Introduction and Guest Background

This is Doctor Talks, real talk from real doctors on the issues that matter to you most. Welcome back, we're continuing our conversation on reversing chronic debt conditions.

I'm your host Sinclair Canale and today I am joined by my wonderful friend and colleague, Spencer Feldman, who is quite the inventor. He's a multiple patent holding inventor and formulator and the owner and founder of Remedy Link.

He's been designing and manufacturing detoxification products for over 20 years. He's a deep thinker who is very much has his finger on the pulse about the chronic issues and illness of our time and why this is happening to us.

and what we can do about it, especially from home. Living off the grid in Oregon, he spends his time reading scientific journals, looking for the next clue on how to help improve people's health.

And I just really wanted you to have Spencer's perspective today on how you can take control over your health because he's such a deep thinker and he has a really interesting set of insights into what you have control over and how can we sort through the noise what's going on today.

So welcome Spencer. Thanks for having me Sinclair. Great, so let's just dive right in because we have so much we wanna cover together. I would love for you to summarize for the audience because we haven't done this elsewhere in the summit.

What really is the microbiome specifically in the gut? You know, it's interesting because when you go historically through the history of the understanding of the human body and anatomy and functional medicine, the small intestine was pretty much the last organ.

It was the, there be monsters here is the part of the map that no one filled in. It was the last organ to really start getting figured out and mapped.

And the small intestine, of course, is where we absorb the food and the nutrients. Of course, the microbiome is small intestine and mostly the large intestine, but the gut plays a major role, a much larger role than most people would think in terms of health.

The kind of, you know, you have to have it functioning in order to bring the nutrition in. It's making an enormous number of chemicals for you. So let's just jump into the microbiome because It's really difficult to have optimal health or even decent health if the microbiome is out.

And then we'll also talk about some simple at-home tests you can do to kind of just get a gauge of it. So what is the microbiome? Functionally, it's a mix of thousands of different species of bacteria, fungi, and viruses that live symbiotically or hopefully symbiotically with us.

Actually, yes, viruses are part of the microbiome. They're called bacteriophages, and they're what actually control the bacteria. They're the gardeners of our microbiome, you could say, or the bacteriophages.

The microbiome is responsible for regulating every system in our body, and it does this by creating and managing the levels of a staggering half a million different metabolites.

And I apologize for speaking quickly, but as we only have a half an hour and this is normally a one hour podcast, I'm going to move a little quickly.

What the Gut Microbiome Is

You might want to slow the speed down if you're listening to this. So the microbiome makes 500,000 now and counting different metabolites that make up 40% of the compounds in your blood.

So it's enormous. Compared to the immune system, the microbiome has more immune cells in your blood and your bone marrow. Compared to your endocrine system, it's got more endocrine cells and all your other endocrine glands combined.

In terms of information processing, the microbiome is three times heavier than your brain. And in terms of being a genetic database, it has over a thousand times more genetic information than our own DNA.

So, you know, some people Imagine if you ask someone to draw a tree. Well, they're going to draw a trunk and some branches and leaves. But what they aren't going to draw typically is the other half of the tree, all the roots of the bacteria living on the roots below the ground.

And so that's the analogy. We don't really see the roots of our own metabolic tree, which are our guts. You know, the microbiome, it's an enormous player and we really need to know how to cultivate it like a gardener.

And so we need to get the weeds out, we need to put the fertilization in, we need to go and know how to walk through our garden and say, that tree's not doing too well, but these, you know, hey, but this fruit's going really great.

And hey, are there bees here? We need to garden our own microbiome. A lot of people get worried about, oh, I did a genetic analysis and I don't methylate well or I don't do this or that.

But remember, the microbiome has a thousand times more genetic information than you have. So even if you can't do a particular task in your DNA, the microbiome probably can.

And there's very little that it hasn't already seen because it's been around for a long time. All right. Let's get into I really appreciate you zeroing in on that for folks, because there's a lot of people listening that have been told that their their opportunity for leading a full life is limited because of a DNA test.

So yeah, yeah. Well, until they test the DNA of the microbiome, they're getting less, you know, they're one tenth of 1% of a DNA test. It's important to do those tests, but it's not the end all be all.

All right, so let's move on. Where did we get the microbiome? So a billion years ago, the first worms appeared, and they're basically little moving guts.

And their guts, they swallowed bacteria and fungi and viruses. And some of those viruses and fungi and bacteria killed the worm. some parasitized the worm, but some of them actually, some of them didn't help or hurt the worm.

And once in a while they would help the worm. And when that happened, that worm had an advantage over the other worms and was able to replicate and survive more.

And thus the bacteria and virus and fungi within it. And then, so those would out-compete because a dead worm doesn't spread more of the microbiome in its own gut.

And so over time, these commensal microorganisms inside the worm gut learned how to do things. It learned how to improve the worm's digestion and protect them from other microorganisms and make them more fertile and make it smarter.

And this is a symbiotic relationship. And we have inherited through the animal kingdom the same evolutionary blessing of this symbiotic or micro super organism in our own guts that is doing all these things for us.

Now some people say that the gut is your second brain. It's not your second brain, Sinclair. It's your first brain. It was here long before the brain was.

So you imagine you got this worm and or the gut and the microbiome and is doing all of these functions. It's the immunity. It's the the processing of the brain brain processing.

It's metabolism. It's all these things. And then what it does is it sends off or stimulates the or evolves the what we would call specialized organs. So the the worm got a specialized organ for thinking and Now we have a brain and the worm got a specialized organ for moving blood nuts the heart, and it got a specialized organ for the immune system and that's, and it got a specialized organ for normal for regulating hormones and that's the endocrine system.

So, before all of these are organs was microbiome, and all these other organs and all of their hormones and neurotransmitters there were originally the microbiome.

So the microbiome not only was the mother for all of these things, it's also the mother tongue. So all the neurochemicals and biochemicals and transmitters and hormones originated from the microbiome.

It was the first to have serotonin and adrenaline and all these things. So not only did it teach us the language of the biochemistry of the body, but it also regulates it for us.

So the microbiome is an incredibly powerful ally and the most wonderful upgrade and friend we could have. And for all the benefits it does, and we'll get into them, it's only asking to eat the food that we can't digest.

So when we eat food, proteins break down to amino acids, our small intestine absorbs them. Starches break into sugars, amino acids absorb them. You know, fats break into fatty acids, the body absorbs them.

How the Microbiome Develops and Protects Us

And then what's left, the indigestible part is called the fiber. And that is what feeds the microbiome. And as long as you give it, let it have this part, it will be very happy to do all of these things for you behind the scenes without you being aware.

We'll talk about why, you know, how that goes wrong though. So I like to say that there are four initiations of the microbiome. The first what happens when you're inside the mother's womb and metabolites produced by the mother's microbiome pass through the placenta and guide and manage the growth and architecture of the fetal brain, making the baby smarter.

So it's really important for women who are childbearing to have a really good microbiome because that's going to organize the architecture of your child's brain.

The second initiation is what happens when immunoglobulin A, which is in breast milk, specifically colostrum, teaches the immune system what is self and not self and what not to fight.

And this is our protection against autoimmune. And this is happening also in the gut. The gut runs your immunity much more than you think. The third initiation is the brain itself.

So not only does the microbiome organize the architecture and complexity of the brain when you're a fetus, it continues that when we're infants. Now, most animals when they're born, like you watch a deer come out, it's walking within a minute of hitting the ground.

And it has to because otherwise predators will eat it. Humans are different. We were only half baked. When we come out, we're still not done. And we haven't finished myelinating.

So there is a coating around our nerves that protects it and insulate it and allow for proper transmissions called

myelin. And you get that when you breastfeed, you get nirvanic acid.

We actually have a supplement that has nirvanic acid for people that didn't breastfeed properly, but when you breastfeed, you get nirvanic acid and it finishes the myelination path in your brain.

And that is also something which is going on with the microbiome because what it's doing is it's helping complete the myelination of the nerves, which is responsible for complex cognitive behavior, personality expression, decision-making, social behavior, and the hippocampus, which is memory.

So you can see that The intelligence, both intellectual and social and emotional intelligence that we display, or hopefully displays humans to an enormous degree is organized in and out of the womb by the microbiome.

And then there's a fourth initiation which tells the immune system, what's what other is so the second you know one of the earlier initiations is. this is self, don't attack me, don't attack the microbiome.

The next one is, okay, now you know what self is, microbiome is self, joints are self, tissue is self. If it's not on our white list, if it doesn't have a pass to get into the concert, it gets kicked out, right?

And so the microbiome is not only responsible for keeping autoimmune diseases at bay by identifying what self is, but also by allowing the body to recognize infections.

And a lot of them are tricky to recognize. A lot of infections, they'll change their protein coat a thousand times. They can be masters of disguise. As soon as, like Lyme will do this, as soon as the immune system says, oh, I got you, you're an infection, boom, it changes its coat.

you know, it's like takes on a, puts a green coat on instead of a blue coat and a yellow hat instead of a white hat. Now the immune system's gotta start from scratch.

Or a lot of infections have learned to look so much like human tissue that the immune system is like, boy, that looks like human tissue. If I fight that, it might be autoimmune.

Maybe I should leave that alone, right? So the microbiome is responsible for decloaking cloaked infections that you can't see, recognizing infections when they change real quick, and also making that very fine-tuned distinction between self and other.

So we can say, no, you look like human tissue, but I know better. You're an infection, get out, right? All right. So there's four major dangers on microbiome faces in the modern world.

So like I said, breast milk both gives us and helps us nourish our microbiome. If someone is of my generation, you know, in their 40s or 50s, their parents were often told, oh, breast milk, that's so passe.

You're not a milk cow. You should do the latest, greatest scientific stuff. And that's formula, which we now know is a complete travesty, grows all the wrong things in the gut, does not develop the brain properly.

Not only does the- Yeah, baby. Yeah, I'm really glad you're highlighting that. Thank you. Yeah, not only does breast milk colostrum contain the IgA to help coordinate the infant's immune system and the microbiome, it has, listen to this, over 200 different prebiotics are in breast milk, and over 600 probiotics are in breast milk.

So it's got multiple sugars to feed the proper things to grow in the gut, and over 600 probiotics are in breast milk. You can't buy that in the store, and even for the few that you can get, which you should do under certain circumstances, It's not a replacement.

The second major danger is that modern diets don't contain the things, those fibers that the microbiome needs. Once you're weaned, you're no longer getting the prebiotics from the breast milk.

You need the prebiotics from diet. and prebiotics are basically they're special sugars. They're called oligosaccharides that we can't digest at the microbiome can.

So there's three kinds of sugars. There's like the simple sugars like honey and sucrose and fructose that absorbs right in, right? Then there's the complex sugars like starches and those they get broken down which is nice because it doesn't give you a glycemic crash if it's a low glycemic starch like barley, which is my favorite.

And then that feeds you also. But then there is the medium sized sugars. They're not the tiny sugars. They're not the long starches. They're a middle size.

They're called oligosaccharides. We can't digest them. They pass through undigested and they will feed the microbiome if you give them to them. but you have to be giving them to them.

And unless you're eating a primitive diet, you're probably not going to do that. And we'll get into what a primitive diet looks like and how you can recreate it if you want to or supplementally.

Now, the third danger is chronic exposures to toxins like glyphosates, which are basically antibiotics, artificial sugars, which the microbiome thinks is an oligosaccharide, it eats it and then dies.

Pharmaceuticals, chlorinated water, these all stress out the microbiome, which is usually just hanging on by its fingernails. And then finally you've got antibiotics like Cipro, which can wipe out 50% of the species of the microbiome in a matter of days.

You know, Cipro and the broad spectrum antibiotics, you know, these are like nuclear bombs going off in your gut. And even low, the low level of antibiotics in factory farmed meat has an effect.

OK, so what does the bio do when this happens? So there's two responses the microbiome has to stresses like these. One is dormancy and the other is called phenotype drift.

Dormancy is when in response to stress, bacterial cells or bears or whoever, they hibernate. They slow their metabolic activity down to a near standstill and they wait for the environment to improve because they're thinking, hey, you know what?

There wasn't a lot of food today. Maybe my host injured their foot and they're just recovering for a week in a cave somewhere. I'll just go to sleep for a little while.

I'm sure it'll be better when I wake up. And it's a great strategy because you get it. Not every hunter gather successful every day, bad weather, injuries.

But what happens is if it stays dormant long enough, then that dormancy can start to trigger the release of compounds like polyphosphates and bradykinin, which increase gut and blood brain barriers.

So they become more permeable and then mitochondria become permeable. So everything starts to leak through the mitochondrial transition pores. The gut leaks, the brain leaks, the mitochondria leak.

And we really, you know, we want to keep a tight ship in our body. Now, not every species are good at hibernating. And some of the species that hibernate will eventually say this isn't working.

So then there's a second, backup situation protocol, which is called adaptation or phenotype drift. And that means they change their shape and their behavior to survive their nevertheless friendly environment, right?

If you get some guy who is in the depression and there's no way to feed his family and his family is starving, will he steal a loaf of bread? Yeah, because it's a lesser evil than watching his kids die.

And there's, let's say his factory is bombed and there's really no work, you just can't do it right. So the argument I'm

making is that the good guys that are gut will become bad guys if you pressure them hard enough.

Okay, they will reverse that that long. You know, it took a billion plus years for them to learn to fine tune, to help us as much as they do. But they'll go back to being parasitic.

It's in their genetic knowledge on how to eat you or hurt you if you're no longer a good host. Okay. So, and the thing is, you know, another option of course is the bacteria simply die and then now there's open real estate and bacteria that can survive these new harsh conditions will colonize us in our place.

Like, take E. coli, for example, there's many forms of E. coli and the ones we get from our mother, and these are symbiotic with us and make excellent members of microbiome.

Modern Threats to Gut Health

but those we find in the external environment sometimes are parasitic and go disease like the ones if if the butcher cuts the gut of the cow and the cow is being fed food that's improper for the cow and it's E.

coli had had changed and then you get that and then that gets in you and so you know we're we're embedded into the food chain this way all right What happens with the bad microbiome?

You know, you'd think it's mostly digestive stuff. And yeah, sure. However, you also get loss of homeostasis. Remember, the microbiome is regulating every organ system in the body second by second, right?

It's got all of its feelers in your bloodstream through the gut lining, and it's constantly tasting and sensing your blood levels. Oh, your adrenaline is too high.

Hey, you know, butyric acid too low. Hey, I noticed that there's some effects. It's constantly the hormones gone. This is too low. This is neurotransmitters wobbly.

It's constantly checking second by second by second what's going on and helping you out. So you lose that. There's also toxicity because it starts to generate things that you don't want.

A good microbiome makes short-chain fatty acids that heal your body, that regulate your brain. But the wrong microbiome will create short-chain fatty acids that are toxic and poisonous like putacine and cadaverine.

And you could tell by the name, they're probably not good for you. It creates inflammation, immune dysfunction, small intestine, bacterial overgrowth, SIBO.

So let's see now. Talk about immune dysfunction, right? Remember, parasites are an ancient, the microbiome manages your immunity. And if we take parasites as an example, they're an ancient adversary.

We've had the mammalian immune system is about 200 million years old. but parasites have been affecting us for half a billion years old, half a billion years.

And in that immense timeframe, they've learned a lot of tricks and strategies, like I said, to suppress, attack, even distract our immune system. Parasites on the gut will make other bacteria in the gut shift to a negative state, so you have to deal with that.

And then the parasite says, okay, now that your attention is drawn over here, I'll cause havoc over there. So they, they, they actually, they do that distracting thing or sort of like, you know, if someone wanted to rob a bank, they might set off a small bomb on one side of town.

All the police go over there and then they robbed the bank on the other side of town. Okay. Consider T Bruce side, right? This is the parasite that causes sleeping sickness and it has over 2000 genes, 2000 genes, a code for proteins on its surface.

So that means it has 2000 changes of disguise. It can throw on, right? So. This is such an important point because people think that they can do these basic hunt and kill protocols after they've already been overfed and nourished, they've already thrown antibiotics at the situation, and then they discover functional medicine because the antibiotics wreck them.

And I really want you to dive into that in a moment. And then they think, okay, these basic antifungals, they're going to go after these parasites, which can morph and change.

And they're not considering any of the downstream effects. It's really interesting. Like you have to understand how complex the genetics are of these guys.

Yeah, absolutely. So just to finish off that thought, and we'll address what you're talking about. So yes, parasites are 500 million years old, but the microbiome is over a billion years old.

It's seen every trick in the book, right? It's been dealing with parasites when they first came on the scene. They can handle it mostly now. So what about antibiotics and antifungals?

Well, so the way most of these chronic infections work is they make a biofilm, which is this kind of mucusy sugar protein sticky matrix that they live in.

And if you study by the biofilms, they're like cities. They have skyscrapers and they have nutrient transport systems for drilling food and for drilling water.

They have a neural network for communicating with each other. They have their own police force. They have the ability, they have waste management systems.

The biofilm is amazing and the white blood cells will go to it, go about one or two cells deep and then get stuck and then they can't go further. And so what happens is when someone has a biofilm infection and virtually every infection that's chronic.

The acute ones aren't biofilms, but the chronic ones that we're talking about, those are all biofilms. We could talk about that in more depth one day.

When the bacteria and fungi and parasites are in there, the biofilm will imbue these infections with a thousand fold greater defense against drugs. So, whereas it might only take X amount of drug to kill a bacteria in a peachy dish, it'll take a thousand times more if that bug is in the gut, is in the microbiome.

And then remember, they also know how to go dormant. So for every 100 bacteria, one of them is sleeping. Same with fungi, same with parasites. There's always 1% or so that's asleep, that's dormant, which means it's not metabolically active, which means it won't eat the toxin that you're using to try to kill it.

Right. And so that a month or two later goes by one or two lunar cycles because they tend to be cycled to the moon and you're done with your antibiotics.

You've killed the bacteria, but not the dormant ones. They wake up. they multiply like 20 million in the course of a day from a couple, then there's some more of them that go dormant, and then you're right back where you started.

So going after, the microbiome is much better at dealing with this. And that's not to say there aren't times and places for antibiotics and antifungals and antiparasitics, but you just have to understand, it should be done as part of an entire functional medical protocol.

Okay, so we talked about what happens if your microbiome goes out. So one of the things that happens is, another way that that happens, aside from not getting the microbiome from your mother or she didn't have it or not breastfeeding or taking antibiotics, another way that happens is when fats and proteins and sugars get into the large intestine.

Now how would that happen, right? The things that you digest, The idea is that everything that you can digest gets digested in the small intestine.

How Microbiome Imbalance Drives Disease

Nothing spills over to the large intestine. If you're getting things spilling into the large intestine that you should have digested in the small intestine, one of several things is happening.

Either you're eating so much of that thing, the protein, the sugar, the fat, you can't digest at all some spills. or you simply don't have the capacity to digest that part of it.

You've lost the enzymatic capacity to break down the proteins, fatty sugars, and it's passing through. Now what happens, now remember, the only thing that should get into the large intestine are those fibers, the oligosaccharides, the little leftovers, the ash after your metabolic engine has burnt it in the small intestine and absorbed everything, and just the detriases left, that should be in the large intestine.

and should feed it. However, if protein gets in, then Clostridia, which is a common gut bacteria and can be good for you, can become bad because now it's saying, wow, look at all this protein here, and it's going to turn them into the toxic diamines, putrescine and cadaverine, which are found in putrefying corpses, and ammonia, and the toxic short chain fatty acids, valerate, isovalerate, and isobuterate.

If fat spills over into the large intestine, clostridia can turn it into ruterine, which is a broad-spectrum antibiotic like Cipro, or acrolin, which is a very highly reactive genotoxin, and trimethylamine, which causes arterial plaque.

Now if carbohydrates get into the large intestine, they create an overgrowth of Candida and a lot of gas. So the idea is, you know, eat as much food as you can absorb.

And if you're not absorbing enough, you're going to need some enzymatic help. All right. So what happens is when you have this spill over into the large intestine, you're teaching the, you're shifting the bacteria there to start eating sugars, proteins, and fats as opposed to oligosaccharides.

Now, the problem is we're made out of those things, right? So the joints are made out of sugars. The organs are made out of protein. The nerves and the brain are made out of fat.

And these bacteria will escape the large intestine and colonize the tissues once they learn how to eat them. So you do not wanna be training, you don't wanna phenotypically shift the good bacteria, specifically the clostridium and proteobacterias in your large intestine to the things that you are made out of and have them escape the gut because it gets leaky and have it colonize your tissue and start eating you.

And you'll find these bacteria in the joints of people with arthritis and things like this. So that's kind of like an overview of what's going on. So then the question is, Okay, you're listening to this, all well and good.

How is your microbiome? Now, you can go and spend $500 and get a good stool test. You should get one that will also tell you your pH. Not every stool test is gonna be as good as others.

I like the GutZoom 3.0 by Vibrant America personally. I'm sure there's other good ones, but here's how to tell at home. First off, does your stool smell bad?

Stool should have a slightly acidic smell. It shouldn't smell great, but you know, you shouldn't have to open the window and warn people that you've just gone to the bathroom.

If that's what's going on, you're making those toxic cadaverine and putrescent short chain fatty acids. Second, do you need a lot of toilet paper? Now, let me rephrase this.

Let me make this a little more clear. Farmer, his horse dies, 20 years old, it dies, and he goes into town and goes to

the local horse trader and says, I'd like to buy a horse.

And the guy goes, sure, take a look at this one. What's the first place the farmer looks on the horse? His mouth, his teeth. Why? Because that's where health starts.

Sure. But, you know, the horses are probably going to be eating grass. Their teeth are probably OK. They're not, you know, I wouldn't worry about that so much, but they're really looking for is how old the horse is because the gums are receding.

So that'll do the long in the tooth. That's why they say don't look a gift horse in the mouth. Like, don't ask how old it is. It's a gift. It's a gift.

OK, so they see how old it is. The second place is they'll go around and they'll lift up the tail and look at the horse's backside. and they're looking to see if the horse soils itself because a healthy animal does not soil itself.

No healthy animal soils itself. No healthy animal needs toilet paper. So the right amount of toilet paper to need is zero. If you need any toilet paper, your guts out.

In a healthy person, you wipe one time, there's no stain on the toilet paper, and that's it. The average person might have to wipe two, three, four times, and their gut's just wrecked.

So when your gut starts getting better, and it can be as little as a week, you'll stop needing toilet paper, or assuming that you're eating a decent diet, your needs for toilet paper just almost vanish.

Transit time, how long does it take for food to go from your mouth to your gut? It should be 18 hours. Way to test is go get some liquid chlorophyll, swallow a teaspoon of it and then see how many hours with a meal and then see how many hours it takes for your stool to get to turn green and if it's going and someone might say oh i go to the bathroom every day yeah but if what's coming out of you is what went into you seven days ago you can go to the bathroom every day but it's a seven day it's a seven day transit you wanted 18 hours 24 is fine too Another thing is the pH you can take those pH papers and properly get something that goes from like five or six to about eight, press it on the stool, and then it'll tell you the pH of the stool, and it should be around 6.6 for it starts going above seven and getting alkaline is probably ammonia.

from meat eating that you're not digesting. And if it gets too acidic, then that's also a problem. And if it goes above 7.0 or below 6.2, now it's a serious disease is something you can look at.

And also gas production could be a sign of a troubled microbiome, but that can also be you don't chew your food properly or you drink a lot of bubble water or that kind of thing.

Okay, so now I've talked about all these things about the microbiome. What do we do for it? And the first thing people think is, I'll go buy some probiotics at a store.

And cool. Okay. You can get bifidus and lactobacillus at a store. And the reason you can get those is because they're really easy to grow in a vat. However, lactobacillus and bifidus are what are found in the infant gut, but you don't find them in the adult gut.

In the adult, they're less than 1%. all the bacteria you really want, unfortunately, they're really not being sold yet. That's starting to change. We're starting to get facilities that are sampling the good gut bacteria and learning how to grow it in simulated giant intestines.

And so, you know, over the next five, 10 years, we're going to start seeing more and more really amazing probiotics come along the line. Like I go and I buy you can get acromans, but typically that's already in there.

You can get oxalobacter, which is the one that breaks down oxalic acid.

Testing Gut Health at Home

Normally the issue is when you look at someone's gut, yes, you'll see a lot of bacteria that's missing, but more what you'll see is bacteria that isn't missing, it's just barely hanging on.

So the numbers are low. So that says you don't need to put more in it. You just need to feed what's there, right? So, you know, there's two reserves here good bacteria, one is dormant cells, they're probably in there and just because you've gotten them from the environment.

You know, I mean, unless you live in a plastic bubble, if you eat at restaurants, and if you've ever had lovers, you're going to have be having microbiome from lots of different people in your body.

So it's in there, it might be dormant though. So you just have to add the oligosaccharides and feed them to wake them up. The second reserve is the appendix, right?

People have been told the appendix is a vestigial organ, just cut it out, it's a problem. It's not, it's your backup microbiome. In case you get some food poisoning or it completely wipes off your microbiome, then your appendix can then dump a new batch in there for you.

Okay, now the third is a fecal transplant, and we can go into that a little bit, if you like, towards the end. For most people, you're not going to need it.

Now consider that a single bacteria with a doubling time of 20 minutes can generate 34 billion copies of itself in 12 hours. So it doesn't take long, you just have to feed it and they're mostly there, they're just sleeping.

Okay. Takeaway is oligosaccharides will feed the gut. That's really all it's been waiting for. So can you do it with diet? Kind of, maybe. So you'd have to eat a lot of foods you don't like.

Tubers like Jerusalem artichoke, which give a lot of people gas. Insects, mushrooms, seaweed. There's a lot of things on the menu that you might not want to do.

And it also would take excellent digestion to get the oligosaccharides out of primitive foods. So, you know, initially I'm like, all right, I'm going to go and I'm going to eat like a primitive human.

And then I'm like, Oh, am I really going to be chewing on tubers for two hours a day? Do I really want to eat a bunch of bugs? So I didn't, you know, I thought, I thought it was unrealistic and it's certainly going to not be the thing that most people want to do.

So I decided to make a mix of these oligosaccharides that would simulate the diet of a successful hunter gatherer. And no, we don't use insects. We get the sugars that would be found in insects in a non-insect form for people who get squeamish about insects.

Right. Okay. So I identified eight key oligosaccharides that we need for a healthy microbiome. And I put them in a product called panacea, which, and it, if you want to, you can go and look at the formula on panacea and you can recreate it yourself.

So I put it in the ratio that I thought was would be found in a hunter-gatherer diet. If you go to the store and you buy the prebiotics, which is what oligosaccharide is, typically they'll give you a fructooligosaccharide, maybe galactooligosaccharide.

They'll give you the two cheap ones and a massive amount. And you don't want to do that because if you take a lot of one oligosaccharide or two, you throw the ratio of your gut out and you grow too much of one at the expense of another.

So, you know, you want You don't want a monoculture in your gut, right? You want the widest variety of healthy

genotypes you can find. So the penicillin product contains, and I'll let you know in case you want to recreate it for yourself, galactoaligosaccharides, yes, which are found in tubers, xyloaligosaccharides, pectin oligosaccharides, and fructoaligosaccharides that are found in fruits and vegetables, connective tissue oligosaccharides that are found in cartilage, insects, and certain mushrooms, phacoidin oligosaccharides found in seaweed, and isomalto oligosaccharides you find in things like honey, miso, and kimchi.

And so why so many of them? Alright, so one thing oligosaccharides do in addition to feeding the microbiome is they act as decoy molecules for pathogenic bacteria.

The pathogenic bacteria can see them, think it's the gut wall, grab on, and then they just go out in the stool and they're gone. So it's like it's a defense against the wrong kind of thing.

And again, secondly, as I said before, you want as diverse a microbiome as possible. If you watch the way certain oligosaccharides are dealt with in the gut, you'll see oligosaccharide A goes in and is acted upon by one bacteria, which generate these two things, which are then acted upon by two different bacteria, which then generate these four things, which are then acted upon by another bacteria, which then finally makes the thing that your body needs.

It's a whole symphony going on in there. So I'll give you an example of why they're not interchangeable. I had a friend in her 20s and her microbiome was totally shot.

And at first I didn't think it was a microbiome because her symptoms were like neurotransmitters and inflammation and heart stuff. But her heart was totally fine.

But from a cardiologist assessment, I couldn't figure out what it was. So, but we started working on a microbiome and a lot of that improves. Now, I made her this initial batch of these H, these eight oligosaccharides and she started improving.

And then I ran out of two of them. I said, okay, we'll just take, take these six and. she regressed within a within like a day or two, she was back where she started.

I got those two back in, she took them and a little while she's backing in. So you never know which oligosaccharide is going to be the one that's going to work combination is going to be the one that's going to be the key that you need.

And so my opinion is just take them all in the right ratio. So let's see.

Feeding the Microbiome with Oligosaccharides

What kind of benefits might you notice? So, you know, my microbiome wasn't too off. When I started taking it, I noticed a few things. My eyesight got better.

I got physically stronger. You know, when I would go to the man cave and work on the weights, I was able to, you know, bench press more. You know, my endurance improved, my skin strength got stronger and my sense of balance improves.

Interesting with the skin, right? So I live off grid and I had been walking barefoot somewhere and I got my foot caught on something and I was like, rip my head hurt.

So I hobbled back into my house and got out my first aid kit. And I'm like, all right, do I need to staple this closed? Do I need to crazy glue it? I don't need to, you know, irrigate it.

And I'm looking at it and it's a scratch. And I'm like, what? I'm like, how is that a scratch? I thought for sure I just ripped my skin right open. And no, my skin had got stronger.

And I was trying to figure out, it's unclear, what all of these things had in common. Better eyesight, better strength, better endurance, better balance, stronger skin.

And I realized, oh, these are all things that get worse with age. So the microbiome had actually made me younger. And indeed they find if you take the microbiome of a young animal, like a young mouse, and implant it in the microbiome of an old mouse, the old mouse gets younger.

And they also found if you take the microbiome of a courageous mouse and put it in a timid mouse, the timid mouse becomes courageous. So a lot of what we think not only in our health, but also in our personality is actually our microbiome.

So interesting. I mean, it's a great point that you're making. Well, you've made a lot of great points today. I really want to underscore a few of them.

First of all, the resilience of the gut itself and microbiome is a whole world unto itself that we have essentially starved and beaten up and polluted, but that doesn't mean it's not too late.

And that instead of throwing more gasoline on a fire with just a bunch of cheap probiotics, you know, more is not better. We're talking about intelligence support.

We're talking about feeding the species that might already be there. They're just dormant or they're just hanging on. So, and that your microbiome's DNA can absolutely step in to support you if, even if you have some less than desirable DNA report that's not a life sentence or certainly a death sentence that your body is far more resilient than you even realized, even in this bizarre day and age that we're living in.

So I really thank you spreading this message of hope and also taking the time to break this down in a very digestible way. And I want to give you a chance to expand on anything that you feel people need to know in order to take action now, or any last words of encouragement for those folks that have been on the healing journey for a long time and they've tried.

every well-known protocol out there to reclaim their gut health. There's a number of things that if you were to take 10 people that have been chronically sick for 20 years, doctor to doctor to doctor, you're going to find typically there's a few things that they have in common.

One of them is the microbiome is typically pretty shot. And, you know, and if you look at the genetic diversity of the microbiome, it's very narrow. They don't have a lot.

So when you start taking oligosaccharides in the right way, that carrot that you ate that had a little bit of dirt in that, that had some bacteria on it that might not.

that if you eat that carrot every day and there's no oligosaccharides, you could eat it, but it doesn't wake up and populate. So not only does the right oligosaccharides wake up the dormant bacteria or grow the bacteria that's barely hanging on your gut, it allows new ones to come in to actually go in and populate.

So what you'll find is when you take oligosaccharides for a while, your test will show that the species, not only do you have an increase in the numbers that individual species have more in particular, but more species in general, it widens the genetic palette in your gut.

Another thing that kind of plays in, and we could talk about this in another conversation, is how when the microbiome goes out, histamine starts getting produced.

And then you end up with people with mast cell disorders. And these people are allergic to everything. And just a quick, you know, kind of teaser on that one.

There's four histamine receptors in the body, H1, H2, H3, and H4. H1 and H2 are in the skin and the gut and the

sinuses, and they're the ones that give you the common allergic reactions.

You sneeze, your gut doesn't feel good, you get itchy. But there are histamine receptors in every tissue of the body, and when you realize a lot of people who are sick In addition to having a bad microbiome, it can be that they have a histamine overload and they're having an allergic reaction, but it's not like you'd think.

It's not like you eat something and then you suddenly start itching. It's something that can show up four hours later and it can show up in your brain, in your bladder, in your uterus, in your prostate, in your kidney, in your livers, in your blood vessels.

But the number of allergy, we have to open our eye, our mental perception about what an allergic reaction is and realize that in addition to guts that are out of whack, people are walking around with massive allergic responses that they have no idea are allergic responses.

They just think it's something else. And these are two kind of grossly underestimated causes of, or opportunities for better health is to, and, you know, when you get your gut moving properly, then you can, the histamine levels will start to come down because you can get the bacteria in your gut that actually break down histamine and then you become allergic proof.

And if you have the wrong bacteria, they're generating histamine, then a person just gets more and more allergic as they get older and older. And it's not like they're allergic necessarily in a way that they understand it.

It could be brain fog. It could be chest pain. It could be arthritis. It could be fatigue. It could be fibromyalgia. It could be interstitial societies.

These are all allergic phenomena and they can all happen partially because the gut is no longer removing histamine, but now generating it. And they're just allergic to the world.

Yeah, that's a great point. I really appreciate you highlighting that because that describes so many people listening today. So this is really interesting.

So really underscoring the need for your products. Of course. Thank you for inventing them. We love your brain. We rely on it heavily in our practice.

And one of the last things I would just like you to touch on, I know we're over time, but I just can't help myself. You touched on in passing a couple of times this concept of rancid fats or toxic fats, either self-generated or converted, or what we're taking in in our diet.

And I know you have great solutions for that. And I would like for you to just speak to that really briefly, if you could. Okay. All right.

Benefits of Restoring the Gut

So over a hundred years ago, somebody figured out they could take cheap cottonseed oil and mix it with hydrogen and nickel and which are both metals. Hydrogen is actually a metal in a gas form and it would turn it into a solid.

It turned it into Crisco. And for people who religiously couldn't have cook meat with dairy, that was a great solution. And it was cheaper than lard and it lasted a long time, but of course it was very toxic for you.

It's a toxic fat. Well, the same process happens inside the body, right? So what happens is when there are metals inside of the body, then the fats inside the body, chriscofy.

We take the healthy fats in the body and turn them into chrisco in our liver. You can see it on ultrasound or in our arteries, that's where arterial plaque is.

So one of the things we need to do if we're going to deal with the rancid fats is one, not eat them, right? I never cook with oils. I mean, the only heat my oils get that I eat are the ones that are happening in the cold press process, because I think the oils should not be heated.

So in addition to making sure that you have to eat a certain amount of oil, right? A low-fat diet is terrible for you, but so is a high-fat, because high fats, even though you might love the ketosis effect, is going to spill over into the large intestine and feed clostridia, and then we're going to get bacteria that feed on fat, like your nerves, and you don't want that.

So, but you want enough fat to act as a way to transport fat soluble nutrients. So I put like a tablespoon on each meal of fat. Right. And then of course, which ones don't do the, you know, olive and coconut and fish oils and things like that hemp is really nice.

Okay, but we also have to be mindful that we get the metals out of our body because if the metals are in our body, they're going to turn our internal fat into Crisco.

So, and then there's two different classes of metals, the ones that are small, like above mercury on the periodic chart and mercury and below. And if you use the wrong, and so you have to have the right kind of key later to pull out the right kind of metal.

And then the other thing is you want to solubilize these toxic fats, you want to get them out. And the two favorite protocols I have for this would be liposomal bile.

Because bile is what the body does naturally. And for those who know, that's part of the Plaquex IV protocol or lipid exchange. But if you can get bile into the bloodstream, it will salibulize these toxic fats.

And salibulize means you take something that's fat soluble, you turn it water soluble so you can pee it out. And a quick analogy would be of a dish full of grease.

You can dip in water all day long if the grease isn't coming off, put a few drops of soap on it. And now the soap interacts with the grease to make it water soluble and it rinses off.

We need that same soap, right? Detoxification is really in many ways the degree of finding the right soap for the right grease in the body. And then the other one would be cyclodextrins.

and cyclodextrin will salivulate toxic fats 150,000 fold over normal over baseline. So for the people who are interested in that, albedextrin is our cyclodextrin product, colophage is our liposomal bile, and part of the process of staying young is cleaning out the lysosomes.

Okay, it's gonna take a second. So you have all these little organelles inside the organs are called lysosomes and their job is to recycle fats and proteins that are broken down in tissue.

However, or take ones that have been misfold or damaged and break them down. However, when they can't when they come across a protein or fat that they don't know what to do, they just hold on to it.

Histamine, Allergies, and Chronic Symptoms

So as we get older and as we're exposed to more of these toxic fats and proteins, they accumulated the lysosomes. The lysosomes shift from a recycling center to a landfill.

And then when the lysosome is completely a landfill and not a recycling center at all, all these things now start to build up in the tissue. And that's when you start seeing disease and age kind of go exponential.

When you look at someone and you saw them at 40, then you see them at 50, and then you see them at 55, you're like, whoa, what happened? Those last few years, I haven't seen you.

They really took a number on you. That was, they crossed the Rubicon of their lysosomes. The ways to clean out the lysosomes, you can fast. I'm a big fan of fasting.

I do a 14-day fast once a year, right? But there are some things even fasting won't dredge out of the lysosomes that cycle addictions can. We could do a talk on how cyclodextrins go in and clean out the lysosomes that recover the recycling center aspect.

They turn them from landfills back to recycling centers, which means they can now break all the stuff, clear all the junk out of the tissue, and then you can age backwards a little bit.

Beautiful. I really appreciate you highlighting this piece for people because, again, this is totally possible to turn the ship around. We have unprecedented exposures today, but we also have access to tools that we didn't even have a few years ago.

Thanks in no small part to inventors and thinkers like you. So thank you so much for your contribution to the space and for your generosity today. I really appreciate you coming on.

Oh, thanks for having me Sinclair. Yeah. So where can people find you? So the website is remedy link, R-E-M-E-D-Y-L-I-N-K. There's I think four hours of video on our video page that go into a lot of these topics that I've only briefly mentioned more deeply.

And again, you know, don't feel like you have to buy a product from me. The ingredients are listed. You know, if you want to experiment, go ahead and mess around and buy some of the ingredients and see if it helps you.

If that's, if you're into that kind of thing, you know, at the end of the day, you know, we don't, we all just want you to get better.

Rancid Fats, Detox, and Closing Remarks

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