly enhances the chance that they may do well with stomach acid. That's something to kind of factor in as you're

trying to build the case for determining do you need to be on stomach acid or do you not need to be on stomach acid?

Now, another component of this that makes it tricky is some of the symptoms of low stomach acid are the same as high stomach acid. So, symptomatically, it can be hard to sort some of this out. Fortunately, it doesn't have to be that difficult. Essentially, what we recommend in the book is a short trial on supplemental stomach acid and if you have any kind of negative reaction you stop.

Essentially, with the reason that we do this is because people who have a negative reaction, they have an exacerbation of irritation reflux, what have you, they likely already have adequate stomach acid.

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For people that feel an improvement, we have them continue with it. For people that feel no change, we do not have them continue with it. We also look at the context of your age and if you have an autoimmune condition and/or anemia. If you're older you have an autoimmune condition, you have anemia, there's a higher probability that you should be continuing with the stomach acid support. If you're younger, you have no autoimmune condition, you have no anemia then it's much less likely.

I also talk about that -- In the research studies there's very little clinical data that support efficacy of supplemental hydrochloric acid. There is some decent efficacy for digestive enzymes and so we weighed that more heavily in our protocol but the utility of hydrochloric acid, it's not very high. It's not to say that some people won't benefit from it but I think this is one thing that's been really kind of indoctrinated into the community that everyone needs to be on stomach acid.

And so that's one of the sections, I think, will be more controversial. But, I mean, the evidence really speaks for itself. Another thing that I think will be interesting for people is we review the effect of coffee and caffeine on stomach health and stomach acidity because there's some information that suggests that caffeine and coffee may irritate the stomach and that could potentially lead to a loss of stomach acidity. But there's also some evidence showing that coffee and caffeine can actually stimulate acid production. And so I'll let people buy the book to get the full answer on that. ***[0:36:48] [Crosstalk]***.

Robb: You'll sell a million copies just on the coffee cliffhanger alone.

Michael: It was very interesting to look at that. I mean, we also looked at not only that but what are the health outcomes associated with coffee consumption? There are

some conditions that seem to benefit. There are many conditions that are neutral and there are some conditions that actually tend to worsen.

This is an important issue. This is actually one of the things I asked every patient in our initial exam, is I try to get a sense as to what someone's relationship with coffee should be because for some people it's not helping them yet it's such an easy crutch and there are some circles that would have you believe that coffee can cure cancer and fix your love life and fly you to the moon, whatever you want to attribute to it.

For some people, it's fine, not a problem. They can be helpful. But for other people, you can see significant improvements just by figuring out that they have to at least be judicious with coffee. It's not to say they can never have it but they no longer should be making it part of their morning routine.

Robb: Right.

Michael: One other thing that just got into my mind. I wanted to make sure just to get this out there because this is, I think, really important. Regarding non-celiac gluten sensitivity and just the whole issue of gluten, so if people haven't heard the term non-celiac gluten sensitivity, essentially you have celiac disease, diagnosable condition. At the other end of the spectrum, you have nothing, no problems at all. And in the middle, you have this condition of non-celiac gluten sensitive where someone feels like they don't do well with gluten but they haven't been diagnosed with celiac.

And so one of the things that is controversial is how to know if you have a problem with gluten or not. Now, there's a couple of things that are really important to do here and we laid out guidelines for this. But sometimes people -- Let me back up and give you the data where this comes from because I can already see someone listening to this or reading this and then going to gluten crusader X, Y or Z's website and getting a retort to that and being confused.

To my knowledge, the best data that we have came from a recent study that surveyed 34 Italian centers and amassed data from 12,225 patients. To my knowledge, this is the most thorough and up to date study on non-celiac gluten sensitivity. And they found a number of very interesting things. They found that 30% of people with non-celiac gluten sensitivity actually had a different underlying gut issue that was the cause of their symptoms.

So, that means, 30% of people may be able to have gluten if they fix something like small intestinal bacterial overgrowth or FODMAP intolerance or what have you. That's one really important thing. The other is that over 90% of people notice a discernible reaction to gluten within 24 hours. Now, that's also huge

because you sometimes are told you can't have any gluten because you might be fueling this underlying inflammatory/autoimmune process that's slowly building underneath the surface and you may not have any discernible symptoms for years to months or what have you.

[0:40:12]

However, this study did this over 60-point analysis from a trained clinician to pinpoint other co-morbidities and other symptoms and so they assess any potential symptomatic reaction. And again, over 90% of people had a discernible reaction within 24 hours. So, I think it's pretty safe to say if someone has a problem with gluten they will be able to tell within one day of ingestion.

To the autoimmune piece, they found 40% of these people had an autoimmune condition which is the highest level of reported connection to non-celiac gluten sensitivity and the highest autoimmune condition within that 40% was thyroid. So, it is something to keep your eyes and ears out for. However, again, over 90% of people had a discernible reaction within 24 hours.

And so if someone was also curious about the gluten-thyroid connection they could simply track their antibodies, their TPO antibodies and if you're consuming gluten occasionally and your antibodies are below 500 or in the low 100s then my opinion is you're fine to consume gluten occasionally. I wouldn't necessarily recommend making it a staple but if you're consuming gluten when it suits you, it's a social event or every once in a while and your antibodies are staying below 500, your TPO antibodies specifically, then you're okay to continue with consumption.

I just want to make sure you get that piece on the non-celiac gluten sensitivity because I know there are a lot of fears. There's a lot of fear surrounding it and certainly avoiding gluten can be helpful for people but we also want to make sure that we don't advice someone to avoid gluten religiously who doesn't need to.

Robb: Right. And just throwing something out there, after following one of your gut restoration protocols, I have not directly challenged myself with gluten but I'm used to just in the background going out to eat, I would get some sort of cross contamination. I'm always like, "Hey, can you cook that meat on a separate grill?" Whatever.

But it's just kind of one of these things between travel and everything else. I can usually expect like a couple of cross contaminations with some degree of frequency and, knock on wood, but it's been almost a year since we fiddled with

that stuff and I can't really remember having had what I would normally associate being a cross reactivity.

Now, I'm too scared to just slice it down and drink a beer or eat a piece of bread or what have you and I've lived this way for so long that I'm kind of like, "Dude, for me, I do--" Like it gives me the -- My palm starts sweating even thinking about it because, I mean, it so crushes me. But just even getting to a spot where I can travel and if my food preparation isn't absolutely pristine and I'm not getting sick, holy Christ, that's a big win for me.

And so I feel like, in addition to my carb tolerance improving, my gluten sensitivity has dramatically improved but I've been too chicken shit to get in and just directly pressure test that. Again, knock on wood, but I don't feel like I've had what I would normally associate being a gluten reaction for like a year now. That's pretty interesting.

Michael: That's a big win, in my opinion. It may be because, coming back to that 30% of people that we were talking about a moment ago, you may be falling in or at least partially falling into that 30% of people that their gluten intolerance was secondary to something else in the gut.

Robb: Right. Well, as a kid, I ate gluten and I think I may be was a little reactive to it but it was nothing like what it has been say like the past 15 years. And then I caught Giardia in Mexico and it was after that that all hell broke loose. If you look in the literature, Giardia tends to be a precipitator for a lot of knock on GI related problems including both celiac and non-celiac gluten sensitivity.

I'm sure you covered this in your book but there was a really interesting paper where kids with celiac went through the fecal microbial transplant and I want to say like 50% of the kids were then asymptomatic, asymptomatic and also clear of the villous atrophy on scoping after doing the fecal transplant.

[0:45:00]

So, even kids with the genetic predisposition and were showing overt disease process with the fecal transplant, about 50% of them were then asymptomatic and I would assume able to consume gluten which you talk about fecal transplants near the end of the book.

Michael: Right. We talked about FMT and, I think, FMT is a -- It's something I consider when everything else has failed. And we kind of tried to contextualize it where it's -- Outside of resisting Clostridium difficile infection which most people probably aren't too worried about, the second condition that seems to have the

most benefit is inflammatory bowel disease and so we lay out some of the stats for that.

And then third to that you have a few other conditions but there are some events rolling in for IBS, looking at the 30% to 50% improvement rate in IBS and then some other conditions that maybe consider it for but definitely something to leave as your last resort. But if you're looking at strong immunosuppressive drug use or an FMT, I tend to lean toward the FMT as something to consider, definitely.

Robb: Right.

Michael: You know, Robb, one of two other things that just shot to my head. I'm sorry. I feel like I'm an excited teenager with my mind going a thousand miles per hour.

Robb: Go wild. This is your show so go wild on this.

Michael: We laid out in the book also some recommendations for how to dose sun exposure to obtain adequate vitamin D. Essentially what I did was I took the endocrine society's recommendations for vitamin D supplementation to achieve adequate blood levels of vitamin D and I extrapolated from there how we, the amount of vitamin D that will be produced via a given dose of sun to arrive at those same levels.

And so laid out guidelines for someone that's vitamin D deficient. Here is the sun dosing protocol you need to get your sufficiency and once you are sufficient here is the level of or the maintenance dose of sun exposure to maintain that level of vitamin D sufficiency. And we also discussed how there had been numerous studies showing health benefits from sun exposure that are vitamin D independent. Meaning, you can only obtain said health benefit from sun exposure.

So, I think that's something that will be helpful for people also, just to kind of give them some semi-crisp guidelines in terms of you are deficient, you are sufficient, here's how much sun you should obtain.

Robb: Just, again, N equals one anecdotal what have you but even though I'm northern European I find that the more sun I get the better my digestion is, the happier I am, the better my sleep is, recovery is better, just the angels sing, butterflies land on my nose and just magic happens. Yeah, it's a super powerful process.

I'm not going to get super detailed on that but I'd been playing around with some different apps where I actually can check the intensity of the sun at a given location and then I could strip down to whatever degree the cold, current cold in

Reno affords me and sit out there. This winter has been terrible for skiing and snow and water but it's been amazing for my mental health because I actually have still a little bit of a tan at the end of January. It's pretty legit as far as that goes.

Michael: You mentioned kind of your sanity from sun exposure and that's maybe a good cheesy transition to bridging on adrenal fatigue briefly which is another thing that we talk about in the book. Really, to bottom line it for people, I would say do not test your adrenals but use some adrenal support. And we cover how there has only been one study of many, many, many studies using adrenal support formulas, only one study has used testing to guide the recommendations.

All of the other tests that have shown improvement in outcome from adrenal support have not tested at all. Not to mention we also discussed what I think has been the most expansive review on adrenal fatigue, a systematic review and essentially to put it briefly they found that well over 50% of the time the adrenal test results did not correlate with someone's fatigue scores.

They used all different types. We're talking about there must have been 30, 40 maybe up to 50 studies and they use four point cortisol, they use the cortisol awakening response, they use the direct cortisol awakening response, I believe is the other similar. They use the ACTH stimulation test. They used blood draws. They use 24-hour cortisol.

[0:50:02]

I mean, this was not a shabby study. They looked at everything you could think of. Essentially, you sum it all up and well over 50% of the time that the adrenal scores did not correlate with someone's fatigue. Now, does that mean that someone's not fatigued and that their fatigue is illegitimate? No, of course, if someone's not feeling well, they're not feeling well.

Does that mean that they shouldn't use adrenal support? No. We can use adrenal support and the adrenal support has shown to be helpful but we don't need to get bogged down in testing results to steer those recommendations. We discussed that and we also layout a few different classes of adrenal support and we make a product recommendation and a dose recommendation for the available different classes of adrenal support so people can try a support, evaluate if it's helping. If it is, continue. If it's not, you don't necessarily have to worry about it.

And we also discussed what I think is the most important aspect here which is the gut-adrenal connection. I can tell you that when you get someone's gut

healthier all of their "adrenal fatigue" symptoms tend to get better. Just think about it. If you ask anyone who suffers from digestive maladies, when they're bloated, they're tired. When they're bloated, they're cranky. When they have diarrhea, they don't feel well.

A lot of the symptoms that we sometimes attribute to adrenal fatigue are actually because of internal stress in the body and oftentimes that internal stress comes from a problem in the gut. So, the real solution to the issue is really again at the bottom of that internal stress.

Robb: Absolutely. Again, as my gut health has incrementally improved, like my tolerance to exercise, my tolerance to cold, all that stuff has improved. It's been really, really powerful, really interesting. To your point, it's just been this iterative process. I just have to kind of tinker and experiment and just see what happens. What is that thing called? An auto loop? Like observe, orient, direct, recommend, action, something like that. It's like a programmer's deal for making decision trees.

Doc, maybe at a future show, we could bring you back on and talk a little bit about -- It's interesting. I want to divert this away from the gut book specifically but what's interesting to me is we're seeing some fascinating developments with like machine learning algorithms where we do some testing on the one hand and we do comprehensive question basically background on folks, and then we get some correlations between those things.

But I'm finding more and more that just if we have a basic at least theoretical understanding of what the mechanisms are behind the process and then we enact some sort of a protocol and we either get favorable or unfavorable response and we kind of have a logic tree that we build out of that, it's just interesting to me because on the one hand mainstream medicine and even the functional medicine scene has been so top heavy on testing and I think the mainstream is super top heavy on testing because it's kind of a cover your ass deal. You need to show that you're doing the due diligence and everything and you don't want to default back to an opinion on something so you try to cover your ass as much as you can with standard of care and this testing.

Functional medicine has just maybe been a little crazy right from the get go on going a little too wild on the testing. But so much can be learned from a really good patient intake and just asking questions and then saying, "Okay, here's our logic tree and this is what we're going to try and then we'll start iterating from there." What are your thoughts around that?

Michael: I think it's huge. I mean, my initial exam now, I typically spend maybe 20 minutes with a patient because my paperwork gives me everything that I need and I walk

in there with 80% to 90% clarity on what the problem is, how we have to resolve it, and I just came to ask a few clarifying questions. So, yes, absolutely, I agree that the better you are with determining what data is actually impactful the more efficient you can be.

This is kind of akin to the testing because sometimes it's like a pissing contest in functional medicine. "My exam is two hours." "Oh, mine is three and a half." We get to a point where it's like I don't need to know all the details of if you were formula fed or caesarian birth because there's not really anything that you're going to do about that now. There are certain things that are really irrelevant and can distract you but if you're taking into account someone's context then you can really get there fast.

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Let me give you an example, and this is something that we do in the book again because this is a very important issue. The more symptomatic someone is, the higher the probability they are not going to do well on a higher carb and prebiotic diet, like a higher FODMAP diet, and the more likely they are going to negatively react to supplemental probiotic or supplemental fiber.

The less symptomatic someone is, the more likely that those things are going to benefit them. And so we build that into the protocol where essentially as people are starting to the steps, the people who are least symptomatic, they're going to get to a point where they experiment with more fiber, carbs and prebiotics more quickly and for the people that have more progressed gut symptoms that's going to be one of the last things that we do in a very cautious manner.

So, absolutely, if you can listen to people and build in your recommendations, you can help prevent them from doing stuff they shouldn't do and help them maybe run an experiment. In this case, like someone who's got a lot of IBS and a lot of inflammation and gut symptoms, again, to the point where they understand this may help me but it also may flare me so let me be on a lookout as we run this experiment, here are my early warning signs.

And because I know that going in, if this experiment is a failure, meaning this intervention isn't helpful for me, I would get out of that experiment quickly so as not to do any damage. So, you really optimize for as much benefit as you can and really mitigate risk.

Robb: That's awesome.

Michael: That's a key one. Because that's something that people will -- Like you did. You went out and you ran an experiment with a potato starch and you really beat the bad guy out of your gut.

Robb: Yeah. I rode it way longer than what I should have. If I had have some outside intervention, we're like, "Whoa there, Mister, props to you for trying something new but everything you're describing is getting worse and worse and worse." It started feeling like a vegan land again where it's like, "Oh, you're detoxing and you just need to verify your chakras and then you'll get through this thing."

Clearly, some people benefited from it. You poke around on the interwebs and there's some people who are, "Oh, this was just exactly the Bs and Es for me." And the people promulgating it are sincere and generally helpful and wanting to do good by folks but at the same time, unfortunately, that context really matters and just not -- Again, to your point about the circa 2015 Paleo f(x), when everybody was like fiber is the answer and it's like, well, for some people it is, when you're in that one standard deviation that it works for. But if you're three or four standard deviations outside that, it may be the nail on the coffin for you.

Michael: Well said.

Robb: Doc, I am super, super excited that this book, it is Healthy Gut, Healthy You. What's your tagline on that? Healthy Gut, Healthy You, Personalized Plan to Transform Your Health from the Inside Out. You have been chipping away at this thing for a long time and I've had the benefit of being able to check out some of the review work and I have been the beneficiary of checking out some of that review work because I've been able to play with some of these protocols. It's really improved my health. I can't thank you enough for that. When is this thing going to be available?

Michael: It's available February 15th. I think by the time this podcast airs, it will be on sale and Amazon is the exclusive distributor. You can just type in Healthy Gut, Healthy You or you can type in my name in Amazon, it will come up. It's available paper back and also as an ebook. Yeah, I'm happy to have this out there because I really do think it's going to help a lot of people both mentally and emotionally and also, of course, physiologically.

Robb: Awesome. And we will definitely have links to that in the show notes. Doc, remind people where they can track you down on the interwebs?

Michael: I'm over at drruscio.com. It's where I spend more time than I would like to admit. It's drruscio.com.

Robb: Awesome. Well, Doc, thank you again. You've been just an incredible friend and an amazing resource. It's kind of funny. You get pigeonholed in this world of health, you kind of have to find your way through the forest. Clearly, you've become a remarkable expert on the gut but you know heck of a lot more than that. You know your way around the weight room and interactive with 245 pound plates. You and I get to chat about a lot of fun stuff when we're tipping back a few NorCal margaritas. But you will be at Paleo f(x) this year?

Michael: I will, yeah. I'm looking forward to it. It's always the spring break of Paleo, as I'd like to call it.

Robb: Indeed. Awesome. Well, Doc, again, congratulations on completing the book. Looking forward to seeing this out there and seeing you at Paleo f(x).

Michael: Thanks, Robb. And thank you for everything. You've also been an awesome friend and someone who's really motivated and inspired me. So, I got to thank you also.

Robb: Thanks, Doc. Okay, we'll talk to you soon.

Michael: Take care.

[1:00:04] End of Audio