Afif Ghannoum - Microbiome, Mycology, and More! Transcript

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Introduction to the microbiome summit guest

Hello, this Doctor Ken whole tour with another episode of the Peptide Summit. Today we have a wonderful guest, Efron de Noom. He's gonna be talking about.

Is the microbiome the secret key to your health? Evan, thank you for being on and I just, love your story and how you're just so passionate and passionate about the gut.

But a little bit about that effort. It's co-founder of the first total microbiome company, Biome Health. That's bio H. M. health. We commercialize these consumer probiotics and microbiome, testing kits that target the dual role that fungi and bacteria play in the digestive tract.

So we're going to talk about that. The fungi is bad right. So we'll hear more about that. He's co-founder of Biome Health and one of the world's leading minds in medical mycology.

His father and, father and son. They launched Biome Health in 2016 to bring the, good, science to consumers by creating products based on new understandings of the microbiome.

So they were really ahead of the curve. And, let's get more about that. But is is dad, I think is a full time researcher. Yep. And then, Ephraim's a biotechnology attorney.

Okay. And and it's not like rocket scientist, has stuff turned his, biotechnology innovations in the consumer products have sold more, in more than 27,000 retail locations in the United States.

He's also licensed technology to a global pharmaceutical company that has sold more than a thousand. Thousand retail locations. Little bit about, biome health.

It's the first total microbiome company, again founded in 2016 by Afram and his father. And the mission is simple to engineer elegant products and tests that address the total microbiome of both bacteria and fungi.

And I want to ask you about viruses to, allowing consumers to maintain complete digestive health. And we're finding, you know, it's really exponential, I think, with the knowledge we're getting on the microbiome.

You know, it used to be, you know, at least gastroenterologists are now know what a probiotic is, right? But we're finding it's just so key. And the more we learn one, the more we know we don't know, but the more we know it influences so many things.

And how did you. It's just kind of. How did you get interested in all this? Yeah. So my father, who's doctor Matt Morgan, he's actually the scientist that named the microbiome, which is the fungal community in our body.

And actually, yesterday, Excuse me. He literally named the microbiome. He did a clinical trial, and he identified 101 native fungal organisms that live in our mouth.

How Biome Health was founded

And so there had never been a name for a native fungal community that lives, you know, in our oral cavity, our gut, even our lungs, all over our body.

So he called it the microbiome micro, being the Latin for fungi and biome, obviously to me. Wow. Yeah. So he's, you know, to this day, he's an NIH funded researcher.

He has, the distinction of being the point 1% most cited, scientists in the world over the last ten years, for his research. Yeah, he has over 26,000, citations of his work.

And it's all around the role of, bacteria and fungi in our body. So I got into this because he did a clinical trial in 2016 looking at the microbiome of Crohn's patients.

And what he was looking at was whether bacteria and fungi were working together in the gut. And that's just what he found was that bacteria, which we've all heard about.

And, you know, back to the Activia yogurt days. We've always heard about good bacteria. But my father, having studied fungi all over the body, thought, you know, I bet it's residing in the gut as well.

And it might be working with bacteria. That's what he found. He found that bacteria and fungi was creating what we call a biofilm, which a biofilm. A lot of people.

You may have heard of it. Obviously, you're a physician, but a lot of your, you know, average people, they haven't heard that term, but the term that is synonymous with that, they have often heard about is plaque.

So dental plaque, for example, is a type of biofilm. And so what the problem with biofilms is, is that underneath that matrix are nasty germs that are causing issues.

So in your mouth, the reason you want to get rid of that plaque is it's causing issues with your teeth or gum health. Same dynamics happening in the gut.

And so what my father discovered with Crohn's patients that these bacterium fungi biofilms causing serious, digestive issues for them. So when we he published his research, thousands of people across, the world reached out to him and said a couple things. One, I didn't even know there was fungi in my gut.

How do I deal with that? Is there a product you suggest? And to how do I get tested to see if it's an issue for me? Right. We looked at where like, it's kind of interesting.

No one was talking about good fungi. So, we created biome, our probiotic, to actually target that pathogenic bacteria and fungi that had been causing issues with that biofilm.

So, and at the same time, we literally took his Is testing protocols that we did for his NIH clinical trials to actually sequence the gut. And he, rolled that out as a test.

So to this day, every single, we've done thousands and thousands of tests all over the United States. Every single test is processed in his lab at Case Western School of Medicine.

Wow. Well, and like so many bacteria and harmful bacteria, they form biofilms that are so sophisticated, and they have multiple organisms in them and channels to bring in, nutrients and signaling pathways to, like, ward off.

And it's a big reason why these things are so resistant to antibiotics, right? It that's that's a huge problem, the resistance factor. So that's one of the things my father's really specialized in looking at is how do you break down those biofilms?

Because he's seen it a lot in, hospital borne infections like biofilms and catheters. So really, he's he spent, maybe 20 years looking at how do you break down the biofilms just in catheters?

Because that's to your point. Big problem with, antibiotic resistance, you know? Yeah. And that's why you have to take out the catheter is you can't give enough antibiotics, or to have a valve, you know, get sealed in the valve.

It's just they have to take it out. And that's like one thing. There's a, peptide L 37. Which antimicrobial? But at very low doses, even it gets into that biofilm.

And same with, tb4. Frag it. It's small enough to get in there, but, so what what is, the strategy to, to get in there and break up that biofilm?

Biofilms, fungi, and gut testing

Yeah. So literally what we do is, when you look at, under a microscope, the bacteria in the fungi fuze together. Right? And that becomes really difficult, because it's, it's something called, like, if you think of this being the bacteria in this being the fungi, what happens is the fungi release what are called, like hyphae, where they literally dock and connect with the bacteria, and then they become interlocked.

So we surmise if we can break that, that lock should be able to shred them pretty easily, because that high phase is the key to docking action. So are you able to do that? It's like the glue.

That's the best analogy for it's it's glue or it's like, you know, Velcro. The the Velcro stickiness. But once they don't become a new organism, potentially, do they.

No. I know Doctor Frye and his work has found all these like, half parasitic, half bacterial, you know, new species like, and, you know, so called chronic Lyme, which is often a lot of things, but I think so it starts in the gut, you know, or it kind of becomes a vicious cycle where like for instance, and I just mentioned, you know, you look at the studies of boomers all this where, hey, ten people have this type of bacteria, or these people have this or just give this, this probiotic, you become ten.

But it just kind of goes back. The obese people will just. Yeah. So this is conducive to the bad bacteria. Right. So so you really nailed it because what we're just starting to realize now is it's a two way pathway right.

Like an easy example is the gut brain axis. Right. Like there's a lot of science where we said, okay, you know, does your amount of stress actually change your microbiome.

But whether we start to realize, wait a second, it might be your microbiome adjusting your stress levels and your ability to react to stress. So that is fascinating.

And, you know, even a step further, what we're seeing in clinical trials that we're part of, because my father and I also run one of the largest clinical research organizations for, you know, the big pharma of the world doing microbiome based clinical trials.

We're starting to see that it can literally impact your ability for a drug to work for you based on the state of your microbiome, which is really amazing because if you think about it, you're getting clinical trials.

So what a lot of companies are saying is, you know, when we're doing these clinical trials to prove that drug works, we need to screen these people first to see what their microbiomes like.

Because if we have non-responders because of their, you know, dysbiosis or imbalance in the microbiome, it could actually give a false signal that a drug doesn't work.

Right. Yeah. It's not just absorption, right? No. It's actually how that drug literally acts on. Yeah. And a lot of people don't realize this, but there are people that we call non-responders to drugs.

Like it doesn't matter. You know, some people, like when you take, take a leave, right. We read about. Oh, I don't take to, capsules should do the job.

That's completely generic advice. You absorb and process a drug. Completely different to how I did. Right. So what's interesting is the microbiome and other facets of our body, but the microbiome.

And importantly, we're starting to see that the state of our microbiome can actually impact your body's ability to process medication. You know, anything like that's very fascinating.

And so we're seeing it's got it tied to pain. There are studies showing that like if you have imbalanced microbiome you can experience knee pain. More seriously.

It has a tied obviously we talked about stress even oral health. And you know for women it can be an issue with things like, you know, vaginal health.

Like, a lot of women will see when they take a antibiotic that they'll get a yeast infection. Will that the reason being you're getting rid of the complete bacterial community that controls and keeps the fungi in check, and vice versa.

Right. So it's really amazing how much the microbiome is tied to and know there's so many microbial. Right. You have skin you have between eye basically every tissue and every area.

And you literally have there's a vaginal microbiome oral microbiome along the microbiome eye microbiome gut microbiome. And each of these and the way you need to think about the microbiome is it's basically a community of organisms. Right.

And people think microbiome means bacteria, but bacteria is only one resident of that community you have. Yeah. That's where our first start. Yeah. No. Exactly.

So they're probably the most science. It is fair to say it's been around bacteria Israel. But that's actually self-fulfilling a little bit. Because if you look at the NIH research, the most funded research is around bacteria.

So we obviously know the most about that. But fungi is more attention. You mentioned viruses, the virus that is now starting to get some interest. But the problem is the state of our medicine.

The way I talk about microbiome, it's like what we knew about cancer research in the 60s, right? Like we knew this is something we need to understand it, but we are decades away.

So complex now, you add the viruses, even the fungi.

Microbiome effects on drugs, pain, and health

It's like exponentially, you know, so even even our sensitivity in detecting, viruses in the microbiome reliably is still not there, you know what I mean?

Whereas bacteria and fungi, it's much more established that that obviously would improve exponentially over time. But because of that, our understandings still can be a little limited.

You know, because it was amazing. I was reading a study on a bacteriophage, the bacteriophage is basically a virus against a bacteria, and it would be turned on when the butyrate producing, vector, which is good.

We like those bacteria, but when it got to a certain level it would turn on and kill that cell. So there's like not too much. So it's obviously evolved with us for millions of years, you know, and and I was like, wow.

And and so really so much is epigenetic right. To like the gut will change your genes. And let's say you have an Alzheimer's gene, Apple A4, ApoE4. And but you can turn it on or you can turn it off and, you know, basically I think our genetics are about 20% and our epigenetics like 80%.

So it's like the gut is, you know, I think I'm ever like, you know, I don't know, 20 years ago or more. It's like all the doctors, you know, look at the gut and now everything's kind of catching up.

Well, my dad always talks about he went to a Candida symposium and and actually, you know, when he was at UCLA and it was around, like the Candida, I'm going to mess it up, but basically, like the Candida crisis.

And the guy was presenting my dad, remember, he told me, like, a lot of his colleagues were like, this guy's out, out

there, you know what I mean? Like, just now you're seeing it.

It's obviously, you know, something that. But but that's the way medicine goes, right? Like, I can get it. If you're a trailblazer, you get the air. I was like, the H.

Pylori guy got run out of town and, you know. Yes. And turned out he was right. So you can't be too far ahead, you know. Oh, the the key is staying where the science is showing.

But there are some the good thing about microbiome, there are some very basic things that if you keep in mind you can make big differences. So one of the things a lot of people ask is, well, what impacts your microbiome.

Right. And there really are a number of factors that can't change everything, but you can change a lot. So number one we've been talking about a little bit is your genetics.

Right. So like you know the analogy I always use is everybody knows that. You know cousin it hasn't been to the dentist in ten years and never has a cavity.

Right. But then we also know that, you know, person that goes, you know, every six months on the dot and they constantly need dental work. Right. It's just their genetics. Right.

Like the way they're or kids like of I employs kids. They got cavities everywhere, you know. Right. Right. And they could just be genetically predisposed to that.

So same in the microbiome. You may just be genetically predisposed to having, you know, a weaker and balanced microbiome. But even if that is the case there's a number of factors you can control.

So for example, the massive one is diet right? Is one where you kind of is diet. Yeah, I hate that. I want to take a pill I know. Well you know we always we always joke like listen because we get people all the time.

They take our test and a, you know, what product should I take? And I listen, probiotics. We have first and last probiotics. But they are dietary supplements.

They should be a supplement to what you're doing with your diet. It's interesting. Yeah. Look at the. Yeah. Because all you're going to do is, you know, it doesn't help you.

In fact, it doesn't help us if you think you're going to take our product, you're like, oh, it didn't work. No no no no no. This is nothing's going to work if you're not taking a holistic view.

Like we have a lot of people that take our microbiome test, our biome gut report. And you know, these are these tests are not cheap, right. So you think if someone's taking a test, it's because they've done everything else they can and they're sort of like looking for a last answer.

And what we see is because they fill out a questionnaire, is 50 or 60% of people who take our test. They eat fast food at least once a week. Right. So, you know, there's some very basic things that people can do without ever getting to what I'd say, more like aggressive or exotic things to improve, like it's not some secret word from the Amazon.

It's not so amazing, you know, one size fits all. Product. It's are you mindful about the way you eat? And it's it's not rocket science. My, my dad wrote a bestselling book called Total Gut Balance.

And he and he walked through it and a lot of it boils down to, you know, mostly plant based diet, lean meats, fishes, very good, prebiotic type, fruits and vegetables, things like, sweet potatoes.

You know why? Because it keeps your system moving and you can really adjust and optimize your microbiome. But even if you're taking care of your diet, when people come to us say, I, I eat well, and they do, you know,

genetically I don't have an issue, but I really had bad digestive issues.

You say, are you stressed? How do you sleep? And what they are totally overlooking is lifestyle. As a factor of microbiome health and stress can really impact.

And we've stress is a killer. They say they think it lowers their means, but it actually modulates. It causes inflammation, weight gain, insulin resistance.

You age faster. Just everything. Yeah. Yeah. So. So what's funny is we deal with some, you know, UFC athletes, Olympic athletes, bodybuilders, and they'll have the same issue and they're eating well, obviously they're, you know, doing everything they can with, their exercise.

But what they don't realize is they're stressing their body in a different ways. They're overactive results. Right. And so we're seeing more and more of that where just, you know, super athletes a over exercise or do all these marathons all of a sudden they just crash you put and strain on their body, you know.

So it's that's those are three huge factors. Then, you know, things like alcohol or can, you know, cause issues.

Diet, stress, and lifestyle factors

So what I always tell people is like, listen, you need to be, a little bit self-aware and understand what are the things that you can do to optimize your microbiome health right now in terms of eating well, you know, it.

What I've read is that our variety of foods is just from evolutionarily, what we eat is just so narrow. And then you've got, you know, the foods are so depleted of nutrients as mere pesticides and, you know, they phosphate and, you know, other stuff in there.

So it's even if you eat great, is it still good enough, you know. Yeah. So to me it's it's the 8020 rule for the vast majority of people. They don't really have to start worrying about that till they've improved a lot in their diet.

Right. So those things like when you're when you're eating mostly plant based, when you're eating lean meats, you're still seeing issues. That's when okay, maybe you can be much more mindful about like organic sources, like nutrient density, the way you're cooking and preparing the foods.

But for a lot of people, what we've seen is that it's that's not even the issue yet, you know, an extra 10% or whatever. And I'll give you another example where, you know, it's the boring answer, but it's boring because usually it's right.

It's it's all about moderation. Right. And I'll give you a very specific example. Moderation for the other guy. Right? Yeah. Not me. Right. So I'll give you an example of that.

We had a cohort of women that took our gut test, complained of very bad digestive issues, and when we looked in their data, we saw they had an elevated amount of something called zygomatic coda, which is a very aggressive fungi.

My dad would typically only see it in immunocompromised patients like HIV patients, cancer patients. So at first my dad thought, you know, maybe these are undiagnosed, you know, cancer or something like that.

But there was enough of them that we thought that's unlikely. And these were all like young, vibrant women, right? Like like, look at a yoga, catalog.

Right. And when we did it dug a little deeper into the data. What we found was almost universally, they were entirely cutting out carbohydrates and dairy. Why?

Because they've been told that carbs are not good for you. Dairy is not good for you, right? Yeah. They're probably

try to get rid of all their weight to try to get rid of the yeast.

Yeah. In the, in the actually they're building these because dairy and and carbs in moderation are actually very good prebiotic probiotic foods. So they're modulating your gut and keeping everything in check.

So when they remove those all of a sudden this cycle, Mikoto, which is sort of harboring under control, had a chance to spiral out of control. And guess what happened? They introduced a little bit dairy, introduced a little bit of carbohydrates back.

Those issues went away. Well, that could be like two delighted to. Good. Yeah. Yeah. So almost an addiction maybe like you know again you know. Yeah. So I, I heard a woman say this and it made a lot of sense to me is don't let wellness get in the way of your wellness.

Right. Because it's a it's very easy. And I sympathize with a lot of people because, you know, you can read five different health books and get 50 different approaches.

Oh yeah. Yeah. You know, very hard diet of the mind. This is, you know, like, high carb. Okay. Then we went with the food pyramid. It's flipped upside down. The, you know.

Yeah. Right. And I think for a lot of people, you know, I would keep it to some very basic tenets which will make a big difference for a lot of people.

Now, if you're still dealing with issues, that's where come talk to us. Come. You know, maybe you do get your microbiome tested. Maybe you do try one of our products.

But before that, a few things that people can do is one really look at look at your diet, because that's for a lot of people. An area. The other is start to be thoughtful about the type of especially over-the-counter medications that you're taking.

Just as as a everyday thing, you know? So listen, sometimes you need medication like there's a medication you need to take. But for a lot of people, I used to be one of those people years ago, I would just take an acid and and I didn't realize I was absolutely destroying my acid levels, my body's ability to produce acid, which is very important.

People think acid is a bad thing. Acid. What's keep keeps us, safe from things like E.coli. Like you need good acid. There's a reason that we make. Yeah, yeah, that'll just have to protect the stomach.

Which was VPC, 157, but, Is that. Yeah. Why would you want to go all this effort to make it if it was bad for you? Yeah. So the problem is your body goes into overdrive when, like, for me, I was eating things like pizza late at night, a lot of it.

And my body would just go into overdrive and acid production. So I would use Zantac or something, and it would bring it back under control. And then I started this moment like, well, wait a second, maybe I just need to be more thoughtful about how I'm eating and it controls the acid, and that way I'm not adjusting it, you know?

So it's things like that were a little bit more mindfulness and being thoughtful because, you know, we'll have people they'll often meet me and say, I bet you're anti antibiotics.

I said, no, I'm like the opposite. Right. Because sometimes you know what, you have an infection. You need to take an antibiotic. But but you don't need an antibiotic for anything.

Right. And that's sort of like we we're probably coming out of that pendulum where it used to be. Oh yeah. Well people, wouldn't you have to give an antibiotic if people have some or else they're really mad and they're never come back to you if you didn't give them the antibiotic, you know. Yeah. Yeah.

What do they do for me? You know, and, what what type of microbiome do you see in people like, proton pump

inhibitors or something long term? Yeah. So you'll see people that have very high levels of Candida, you'll see, you know, very, high inflammation marker organisms.

You'll see, you know, just a lot of reports of digestive issues and again, it builds on itself because a lot of times it's like the ultimate tough part of this is when people don't feel well, they often don't eat well because they want some comfort.

The exercise. Yeah. And when or if you don't sleep, it's like you wake up and, you know, yeah. Yeah. And so, you know, and then the other thing that we'll see is people that are genuinely they've been trying to do the right things and they'll say, I'm just so frustrated because I was trying to eat plant based and I was trying to introduce and it just I felt bloated all the time.

It just must not work for me. And what they don't realize is your body after so long, I'm not eating like, quote unquote proper foods. It's not. It no longer has the enzymes built up to properly process, you know, leafy green vegetables and, and really plant based diet.

So your body is, is just, like, overwhelmed trying to process. So if you cook the vegetables, does that eliminate the enzymes? Well. That's a great question.

I've never been asked that. Usually the less processed the better. But with that being said, usually what we find is if people stick through for a couple weeks, it all sorts itself out because your body does.

Your body is very, very, very adaptive and very able to rebuild, you know? But a lot of times people after a few days just feel bloated. They don't feel comfortable.

They stop. They're like, it must not be. You know, that's only making me feel worse. You know, sometimes it's like you got you got to give your body a minute to process.

It's like you hear people who go through caffeine withdrawal, it's like two weeks are miserable. But then, you know, they feel amazing, right? They actually have a lot of energy because they were just so that tight end with caffeine and and with the the fungi.

I know we're have limited time.

Fungi in the gut and maintaining balance

What are maybe some three things that people very surprised about fungus in the gut. Great question. So one of the things to be very surprised is that fungi is about, if you look at fungi under microscope, it's about ten.

It's bigger than bacteria, right. So there's you know, that it physically. So the amount there's actually more bacteria. But for every one fungi is about the size of ten bacteria.

So, so it's an enormous, player in the gut. The other is that you hear about boogeyman of the fungi world like Candida. Right. Candida. If you. Oh, you know, do you do you want that Candida?

Most people say no. No, we actually for the vast majority of people, Canada is actually a normal part of your ecosystem in your gut. But when it's at the normal levels, it can aid in digestion, nutrient absorption.

The problem with Candida is when it overgrowth, then you can have some serious issues. Leaky gut. You know, Candida, actual infection, candidiasis. So.

So people don't realize, though, that when they're, they're kept in place, they actually have a great role to play. The other thing that people don't realize is that it's not about growing or getting rid of any one organism.

It's about maintaining total balance in your gut. Because the analogy I use is it's like a shark. You wouldn't want to

be in a pool with a shark, but if we removed all the sharks from the ocean, there's going to be big consequences because they play a role in the ecosystem.

It's the exact same in the gut. What we see is when we try and remove things, other organisms start spinning out of control. It's that it's they all have.

Because I know a lot of doctors and I'm guilty of this too, as putting people. I'm just antifungals because thinking that let's get rid of all the fungi in there, right?

But it sounds like that's a wrong maneuver. Yeah. It depends like we'll have people like my you know, we just, had some, functional medicine physicians talk to my dad about this is when you're looking at, you know, what?

What is the right antifungal? You know, treatment. Is there standard flu? Can't, you know, like, there's so many that we we find that fungi is still not really understood in the medical community.

So it's been sort of a scorched earth approach, like, just get rid of it. And that's not necessarily the best approach. And like the infectious disease doctors think it's not a problem unless you have, you know, no immunity.

And what's problem with beyond your blood? Can you be dead, you know, so don't bother with it, you know. So it's funny because what we find is that's a classic.

Well, it's only really an issue if you're immunocompromised. That typically what people think I mean, when I say that is if it's something serious, like HIV, like cancer, like, you know, just a severe respiratory infection.

Yeah. You're now immunocompromised. But there are many other ways you could be immunocompromised. You mentioned one of them. When you're stressed, you mean a compromise.

You get a little bit of a cold. All of a sudden you're immunocompromised and so what happens is the elderly are generally immunocompromised age, any chronic infection, unity toxins, pesticides?

Yeah. Inflammation. Exactly. So so what happens is it is generally true that a lot of these organisms are not going to cause you an issue if you're not immunocompromised.

The problem is, if your system gets knocked out of whack, you haven't gotten a lot of sleep. You know, something's off. That's where you can be presented with a problem.

So it it's the way you need to look about your microbiome. It's very much like oral care is that it's an ongoing dynamic maintenance. Right. Because think about it.

You're like, if you get a cut on your skin, if you clean it, you put a bandage, you can pretty much isolate. It's not going to be sterile, but you can keep it pretty undisturbed.

If you have a cut in your mouth, you have liquid going in there, you have food, you have saliva production, you have all sorts of things impacting that could potentially.

It's very difficult, you know, same with your gut. You're getting food, you're getting all sorts of bodily fluids coming through. It's a very dynamic area where it isn't as easy to keep isolated.

So that's why I, like you, just need to continuously think of oral maintenance, my gut maintenance, where it's just about ongoing. And just a question about oral microbiome.

You know, people like want gum health and. Yeah, mouthwashes every night. Right. What's your thought? You know, your a probably all the good bacteria to come back.

So the good thing is your oral microbiome and actually your gut microbiome too will really quickly repopulate. It's

very difficult to basically completely sterilize.

Like that's just like when you when you see things like kills 99.9% of germs, those are done in lab tests. Right? It's it's very biofilms. Yeah. Correct. Right.

So typically it's really difficult to do that. Now with that being said, I still don't think it makes sense to just non stop use use mouthwash. What would we actually own a mouthwash company like I say that like and part of it is just understanding that not all germs are bad, right?

It's about controlling overgrowth of germs and controlling, when you know you become immunocompromised. Are you controlling that germ load? Right? Is what we call it. So yeah. Yeah, yeah.

Sometimes I'll be very aggressive in like some of those terrible microbiome and just give them like multiple antibiotics antifungals and then for a very short period of time.

But then you have tons of probiotics, you know, and my thought is not the bad ones down because the good ones won't be able to survive because they're getting out competed.

Yeah, whatever. It's theory. And then just a lot of probiotics. Well, and the other thing though, that we are big advocates of are prebiotics. Right. So prebiotics, the way I explain it is if your gut is a garden and probiotics are the seeds for like just growing an awesome garden.

Prebiotics are dietary fiber, which is literally like putting amazing topsoil in their gut so that garden can really grow, right? And that's really not that much of an analogy because literally that dietary fiber sits in your gut.

It's very hard for our bodies to process, and it starts to ferment. And probiotics are literally using it as food and it actually lowers the pH. So it makes it a much more hospitable environment for yeah, you're probiotics.

So, you know, after somebody takes an antibiotic, we'll often say like probiotics are obviously great, but just get that topsoil back in there. The prebiotics to start rebuilding the fun.

Yeah. Because I've seen some studies on like the, picture AK activo.

Prebiotics, products, and testing recommendations

So like with neurodegenerative diseases, but I don't think you can get it as a probiotic. But if you give the prebiotic just seems to allow it to flourish.

Yeah. Because your gut already has good bacteria and good fungi in it. It's just a matter of fostering it. And yeah, you can supplement it with probiotics, but like, just encouraging the growth of what's in there is a giant, jumpstart.

So do you recommend prebiotics even over probiotics? So we we recommend using them in tandem kind of that way. You're sort of again, like laying the foundation and then feeding the garden and really kind of giving a boost to what's already going there.

But, you know, I think if all you were doing like, like one of our most popular products is actually super grains products. So it combines probiotics, prebiotics, enzymes, super greens.

Reason people love it is what was the name of that again? A biome super greens. So, people love that because they're getting it all in one scoop is what I, you know, I just yeah, people get capsule fatigue, you know?

Yeah, a lot of people, you know, and even, you know, it's great for I have a six and four year old. I'll just mix it into their yogurt thing. They don't even notice. Right.

It like because kids even, like you said, like I'm not a big capsule person. I'd rather make something, you know,

powder. It's just easier, you know? And otherwise you're taking, like, you know, 5 or 6 different capsules.

That gets all pretty quick. Yeah, 5 or 6. I like 80 because, you know, you find a new something. I gotta take that. And you're like, oh my gosh. And your rashes and all that.

So in your difference between your other products. Yeah. So we are our number one seller is a is the biome super Greens. Just because it's that all in one product.

We also have a biome super Reds which is 14 different super red products. Things like beets sweet potatoes, pomegranate, very high antioxidant ingredients that are, you know, you get more in reds like berries, you know.

So is it the antioxidant, properties that's good for the gut or is it also something else that there are great prebiotic. So we also have prebiotics in there.

Functional mushrooms, probiotics. And so that's, the super reds and super greens. And then we do have more heavy duty probiotics, which are 30 billion cuz combines the good bacteria, the good fungi, even digestive enzymes.

So, you know, we just have a, also a microbiome test called the biome gut report. And that's where people were like, listen, I've tried a million things.

I'm not sure what I need to be optimizing. So they take that test at home. At home test like 23. Me and, they get their results. And then what people love is they actually get actionable recommendations.

So it doesn't. These are the foods you need to avoid. These are the foods you need to eat, you know, based on their. Really. Yeah. Based on their microbiome and their the questionnaire they fill out.

They get lifestyle recommendations and they actually have the option to talk to one of our nutritionists and walk through all that's cool. And can you when you look at someone's test results, I imagine you can probably tell their lifestyle, their level of health, what they eat.

Like, you know, like, let me guess, you're right. You know, you can see a lot of, of especially when you're looking at their questionnaire that, you know, this is a very high stress person that needs to get that under control.

Otherwise the other things are really not going to make a difference, you know? And sometimes, you know, we're all busy. We're all living in our own lives.

Sometimes you need someone to objectively look at what you're doing and say, listen, here's what you need to concentrate on IQ, okay? You know, so so yeah.

So you know, for us the science is critical. It's it's still to this day my father's NIH funded. He'll you know, he jokes like diamonds lab because he just loves it.

And you know, for us, it is important to sort of bring that science out of, you know, ivory tower of his lab. Yeah, yeah. What are some of the, fungi you have in as a probiotic like Saccharomyces?

So it's Saccharomyces variety. So we have our own strain. And which makes a difference, right? Yeah. You know, 100%. So and we went through and did what's called grass analysis, which means we've, confirmed it's generally regarded as safe.

That's not a given. You know, it's just like any probiotic strain, if you are just using any strain, you could have antibiotic resistance. Again, you have some other issues.

So we have to now the FDA is cracking down on that. Yeah. So we went through that process for every one of our strains. Because you know for us it's very important to know, you know, even down to doing the DNA genotyping of

the strains.

Right. So again, we we just brought on the former global, head of nutrition from, you know, Reckitt Benckiser. We have a new clinical director of science who came from, you know, one of the biggest probiotic ingredient companies.

So everything we're doing is really based in with this pass muster in my father's NIH lab, you know, and it's impressive. That's impressive. And other publications and, I mean, that's where it is because, yeah, one strain may be very different than another.

Right? But most people look at the label, it's got the same thing, but not necessarily so. Well, the and I sincerely say this, whether you look at biome or not, you pieces of advice when people are looking at probiotics or any dietary supplements, where is it made?

That's very important. Is it made in the United States? Why do I say that? It doesn't mean you can't get a good product. It's not made in the US, but it's a lot easier to trace.

In quality if it's in the US. FDA ordered facilities. Yeah. The next is what is the product doing to make sure the strains are alive when they get into your stomach.

Right. So, for example, our bottles are heat resistant plastic. That's important because he can kill, organisms. Right? We also coat our our probiotics so that they're protected from the acid as it's going into your stomach.

So always take a look and see, like, what is the product doing to make sure these are alive when they get in your car. And because I worry about like the refrigerated ones because yeah, they're refrigerated when you go to the health food store.

But what about the truck and all that and juice or based or. We don't, we don't have spore based. There are some nice spore based options. But again, ours was formulated based on what strains we found had the best activity against biofilms.

And that's how we formulated. That's it by ourselves we're finding is is the problem. You know. Yeah. Yeah. So that's nice. And where can people find your product.

Best place is our site biome health.com b as in boy I o h m com and you know they can check it out and or biome health on all the social media channels.

And they can always, you know, feel free to reach out to me. And I'm always happy to answer questions. And, that's nice. And you got the testing as well.

Yep, yep. And it's all off of our site. That's great. That's great air time. I know. We got to kind of hard, hard stuff. I, we covered a lot. I think this was really great.

Yeah. No, I really appreciate, you know, I appreciate everything you're doing, and I appreciate you allowing me to share a little bit more on the microbiome.

Yeah, and new information. You know, about fungi. We've always told that fungi is bad, right? You don't, find your. You say, make sense? Well, it's, it's going to be an exciting few years coming up in the microbiome.

Sounds wonderful. Hey, thank you so much for taking the time. It's been great. And, have a have a great weekend. Hey. You too. Take care. All right. Thanks a lot.