



How your digestion affects your fatigue

Guest: Dr. Michael Ruscio

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Alex Howard - [00:00:15]

Welcome, everyone, to this interview. Where I'm really happy to be talking with Dr. Michael Ruscio. Firstly, Dr. Ruscio, welcome and thank you for joining me.

Dr. Michael Ruscio

It's great to be back with you.

Alex Howard

We've done a couple of interviews before, and I've always really appreciated not just your depth of knowledge in the area of digestion, but also the depth of clinical experience that you have. I think one of the things that I can find myself quite frustrated with is when people have read a lot of research and they make these sort of big sweeping statements that really don't match up to the clinical reality people live with. So I think this is going to be, hopefully a really helpful interview, particularly for those folks that are struggling with the sort of day-to-day reality of how to make changes in their digestion.

Just to give people Dr. Ruscio's background, Dr. Michael Ruscio is a doctor, clinical researcher and best selling author whose practical ideas on healing chronic illness have made him an influential voice in functional and alternative medicine. His work has been published in peer-reviewed medical journals, and he speaks at integrative medical conferences across the globe, although of course, more recently online.

Dr. Michael Ruscio

Not so much anymore yeah.

Alex Howard

We all miss those days. Dr. Ruscio also runs an influential website and podcast at drruscio.com, in addition to his clinical practice located in Austin, Texas. I should also say Dr. Ruscio's book on digestion is my go to book on the subject. I think it's the most comprehensive and the most accessible, particularly for the lay reader, as I say, that really wants to understand the clinical, the day to day reality.

So, Dr. Ruscio, I'd love just to start a little bit with just setting a wider frame here on the subjects. What is the relationship between digestion and energy? How does having digestive issues affect one's energy production?

Dr. Michael Ruscio

It's a great question and something that I suffer with myself and maybe to set some of that frame of me being an active participant in trying to have the best energy I can on a daily basis. And as

someone who, at the height of my digestive disarray, was needing two naps a day, only at twenty three, twenty four years of age. So, you know, when you should be pretty primed, needing two naps a day to now being 37 and working out seven days per week, sometimes twice per day and not needing any naps. Now sure like anyone else I'll have a, I'll hit a speed bump or two where maybe I overdid it or was up late having some wine and, you know, it throws you off a little bit. I'm not impervious, but, you know, generally speaking, I'm way more energetic now than I was over 10 years ago. One of the main underpinnings of that was the health of my digestion. And there's a few mechanisms through which your gut health impacts your digestion and your mood because energy and mood tend to share this relationship. Or I'm sure people can relate to feeling kind of tired. And then it's well, the work that I normally do and brings me joy now feels like I'm carrying a bunch of stones up a hill and it's just dauntingly exhausting. So fatigue and mood perturbations seem to go hand in hand.

But the fundamental underpinning of how this may occur is likely predominantly through inflammation, especially the small intestine. The small intestine is the most immunally active area of our entire body. The largest density of immune cells actually is contained in the small intestine because it's this pivotal interface between external environment, the food that you eat and internal environment, your bloodstream. And so the immune system has to be very well calibrated in this area. And if there are disruptions in the flora or the bacteria and fungus in the gut or there's inflammation caused by the wrong food choices or the wrong lifestyle choices, now the immune system starts to have to kick out inflammation. And it just turns out that inflammation also affects centers in the brain and can cause things like fatigue and depression.

And by the way, to your earlier point, these aren't just academic observations. We have the clinical evidence showing that things like, as one example, probiotics can improve the clinical trial level evidence, or very high level clinical science, fatigue, anxiety and depression. So not only do we have the observation on the one hand, kind of the more academic association, but we have the, on the other side of it, if we intervene with a certain therapeutic, can we fix the problem?

And yes, there does seem to be that association. But the inflammation in the intestinal tract has an impact on your energy levels and your cognitive function. Kind of similar to when you have a cold or a flu you feel that fatigue, part of this is really inflammatory and immune mediated. There's also the absorption of nutrients where if your gut health is poor, you don't absorb nutrients as well. So those may be two of the more prominent mechanisms through which the gut ties to the brain and/or fatigue.

Alex Howard - [00:05:34]

And you sort of touched on a little bit there. But maybe we can say a bit more about some of the key influences that can cause digestive issues. I remember when, just speaking also on what you were just saying, when I had chronic fatigue and I went to my doctor, I'd also had IBS for a number of years and in many, many doctor's visits, no one seemed to ask me what I was eating and if they actually looked at the diet, sort of sugar craving 16 year old, it was...

Maybe just say a bit about some of the key, and also this is a big subject, some of the key areas that influence poor digestion.

Dr. Michael Ruscio

Sure. Well, one is, of course, diet. And, you know, again, trying to cross-reference all my remarks to, do we have any clinical data showing that when we change this, it helps people? Because this is something that the healthier consumers should be very, very honed into because your earlier point, again, which is an excellent one, there's a lot of kind of highfalutin conjecture where people, they make this really compelling argument with all these mechanisms and people read it and they say, oh, that's me. But the absent factor with a lot of these specious arguments is while they seem compelling, on the one hand, there's actually a real paucity of data showing that you can fix that problem or there's any treatment for that problem. So it's a lot of conjecture with very little bit of follow through evidence showing that it actually helps. So that's why I always try to kind of

cross-reference in this case the low fodmap diet. So one type of diet has been shown in chronic fatigue individuals to improve energy and in a fibromyalgia cohort, excuse me. So, in a fibromyalgia cohort, the muscle pain that is endemic in that population and fatigue were both improved by a low fodmap diet.

So diet, and the low fodmap diet being one example of something that can either help you or cut against you. The other would be your lifestyle. It goes kind of without saying. But we do know that gut health and sleep are caught in this kind of either death spiral or self-feeding cycle of healing, where IBS subjects are documented to have poor sleep. But thankfully, various gut supportive interventions, another one being probiotics, just such a wealth of data from probiotics it's an easy therapeutic line for me to continually cite. But there is evidence published that has found that probiotics help improve sleep in those either under stress or who have IBS. So sleep and gut health definitely kind of tie because the important point there, coming back to your other mention of practicality, is if we tell someone, well make sure you sleep eight hours and they say, I can't. I keep waking up.

Alex Howard - [00:08:26]

I'd love to sleep eight hours.

Dr. Michael Ruscio

Yeah, exactly. So, you know, we also need to understand we have this framework of healthy behaviors on the one hand. Yes. But on the other, sometimes there are things that are thwarting people from being able to execute the healthy behaviors. So that's where, kind of the practicality of how we apply these things is really important. But sleep would be another, in addition to diet. Stress and exercise are also two key fundamental underpinnings.

And then there are an assortment of early life factors that people have likely heard of. Early antibiotic use, lack of exposure to the natural environment where we kind of get the seeding of bacteria, overly hygienic practices. But many of those you can't really go back in time and change. And so you're left with, well, here I am today with a deck of cards that I have or the hand of cards that have. How can we work to improve the situation as it is at current?

Alex Howard

You mentioned a little bit earlier the, one of the sort of key mechanisms of digestive issues is inflammation. Can you perhaps just say a bit more about what inflammation actually is? Like what's the kind of, what's the process of what's happening within the body? And then perhaps we can talk a little bit about how that then impacts on these other, in a sense, what we're doing is we're impacting other bodily systems and that, we're not just talking about the digestion in isolation, it's the relationship it has with all of these other things like mitochondria and hormones and so on.

Dr. Michael Ruscio

Yeah, great. Great point. I mean, inflammation is, in maybe the crude but simple analogy I like to use. If you think of an immune cell like a little police officer inside your body, the gun that they're equipped with to fight the bad guys would essentially shoot inflammation. It's the enforcement instrument of the immune system. And so if things are getting through the intestinal wall that shouldn't, inflammation comes to the rescue if there's a bacteria or a viral pathogen inflammation comes to the rescue.

And the right amount of inflammation is beneficial, but when inflammation runs amok, when the amount of inflammation being kicked out by the gut is far in excess of what it normally should be, then you have, to your earlier point, kind of this cross system impact, where now the, not only the gut barriers are inflamed, those inflammatory cytokines tend to go systemic and cause problems with the blood brain barrier. And this may be part of the reason why there is this neurological impact. It impacts mitochondria. The inflammation in the gut changes the milieu in the gut, making it more hospitable for unsavory players. And so there's this kind of gradual conversion of the ecosystem to a

less healthy, more pro inflammatory mildew. And we need to kind of tip things back, almost like if you didn't take care of the soil in a garden, it would allow unhealthy growths to occur. But if you tended to the soil, it'd be more conducive to having healthy plants and vegetation grow.

So that's kind of a couple of ways in which the inflammation in the gut isn't only isolated to the gut. And there are studies that have shown things like people who have a true intolerance to gluten and eat it, just as one example, may only experience problems either in the brain or perhaps in the skin. And they don't experience it only in the gut. So inflammation can be very interesting in the fact that you would think that something insulting the gut would cause only gut symptoms. But there has been documentation, inflammation in the gut may manifest via the skin, via the joints, via the brain.

Alex Howard - [00:12:08]

And I think for people that have ever experienced it, brain fog can be an utterly debilitating symptom and sometimes worse than bloating or wind or whatever else that it may be. And I think sometimes people can miss the roots of their issues is a gut issue, because, as you were saying, the sort of manifestation of the symptoms is actually not necessarily in the gut.

Can you say a bit about the relationship between digestion and hormones, hormones as sort of separate area that we're exploring as part of the conference? But I think that relationship is quite an important one. And I think, again, sometimes a missed one that people can go down the path of sort of endless, sort of work on their hormones without realizing that actually a part of the origin of that is in the digestive system.

Dr. Michael Ruscio

Right. Well, there's a fair amount there to potentially unpack. We might be able to break this down into sex hormones versus thyroid hormones. And there's some important delineations there. There is an impact on, via the gut on male hormones. I haven't found that to be incredibly influential. It may also be that in my patient population, males are less prone to complain about male hormone mediated symptoms, that is possible. Female hormone mediated symptoms seem to be much more readily identifiable and easier to connect between those symptoms improving, tracking with improvements in gut health.

And we do know that the gut detoxifies hormones and this may be more of an issue with women and estrogen, given the amount of estrogen burden that we're under. Not to say it's not an important aspect for men also, but again, just kind of borrowing from day to day in the clinic, what do we see more of, it seems, anyway, that women are more impacted by kind of the gut hormone connection. So much so that I even wrote about this in *Healthy Gut, Healthy You*, which is a book about gut health. But there is a breakout chapter on the hormone, specifically the female hormone, gut connection.

The other thing that, it's a bit more theoretical, but there may be some plausibility to this. The stress of chronic inflammation in the gut may divert the production of hormones away from steroid or sex hormones towards stress hormones. It's a theory. I don't know if that's been robustly demonstrated, but it kind of makes sense. So we have a couple of things that could be happening if the bacteria in the gut that are supposed to detoxify estrogens are skewed, you may have more reabsorption of estrogens. And then the stress and inflammation that underlie some of those imbalances in the gut may also cause perturbations in how the body allocates the raw resources to either make stress hormones or sex/steroid hormones.

The other side of this coin, so the other side of this coin is thyroid. And this is where, I mean, where to begin. It's probably one case per day in the office where we are misdiagnosing someone who's been in correctly labeled as hypothyroid. And at this point, at this point, it's just absolutely abhorrent and appalling. Now, I should say that the clinicians who are doing this are likely doing this under the best intentions. I have no question about that. I think what's happened is the argument that the thyroid is the reason for your fatigue, brain fog, conservation and dry skin, as just one example, is so attractive that clinicians have bought into it, patients have bought into it, on the internet doctors read about it,

patients read about it. So doctors go into the office on Monday morning thinking about it. Patients come in on Monday morning asking about it.

Alex Howard - [00:16:09]

And I think patients like it as a theory because it's sort of neat and simple, right. And then you take some thyroid hormone and the theory is then you fix the problem. And it's a sort of classic old, not that it's a germ, but sort of germ theory methodology of find problem, take medication, fix problem.

Dr. Michael Ruscio

Right. Exactly. It's very appealing. And then this is further compounded by the fact that there seems to be a real loss in health care and medicine of let's change one thing at a time so we can really assess cause and effect. But instead your hypothyroid fictitiously, unfortunately, in maybe 60 percent of cases, we can come back to the evidence for that in a moment.

But suffice it to say, there's some good evidence in peer reviewed journals suggesting that 60 percent of patients have been misdiagnosed as hypothyroid. And if there's a hashimoto's diagnosis attached to that, someone may get the, "we got to really clean up your diet, get rid of gluten, maybe dairy, put you on some vitamins, some selenium, maybe some thyroid hormone". And now there's this multimodal intervention. And this is going to do two things. It's going to increase the probability that the individual is going to feel better. Just the dietary changes alone could lead to resolutions of fatigue. And it's also enhanced the immutability of the individual to placebo. Meaning I feel better.

This is why looking at some of the clinical research studies that try to isolate these variables is so important. And what you see is that there is no good evidence that people who don't fit the conventional medical diagnostic criteria for hypothyroid actually benefit from thyroid hormone medication. But again, it's hard for many to see because not only do you get your armour prescription, you go on selenium, fish oil, a multivitamin and you change your diet at the same time.

We end up seeing a lot of these cases where the placebo is now kind of worn off and it's a year and a half later and they're still having all these symptoms. And we've published these case studies on our website of patients who've seen some, again, probably well-intentioned providers. But when we look back at the labs that diagnosed them they do not satisfy the criteria for being hypothyroid. And so, there's a lot of empowerment in that because that tells you that there's something else that's driving the car. So I think initially the patients glom onto the prospect of a diagnosis. But you ask them a year and a half later when they're still feeling the same way and they've been on six different thyroid medications in that interim and they're not feeling any better...

Alex Howard

Potentially getting the side effects that go with those medications as well, right?

Dr. Michael Ruscio

Yeah, or even feeling worse. To your point, you can exacerbate fatigue in some cases, you can cause insomnia in some cases when you give thyroid hormone that's not needed. So then they're much more endorsing of our point to the fact the original diagnosis was an incorrect diagnosis. It's based upon this kind of new age functional medicine law that purports you should be within these narrow confines, which, generally speaking, there's no good evidence to support. Again, I don't think it's being done with a malicious intent. I think there was some early theory that was attractive. There was a lot of buy in.

Alex Howard

And theory that probably at its time was ahead of its time, right? That it was a step outside of a mainstream perspective. That there's nothing that can be done. You're making it up. You're not really tired. That it was, you know, it's almost, how I think about these things is the breakthrough at one

stage becomes the limitation at the next stage. So what was a breakthrough one day now is a sort of stuck and unhelpful way of thinking because there's new breakthroughs that have happened since then.

Dr. Michael Ruscio - [00:19:53]

Right. Very, very well said. And also, along with that breakthrough, there may have been one or two correct points, but five or six incorrect points. And so this is a, I think, a necessary growing pain that the field is going through where it has to acknowledge that some of these arguments are quite specious and a couple of them are factual. And this is something that we're working at the clinic to publish in some of the peer reviewed journals. Our findings, because we're trying to bring those findings really to the, Ok, well prove it and go beyond just a blog post or something on your website, which is all fine and good.

And the criticism I often levy against people making certain arguments, and get through peer review to have your findings published. And that's part of what we're working to do, because at this point, like I said, it's so common that we'll see someone who's been diagnosed one point five years ago incorrectly. We've captured from the documentation where the provider wrote on the lab slip call for armour thyroid next to the incorrect diagnosis. So it's like...

Alex Howard

And as a doctor that cares about patients it's hard to see that right? Because what you're saying is a year and a half of unnecessary suffering.

Dr. Michael Ruscio

Yes. And thank you for saying that, because I should clarify that, you know, I don't have any enjoyment in kind of knocking some of these things that are done incorrectly. But when someone cries during their initial exam because they're so frustrated, because the past year and a half, they feel like they've been in a fog. And you see that time and time and time and time again, you start to get kind of irritated at the fact that, like, OK, let's clean up our act here, because I understand you're trying to help people. But as a clinician, at some point it's incumbent upon you to realise what therapeutics don't work. So anyway, the thyroid piece, you know, there is something there to help people. But unfortunately, there's a lot of fictitious diagnoses going on with thyroid.

All that to say, for many people, the symptoms of thyroid can be the same as symptoms of a gut problem. Fatigue, constipation and depression can also be caused by problems in the gut. And I should also just to kind of set the stage a little bit here, clarify that hypothyroidism affects four point six percent of the U.S. population anyway. And it affects about, or I should say IBS, irritable bowel syndrome affects 10 to 15 percent of the U.S. population. And if you consider functional gastrointestinal disorders as a broad category, that's about 40 percent of the U.S. population.

So if you're looking at this from a probabilistic perspective, just three to ten times more likely to have a problem in the gut than you are with your thyroid. That doesn't map on to how often clinicians are diagnosing a thyroid problem as compared to a gut problem.

Alex Howard

It's very well put. When one of these sort of cases comes into your office and it sounds like, you say it's happening a lot. Sort of moving into the part of the intro I want to explore, what are some of the things that people can do? What are the starting points? That sounds like that that's a good sort of generic case study for us to kind of roll with a little bit. So in an instance like that, where do you start?

Dr. Michael Ruscio

Yeah. So one of the things that we do at the clinic is we have a pretty thorough and organized kind of new patient onboarding system where we have this dashboard of data and the new patients fill out

paperwork. They do a pre exam visit with their health coach and all this information is hubbed into this dashboard. We have a really clear ability to see these trends, what therapeutics they've done, and it lays it out in such a way where it's really easy to see patterns. And that makes a lot of this easy to see.

And it sounds easy for me to say, well, we'll start kind of from the foundations and work our way up in this pyramid model. But it's much harder for a clinician to have as part of their intake and inquiry into different types of diets they've tried, where they see well, I tried low carb and I tried ketogenic and my sleep and my fatigue got worse. But I also remarked that when I just eat whatever I want, I feel better. And eating whatever I want usually means someone's eating more carbohydrate. And so now the hypothesis we're going to put into our differential diagnosis list is potentially this person's too low carb, because they read somewhere that, you know... And rightfully so. I mean, there is again, the thing about these spurious arguments is there can be a kernel of truth that's really been misrepresented in the whole argument. So it is true that there's probably overconsumption of carbs and grains.

Alex Howard - [00:24:31]

Sorry to interrupt you, but I think you're speaking something really important here, because one of my great frustrations in recent years, running a clinic specializing in fatigue and having had my own fatigue issues in the past, but also having ongoing sort of digestive sort of sensitivities that I've sort of learned to manage, is that I know that my body screams if I try and go on a sort of keto diet, for example. And I say that as someone that has good health and wellness and I see chronic fatigue patients do it and make themselves seriously unwell, and then they become frustrated because they're reading all of these books by people that they are inspired by. They're reading all these amazing stories of people's energy going through the roof and people losing weight, people feeling great. And I think it can be very disheartening because people think, am I the only one that this is not working for? And I really appreciate the fact that you're speaking to, that many people don't do well on actually any extreme of diet, but particularly those extremes of diet where that they're completely starving their body of a food group.

Dr. Michael Ruscio

It's a great point, and that's why coming back to kind of our dashboard of data that is looked at in juxtaposition to, here are the available therapeutic options in the dietary template. So anything from carnivore to vegetarian is a potential. But we're looking for cues from their family history, their onset, their treatment history, the presentation of their symptoms to indicate what of those has the most viability. And so coming back to that same example, if they've exhibited negative reactions to, let's say, keto and low carb at two different time points, then that's giving us support for the hypothesis that they're too low carb. And so that's one item that we're going to now put in the differential list.

They may also need to be low fodmap as another example, because it may be that it's not the carbs, it's the fact that when they went low carb, they went high vegetable and all that roughage is flaring their gut and that's causing the resultant fatigue. So it's not necessarily metabolic. It's more so inflammatory. So these things aren't necessarily hard to pick out, but there's a few antecedents that have to be there in order for the clinician to think through this correctly. And that is just organization and presentation of the data and the way that you can see it.

And then also a non-dogmatic and a non-heretical approach, meaning, you know, I'm not going to vilify carbs. I'm also not going to vilify proteins. It's, you know, within reason there is some flexibility in terms of what the optimum diet may be. So we're more so looking at how do we direct the individual to the right diet, you know, for their system?

Alex Howard

And I think the point you're also making here that's really important is that different diets work for different people. And again, I think one of the challenges here is when authors write books, for example, around particular health programs, and I had this with my publisher, they're keen for you to say, what's the diet everyone should eat? And so people tend to have a diet that's worked really well

for them. They've done work with a bunch of clients and lo and behold, the ones that have done well have given all the feedback. Those that haven't done well have gone off and tried something else. And so they become evangelical about a particular approach.

Dr. Michael Ruscio - [00:27:48]

Yeah, it's well said that confirmation bias is something to really be on the lookout for. And it's difficult to get past that. And I do think that clinicians are in a really challenging and disadvantaged space where there's so much availability for information. If you wanted to spend all day reading and listening to information that confirmed what your preconceived notion was, you could do that. It's much more challenging to kind of think critically.

And then if we compound that with the fact that labs are really marketing hard to clinicians and what it's doing, in my opinion, is creating this kind of tunnel vision amongst clinicians where now they're just treating all the lab markers rather than having that dashboard of data and using that to really guide the process and the labs are just some supporting evidence that fit into the diagnosis. The diagnostic algorithm that you're navigating them through. It makes it really easy for a clinician just to have a preconceived dietary dogma and then treat labs and it looks scientific. But oftentimes the labs aren't quite as accurate as we think. And this is a big underpinning for, I think, why some people flounder.

Alex Howard

I really appreciate your comments around labs. And I remember when you mentioned this last time I spoke to you and we had a kind of connection on this other point then as well. But, you know, we do. And I want to be careful how I frame this, but we do spot checking of labs sometimes. So we'll send two identical samples to the same lab or we'll send two samples, taken on the same day to two different labs and sometimes, and labs can be, in our experience, very, very helpful sometimes. And you can discover things sometimes you never would have discovered otherwise. You can confirm treatment paths. It would be very helpful. But they're not perfect science and I think what you're speaking to, which is so important, is that it breeds a level of laziness sometimes in practitioners. And I think part of what you're drawing upon, which I think is really important, is this immense amount of clinical experience where you're trusting the patient's symptoms and your own experience, seeing multiple different cases, sometimes over what the labs are telling you. And that takes a level of, I think, courage and experience to do that.

Dr. Michael Ruscio

Thank you. But it's also what most of the clinical trials have done is used a patient cohort, usually dictated based upon their symptoms and treated them with a probiotic, an antibiotic, whatever it is, based upon their symptomatic presentation. So, what we do is, we insert in-between the patient's symptoms and the therapeutics that have been documented to help them in clinical trials, lab markers, and all of a sudden it's well, if your lab markers don't suggest you should do this, then you don't do this. But the clinical trials haven't put the lab as a dictating factor, so we're adding in this intermediary point that we think is making our clinical practice better. And in some cases, to your point, it is.

But I would argue more than fifty percent of the time it's not. And I think we discussed last time I was, we were chatting that uBiome, which was this really popular microbiome mapping company, which was later bankrupt and then investigated by the FBI. They were found to have used, in part, dog fecal samples to establish the normative ranges for humans. So there were all these people who were treating...

Alex Howard

I'm not supposed to laugh am I?

Dr. Michael Ruscio - [00:31:28]

It is laughable.

So there were these clinicians who were treating based upon what you uBiome was telling them. And it's like, you know, some of these, just because a lab says something is high or low or abnormal doesn't mean that's been well validated. And that's, I think, a hard pill for many to swallow. But it absolutely is true and the uBiome case poses such a great example of that.

Another one is neuroscience labs that pled guilty to falsifying lab ranges, making them more narrow so more patients would come back as positive, needing whatever supplement their sister supplement company was recommending. Not to say all labs are bad but you see now why I get so frustrated.

Alex Howard

But not all labs are good.

Dr. Michael Ruscio

Right. If the clinical science has shown if you have these symptoms, we know that this can support your system and remedy your symptoms. But now we're going to put this intermediary lab analysis in between that it makes the process less accurate rather than more accurate.

Alex Howard

Yeah, I'm mindful there's a lot of directions we could go in here. And I'm also mindful we've got limited time. I want to talk to you a bit about probiotics, because I think you've made a you know, I sometimes think about different experts in different areas and that kind of contribution. And I think you've, one of your, in my eyes, significantly important contributions to the sort of dialogue and understanding around probiotics is that you break it into three categories.

And I think, I don't know if that was originally your insight, but certainly I think you've been the person that's popularized that as a sort of way of thinking about probiotics. And I think it's important because I think what can happen is people can say, oh, no, I'm taking probiotics, that doesn't work. Or I'm taking probiotics and that's, I've got the benefit that I'm going to get from that and I'm not going to go any further. And maybe you could just say a bit about what these three categories are and why that sort of, those distinctions are so important.

Dr. Michael Ruscio

Well, thank you. So as I've been following the probiotic literature now for six years, perhaps, you know, fairly, fairly intently, you start to see these patterns and, you know, the patterns that emerge are there is your traditional probiotic type, which is mostly Lactobacillus and Bifidobacterium strains. But there's also this healthy fungus, Saccharomyces boulardii. And so there's a number of trials that have used Saccharomyces boulardii. And then there's this newer kid on the block, the soil based or spore forming probiotics which contain various bacillus strains.

And you see a pocket of research studies here, a large amount here and an even larger amount here, all helping different conditions. And as you see more and more studies pile in, you realize that it's not necessarily the supergranular. I need the specific species or even more meticulous, the specific strain. But rather, you see, boy, constipation has been aided by different probiotics within this category and a couple of probiotics within this category. Or depression has been helped by various probiotics within this category. And there doesn't seem to be any species or strain dependence.

And so when you zoom way out, you also start seeing that in the IBS literature, which is where probiotics have been used the most, so that's the kind of most advanced body of the probiotic literature, there's this trend where a multi species formula works better than a single or a double species formula. Which kind of makes sense if we provide the system a more broad probiotic

stimulus that may have more of an impact on helping to balance out and kind of heal the gut, almost looking at a fecal transplant as the most number of species you could possibly do, right?

Alex Howard - [00:35:12]

I've never thought about it that way, but of course, that's what it is yeah.

Dr. Michael Ruscio

Yeah. That's kind of the extreme end. So with those observations in mind, I started to use probiotics rather than just, well, what is the one that I should use? But how do we get the most comprehensive support for the gut? And early in clinical practice, I would use one and then say, well, that helped, let's add another. And we got even more help. And then eventually I said, well, if these trends are existing, why not use all three. And it turns out that there tends to be, at least as best as I'm able to establish, more benefit from using all three of these categories at the same time, almost akin to, you know, a stall you would sit on. A one legged stall is conducive to support, but it can be a little bit wobbly. But if we had three legs of support underneath that stall, akin to three different formulas of probiotics, that seems to be the most robust and comprehensive approach to use. We are taking steps to publish on this also.

We have a few kind of non peer reviewed case studies that we've released on our website. Phyllis was a good example, she kind of fits this avatar to some extent we've been developing thus far. She was low fodmap for one and a half years and had used various probiotics and hadn't really seen a lot of traction. And when we got her on all three probiotics at the same time. That was when she finally saw that real clinically impactful improvement from probiotics. It's not to say that this is a cure all, but it's probably the most robust way, this kind of probiotic triple therapy is the most robust way to apply probiotics. Which is important because we want to use probiotics as best we can before we escalate to other therapeutics like antibiotics or antimicrobials or elemental dieting or, you know, some of these other options are less well studied, more expensive, potentially more invasive. So we really want to try to execute the probiotics as robustly as we can.

Alex Howard

What I'm hearing you say is that where possible, it's better to balance the microbiome by speeding the good than it is to start coming in too much and you can, killing the bad. Although of course, they can be replacable ones.

Dr. Michael Ruscio

Well, one of the things about probiotics, I think is not fully appreciated, is that they actually are antimicrobial. Probiotics have been documented in over twenty clinical trials to be a standalone treatment for small intestinal bacterial overgrowth. There are some studies that have found that probiotics work as good for clearing a fungal infection as antifungal drugs. So probiotics actually do kind of, I guess you could say like fighting fire with fire, work to clean out some of these imbalances. But they likely do it while also helping motility, reducing inflammation and not doing it in such an invasive way.

Because we have to remember that at least probiotic foods have been used culturally for a very long time. So it's trying to stay kind of close to our ancestral roots and not get too, you know, new therapeutics engineered in the lab that may have unintended side effects. The closer we can stay to kind of the natural model, within reason, and we have the ability to potentially reduce side effects. And in this case, probiotics seem to have side benefits.

Like I mentioned before, not only do probiotics help with SIBO, but they've also been shown to help with depression and anxiety. So that's why they're a nice support to really make sure that we do the best job that we can in applying those before they then graduate into other therapies.

Alex Howard - [00:38:51]

So somebody who's watching this and they hopefully, I would imagine, having various light bulbs that are going off, perhaps they've had confusion in the past that lab test results have dictated a certain path. They've gone down that path and it hasn't had the resolution that they expected or they've been put on various thyroid hormones or they've had, they think, well, I've tried probiotics and it hasn't worked. Where does someone start? I think you laid out really helpfully in a clinical setting that a big part of what you're doing is building this dashboard and actually using that history is really important evidence as opposed to just, oh, that didn't work so ignore it. It's like that, actually...

Dr. Michael Ruscio

Yes, exactly. Very informative.

Alex Howard

Yeah. But for someone who's watching this that's trying to do the best they can perhaps for themselves and I'm going to say it so you don't have to. I'd recommend they get your book because I think it's very accessible. I think what I, it was funny, I will confess that when I was writing my book, it was one of my inspirations because I like the fact that you wrote a book that the general public could read, but practitioners also could access the research. I thought you found that balance very, very well. But someone that's watching this that has struggled with gut issues, can see the correlation with their fatigue issues. Where should they start? What's the sort of beginning point for them?

Dr. Michael Ruscio

Well, I like to think through these things kind of like a pyramid model where we have the foundation. And then these are the things that we know are going to be the most applicable for the most people. And then the more esoteric therapeutics get positioned at the top. And we work through this. So we don't look for one thing to fix everything, but rather it's this iterative process of building you up over time. And we had some of those dietary and lifestyle starting points, but they are worth mentioning.

Something that, I have some concerns that people's fatigue aren't fully aware of, and I'm sure you've probably discussed this on the podcast, are some umbrella underneath sleep disordered breathing. Whether it be mild apnea, rhythm problems. And this is something that we're doing more to better bring into the clinic and make sure that we're offering nonresponsive fatigue patients additional therapeutics, because I don't want to put all the eggs in the gut basket and there may be some of this low hanging fruit.

And as on the podcast, we've interviewed more experts in kind of integrative and progressive orthodontics and dentistry. We're realizing that people like me who had braces and headgear are at higher risk for sleep apnea because all of the oral archway has been compressed that compresses the tongue, and the tongue has nowhere to go at night not to fall back into the throat and impede respiration and lead to non refreshing sleep. These cases may not always be fully diagnosable as sleep apnea, but they may have suboptimal respiration and anything that impacts sleep quality is definitely a detriment.

So not to get too kind of far afield, but if we're picturing that pyramid, diet and lifestyle are the bottom and sleep is one important facet of that. So making sure you're sleeping enough. And there's a cool app called Sleep Talk where you can record yourself at night. And what's nice about this app, and sorry if we're going a little bit off field.

Alex Howard

I think it's a great point to make.

Dr. Michael Ruscio - [00:42:15]

So it'll only record when you're making noises. And so you may notice the only noises you hear are forty minutes of (snoring sound) and that tells you that something is impeding your respiration while you're sleeping and that almost for certain is decreasing your sleep quality and almost for certain is causing problems with fatigue.

So we have, you know, a lot of focus on the gut. But then those lifestyle facets are so important that we're constantly trying to make sure that we don't leave any stones unturned in that realm.

Alex Howard

So what I'm hearing you say is that you don't only address the gut by addressing the gut. That there's these other factors around, such as sleep, which can also have an important impact.

Dr. Michael Ruscio

Correct. So I guess there's a twofold point there. There can be a sleep issue all on its own, but there's definitely many sleep issues that are caused by problems in the gut. Now, so, another example of that coming up to your point is some congestion that seems to be histamine mediated is definitely caused by problems in the gut. So the person who can't breathe through their nose, well, because they're always kind of stuffy, that might be a histamine mediated condition coming from the gut. So we fix their gut. They breathe better. They sleep better. They have better energy.

Alex Howard

Fascinating. That's really interesting.

Dr Ruscio, I think we're pretty much out of time. But for people that want to find out more about you and your work, we mentioned the book. Maybe you could mention your website and some of what they can find there.

Dr. Michael Ruscio

Sure. Yeah. Thank you. The website is drruscio.com. And if people are in need of clinical care, I'm really proud of what we're doing at the clinic, especially now that we're really meticulously documenting what we're doing. And we're publishing more in peer reviewed journals. And we have a growing clinical and research team over at the clinic. And that clinic is an awesome center for functional medicine. And we do see people telehealth even outside of the country. So if people are in need of help, that is a resource in addition to the book and our podcast and our website.

Alex Howard

Fantastic. Dr. Ruscio thank you so much for your time today. I really appreciate it.

Dr. Michael Ruscio

Yeah, thank you. It's always a pleasure chatting.