Summit Introduction and Guest Welcome

Welcome everyone to the Gut Health and Longevity Summit. I am so glad you're here, and I want you to take a breath right now, because what you're about to hear over these sessions could genuinely change the way you think about your health, your food, and your future.

We built this summit because the science connecting your gut to every other system in your body has never been more compelling, and most people have never heard of it in plain language.

Our experts are here to change that, and today's conversation takes us somewhere. Most people have never looked for gut and longevity science. The fungal kingdom.

My next guest has spent 41 years vegan and decades as a competitive natural bodybuilder. Proof in his own body that science he's about to share isn't just theory.

He built his life's work around an organism. Most of us have never thought about fungi and the compounds inside it that may be central to how we age. Jeff Palmer has been vegan for 41 years and is a natural bodybuilding and Natural Physique Masters champion.

He is a national lecturer and author and vegan patent holder, and a two times next to the award winner for Best Supplement of the year. Plant based news named him number 40 on their top 100 Most Influential Vegans list.

He created the first all vegan natural bodybuilding competition in the world, and his science lecture on mycelium and sperm has drawn over 560,000 views on YouTube.

Jeff, welcome! I have so many questions for you and I. Now our audience does too. So let's dive in to the first one.

Fiber Types and Gut Health Basics

Let's start by talking about fiber. Fiber itself and then specifically mycelium as the type of fiber and what they are and how they different in the sense of plant fibers that our audience already knows as things in oats and beans and what mycelium have.

So let's get into it. Yeah. So when people talk about fiber, you know, a lot of a lot of people have this misconception that fibers were fiber. It's not.

There's lots of different types of fiber. And those fibers have different functions in our body and in our microbiome. So the two major groups of fiber are soluble and then soluble fiber.

Basically insoluble fiber doesn't digest. And it is a bulking agent. So it helps move things through the system really well and helps us keep us regular and keep some toxins out of our body to now soluble fibers get broken down into three main groups.

This is fiber is the first one. This gets fiber is a fiber that gels when you add it to water. So have you ever taken a psyllium husk and stirred it into a glass of water?

It'll start to gel really quickly so that gelling actually acts as a way to slow carbohydrates or glucose into the bloodstream. So it's a good blood glucose regulator, but it also captures fats and cholesterol and things and pulls them out of the system so our body can, through the liver, push excess cholesterol into the digestive tract.

And these fibers can then grab it and pull it and take it out, helping to lower cholesterol levels, which is why many

studies on psyllium have shown it to actually have a very significant impact on lowering LDL cholesterol.

So that is a bias fiber. They actually grab stuff's pull toxins, pull fats, pull cholesterol out of the system. And that's a really good function to. They also help with the glucose absorption.

So the second class is fermentable fibers. Now these are actually broken down by bacteria in the large intestine. This process this process then creates short chain fatty acids.

So they consume the fibers and then they basically poop out. Short chain fatty acids. They metabolize them into this form. Now short chain fatty acids have a whole host of anti-inflammatory benefits both for the gut health, brain health, liver health all over the body.

We used to think they just fed our colon and helped with the colon, help with intestinal barrier and stuff like that. Now we know short chain fatty acids are integral throughout the whole body at reducing inflammation and get stored in the lungs, even in the brain and all over the place.

So that's fermentable fire. And then a subset of fermentable fiber is called prebiotic fiber. So prebiotic fiber is actively feeding and stimulating the growth of the beneficial the good bacteria that thrive in our in our system.

Now when this happens, you create a heavier balance of good bacteria to bad bacteria. And that's what you want to do. Because as the good bacteria increase, they suppress or lower the bad bacteria, the pathogenic bacteria that can produce carcinogens and toxins that can have negative effects.

We now look at colorectal cancer is the number one cancer killer of men under 50, which is a horrible statistic. And but it's all about we're putting it our mouth and how our gut reacts to that.

So we have these three main types viscous fiber, fermentable fiber, and prebiotic fiber. Now this fiber can be like psyllium or glucans, which you can find in fermentable fiber are beans and onions and garlic.

And then a prebiotic fibers, more like any linen and chicory, these kinds of things. So we have good plant sources for them. But let's break these apart.

How much of viscous fiber is in plant foods? On average, you get about 20 to 30% of this is fiber found in plant foods and fermentable fiber. It's about 25 to 35% on average.

Obviously, there are some that go up to 65%, but on average for the whole dietary pattern. And then prebiotic fiber is even smaller, which is about only about 5 to 15% of the fibers.

Now, what's interesting, the fibers in mycelium are chitin, and they are actually all three. They are viscous, they are fermentable, and they are prebiotic.

Now, how much of their fiber is biscuits from enviable and prebiotic? 100%. So you got plants on one hand having 5 to 15% prebiotic fiber. This is 100% of the fiber, is prebiotic, is fermentable, and is viscous all at once.

So it's just like the best form of fiber we know of. And you're about to ask a question. Yeah. So for somebody that has not heard of the term analogy mycelium, and they're hearing it for the first time, because I know this is going to take the trajectory of the rest of our talk.

Let's define for the audience what is mycelium. Oh, so that's a great question. That's a funny it's going to be a funny answer because just last week, Australia Australia formally recognized fungi as its own kingdom last week.

What Mycelium Is and Why It Matters

That's how long it's taken for people to understand that fungi belong to an entirely different kingdom. So there are three main kingdoms. Plant which is plants.

Font anomaly, which is animals and fungi. Fungi were considered a part of the plant kingdom up until 1969. So it's that reason in my lifetime that people thought the plants, that fungi were plants.

That's not the case. There are a whole different kingdom altogether. Fungi are actually genetically more closely related to animals than they are plants, but they have benefits and commonalities that are more like plants and some and more like animals and others.

So the kind of the best of both worlds, really, fungi have lived on the Earth for, based on fossilized evidence, up to 2.4 billion years. That's way before plants for animals that were insisted.

So they were the primary kingdom that made all the other kingdoms plant and animal possible. So what are our common names for these fungi that we might see nowadays?

Like what are we thinking in common day like? Are these the shiitake mushrooms that people are eating? Like, what is this. So people can kind of like visualize it?

Yes. So when people say mycelium, the first thing they think of is mushrooms generally. Now mushroom is just a part of the mycelium. So it's called the fruiting body right.

And if you think of an apple tree it grows branches. And then a fruit hangs off of it that falls freely from it. And it's just a part of it. It's the fruit of the tree that carries a seed.

The same thing with the mushroom, except the mushroom grows underground and what's called hyphae, and then pops up a mushroom on the top of the surface to release its seed.

So it's very similar to a plant just upside down, in that the vast majority of the mycelium is underground. Up to 95% of the mycelium is actually underground and non-visible to most people.

But mycelium and the fungi kingdom covers yeasts, molds. So the yeast is in your bread, the yeast that makes your beer, the yeast that makes cheese. These are all fungi, the molds, the mold that made penicillin and saved people's lives.

And of course, the mycelium that we're now going for human consumption for food. So mycelium can be used for clothing as a leather substitute. It can be used for building materials.

It can be used as a source of medicine. It can be used as a source of food. So when we think of mycelium, we look at many researchers. Look at okay. It is one of the largest carbon sinks for CO2 in the world.

About 75% of terrestrial carbon is stored in the ground. And it's done. So about 36% CO2 from every fossil fuel burned get stored in mycelium underground.

They are makers of protein, but they also share their materials with plants. Okay. So when Earth first cooled, all life was in the water, just floating around, bumping into each other.

Single cells. And then fungi specifically might see them started to go up on land and started to break down the rocks to usable for plants. Otherwise, plants going on ground would never survive plant life on Earth.

Terrestrial plant life would never exist without the help of mycelium. So mycelium not only broke down the rocks, they they sent in their roots to make sure that the soil stayed the same, and they created a base that plants could come live on land.

Now plants had roots to get water and nutrients, but the roots weren't long enough. So the mycelium attached to the roots of the plant and then started bringing nutrients to it.

This is called mycorrhizal might, Celia. So without that extra help, it's like hair extensions for the plants of the

roots. Without that help, plants would have never survived.

Does it? Matter of fact, about 75 to 90% of all plants, including forests and and food we grow depend on mycorrhizal protein for their nutrition. So that allowed for animals to come on because they had a plant source to eat.

So mycelium started, the ground paved the way, and then everything else plants could grow on Earth. Animals could grow on Earth. Humans could exist on Earth.

So let's get back to our gut health audience when we're talking about fiber reaching the colon. We talked about the different types of fiber that reaches a colon.

And the mycelium has all of these. Now can you share or walk us through what the research shows about mycelium fiber fermentation and short chain fatty acid production, and how it compares to fibers that are already well studied, like inulin or oat beta glucan. Yes.

So each one of these different, like beta glucan or Newlin or some of the legacy, the Fos things like the fruit sack rides. They all have very specific and unique benefits, which is really cool.

Whereas the fermentable and prebiotic and viscous fibers in psyllium have a much broader, they do a lot of those things as well and stead of very specific things and attributes and benefits.

They have a broader reaching. They are all viscous. They are all fermentable. They are all prebiotic. So the like the viscous fiber, when you look at plant that form viscous fiber.

Mycelium Fiber, Fermentation, and Microbiome Effects

Remember plant foods have about 20 to 30% viscous fiber, whereas mycelium are 100% viscous fiber. So it traps more of the cholesterol. It traps more of the toxins.

Studies have shown that even old trap microplastics. So they did a study, and they found 116% of the microplastics were pulled out from the gut by adding Titus n from the main fiber in mycelium.

Now you're like 116%. How are they getting more microplastics out than when putting in? It's because it's actually pulling microplastics from inside the body, not just the microplastics that are in our digestive tract, present in our food, like drinking bottled water or things like that.

So is this something that people would notice quickly, or is this more of like a slow, cumulative shift over the in the gut over the weeks? That all depends on the person, their dietary pattern, their state of health at the time they start all of those things.

If they're very toxic people, if they're older people and have a very deteriorated god, they're going to probably depending on their health situation, some may take longer before they start to see the benefits.

Some will start to see benefits. And more immediate. Some of the studies were done and as little as 2 to 4 weeks, and already getting significant study results in that loss.

For example, they did it on obese children and found that they lost 3 to 4 pounds within just weeks by taking Titus on. No change in diet, no change in exercise, dropping body fat, lowering cholesterol, lowering triglycerides.

So these are immediate and measurable effects within just weeks. One of the things that they noticed was that these fibers increase a specific microbiota called Ackerman's or Akamatsu.

Akamatsu is being strongly correlated with how well our body metabolizes the energy that we put in it. So whether your body ends up storing it as fat or using it for energy, that's really key because that's the basis for metabolic

syndrome, right?

Diabetes, type two diabetes, all of those host of different problems we see by not properly metabolizing or food increasing these specific ones like Rosebery, Rosebery.

I just had a wonderful 2026 study that came out that showed us that not only significantly increased Rosebery, but that increase in Rosebery, increased muscle strength and increased muscle size.

No change in the protein quantity. No change in calorie content. Changing the microbiota by feeding the gut its preferable fibers and getting a larger amount of a larger amount of Rosebery to the specific strains of bacteria that thrive in our gut.

We're just feeding them and growing the populations and getting significant different health changes within our body. That's exciting because we had before almost always just said it's the food you eat, calories and calories out.

No it's not. No details of the food change. When we change our microbiome. So let's talk a little bit about, for our longevity focus listeners about sperm.

Can you explain to me like what a G is? In plain terms, why does research point to sperm as one of the most important levers we have for supporting it as we age?

Absolutely. So to back up a little bit on the mycelium history. In 1928, the number one cause of death in humans was pneumonia. Right. So the cure for that was penicillin, which came from I see him, we've added an mycelium mold, you know, bread.

And that was the greatest increase in human lifespan ever recorded. An entire human history. Our lifespan increased 23 years on average after 1928. That was huge.

So that was the first way mycelium increased human lifespan more than it ever had increased in the history of humankind. The second time we look at what is the number one cause of death currently?

Atherosclerosis. Cardiovascular disease. Right. Well, what is the number one most used drug for atherosclerotic cardiovascular disease? Statins. Guess where they were first found.

Mycelium. So mycelium to the rescue again first curing us of pneumonia. The number one cause of death in 1920s. Now in the 1970s, statins were created by mycelium and have saved hundreds of millions of lives to as well.

Now, back in 2009, sperm was discovered to actually induce autophagy. So I looked at that and I said, well, Mike, psyllium are the longest living organisms on the planet.

We have records of mycelium living for tens of thousands of years, not dying. So how can an organism live for that long? Because it regenerates. It repairs its cells super quickly.

Now, how does it do that? It does it by producing a lot of sperm so that its cells can be quickly and effectively replaced, repaired, and lived longer.

All right. So when I read about that, I started looking at different mycelium. And I said, let's test this mycelium first. So in 2025 I requested the testing for a specific type of mycelium.

And sure enough, what we found was that mycelium was the richest source of sperm, adding of any organism on the planet by far. Sperm is found in plant foods.

Doctor Gregor has talked to dedicated a whole chapter to his book, How Not to Age on Spreading, because it is now being considered the most effective nutrient that we know of affecting all 12 of the nonmetallic pathways for

aging, positively affecting it.

So when we found this, and it was seven times the amount of sperm that was invaded was in wheat germ, which is the one Doctor Gregor talks about. I was like, oh my God, this is incredible.

We've got to bring this and make this available to more people. So sperm. Why sperm? Well, the one thing that we knew of, even for the last 100 years, had that extended lifespan in every species was fasting or calorie restriction.

Okay. So when you reduce the amount of calories, you're not creating as much waste. That's like, say, your car is in the garage and you just touch on the gas pedal a little bit.

Okay. It's starting to create a little smoke in the garage, but not enough to be harmful. If you punch that accelerator down and you're burning up a lot of gas now, the fumes start to become very toxic, and you got to open up the garage door, or you're going to see the same thing is happening on a cellular level.

When you eat food, your body uses it for energy.

Spermine, Autophagy, and Longevity Science

But just like any other machinery, when you use it for energy, it creates waste products. These race products can build up in the cell, and if you don't pull those waste products out, the cell will get contaminated and eventually die.

If it gets too toxic. So a tough a G is in every cell. Our our body's ability to remove waste quickly so it doesn't cause aging or cellular death. Yeah.

So we we know like we've seen quite a bit of literature on intermittent fasting and how that a duces the state of kind of clearing out the misfolded proteins and whatnot.

So you're saying that mycelium has a very high source of this sperm, however, like what I've seen, and maybe this is just in the literature, and maybe the literature needs to be produced on mycelium for, for this.

But what I've seen is that wheat germ, as you mentioned. So it has about 25 to 35g per 100g. And then natto is the other higher source at 11 to 20. So where is mycelium falling in that per 100g.

About a. So yeah. So I think that's that's information that definitely needs to be put out in the literature. So it can be like compared because I know when we do testing on products, it's one thing, but we want to be able to verify it.

Right. So that that so that's I think that's an important point because I know in Doctor Gregor's book he, he does talk about those other products. So it'll be interesting to see as mycelium becomes more of the conversation in gut health and longevity, where that research starts developing now, beyond the topics that that discovery was, was done on a test, it was done at Europeans Labs, which is a global laboratory that does testing, is widely considered the top testing lab in the world.

Oh yes, I use your I use your fins as well. So very familiar with your offense. What I'm saying is like now taking it out of a lab to actually do the research.

So but beyond a what else does the research show sperm might be doing in the body. So it's not just a and I want to be careful with the audience here about what is genuinely established in human studies versus what is very early animal studies or just too early to know.

Like what else do we know about sperm? Good question. And then I'll be careful to do that and state when there's a preliminary data. Okay. For the reason obviously the look as an ethical vegan I'm against animal testing and I hope it gets banned soon enough.

We have in silico modeling. We have other ways of testing things that can give us a good, accurate research as well. Right now, especially with AI coming into the fold, and even quantum AI will be able to do some modeling that will more fairly predict health outcomes based on those.

And I hope animal testing goes away. But at the current time there, the reason for some of the animal testing is because you need accelerated models only discovered in 2009.

For a longevity study, you need an entire lifespan of a human being. That's 100 years. Okay, we don't want to wait 100 years for data to see if something could be beneficial to him and beings.

I'm not arguing or trying to excuse animal data. I still don't think it's necessary, but that is the reason why it's doing it. Mouse lives, you know, just a couple of years so you can see its entire lifespan, but what's permanent is doing into it.

So some mouse models are not translatable to humans at all. Some are. And there are different reasons for that. But let's get back to the health benefits of of serenity.

They are extraordinary and and they are across the board. So let's start with the very beginning. Sperm is found in human mother's milk. Why is this sermon fed to a child through breast milk?

An infant helps stimulate their immune system and triggers the whole cascade of them, developing a proper microbiome and a proper immune system. So it's a key component.

From day one, we're born that mycelium does not myself. I'm sorry. Sperm. Now, sperm is actually produced by our gut bacteria to as well. So there are three ways we get sperm.

What is our own body endogenously, inside ourselves? Produce property to our gut. Bacteria actually produce property because it protects them and also helps heal our body.

So we can absorb some of that from our gut and then third, through our diet, through plants and fungi. But as we age, we see sperm levels decline. And with that decline, we see a correlation between many, many disease states.

So spreading helps stimulate the body's healthy gut bacteria lining called mucin. This prevents pathogens and other particles from coming in. It also can bind to different things like alpha synuclein.

Alpha synuclein is a protein found in animal products, specifically vertebrate animals like chickens, cows, pigs. When we cook those, they denature. When those denatured proteins they can form was called Louis bodies and the gut.

Those Louis bodies then in a damaged gut, can go in and go all the way to the brain and cause Parkinson's disease. Sperm plays a role in preventing that, both in the gut, both through the protective lining and protecting the brain in as well.

So we see lower cases in humans for dementia with higher up, lower cases of Alzheimer's, Parkinson's disease. It's shown to increase FGF. One 2024 study sperm activates adipose tissue thermogenesis of fat burning by produce a by up regulating FTF.

If you don't know about Steph one we could spend a whole day on that one too as well. But look it up. Type in f tf 21. It's an amazing molecule. Really important.

Doctor Gregory talks about it a lot too, as well. Lowering cancer deaths in humans, improved immune function in humans, improved microbiome and digestive tract muscle function inhibiting sarcopenia and elderly people.

Improved liver clearing out the liver from fibrosis via autophagy in the liver. I mean, there's almost no organ that has not been officially even the hair.

So two published human clinical trials have shown it increases hair growth, increases hair thickness and and prevents hair breakage. So hair loss. And that's two published human clinical trials in healthy normal adults.

We're seeing from fat loss to muscle to memory to brain health to cardiovascular health to cholesterol to thermogenesis. It's extraordinary how much human data is now being done on it.

But remember, it was only 20 years ago that was even first discovered. It was only last year that mycelium was discovered to be the richest source of of sperm on the planet, and that was by me.

So we're still nascent in this discovery process. We still have so much to learn. But the science is is extraordinary. Now, I want to make one thing clear, because here's in 2024, just two years ago, less than two years ago, three amazing studies came out all at the same time.

The first one speaks for itself sperm controls autophagy during fasting 2024 starting. So we used to think, okay, when you fast it triggers the release of spreading.

And not that helps it, but it's the fasting that does it. Now again this is an animal study. So take it for what it's worth. But when they actually took what's called knockout mice, mice where they prevent the mice from producing any sperm at all, they fasted them and they had no benefits, no health benefits, no cardiovascular benefits, no arthritis benefits, none of the benefits that you normally see through a genius biopsy.

So it's not the fasting that caused the benefits, it's the fasting that increased levels that delivered the benefits. So why does fasting cause sperm to go out?

Okay. When you you have two major programs running in your body. This is all more complicated than that. But I'll simplify it for because for our team right now to which is creating proteins and then autophagy, which is breaking down.

So you need to create proteins so that you can heal and repair and build in cells. And then when they break or they become damaged or cancerous, the body needs to break them down.

So you need to build them and break them down, build them and break them down. All right. So when you eat you your body says, okay, great, we got food supply.

Let's build. Let's turn on indoor and suppress autophagy. Now when you're not eating, the body says, okay, let's go in and clean up. Send the cleanup crews. There's no no food coming in.

This is a good time to rest and go ahead and tear down the bad stuff. Now, in nature, we would normally, like every other animal, find some food, apple tree eating and eating it.

And that's all the apples on the tree. Now I got to go find another food source, right? And there would be a period of fasting. So we have feast and famine.

Even seasonal plants grow really well in the summers and fall, not so much in the winter. So you have a built in autophagy mechanism in nature. Humans invented modern agriculture and grocery stores, so now we can eat 24/7 all the time. Yay!

Yay! Great invention for preventing us from starving. Not a great invention for allowing us to kick in autophagy. Now here's the cool thing they found when you add sperm Modine, you can get the benefits of autophagy by increasing photography.

You get the benefits of fasting by increasing autophagy without fasting at all. That's the new big deal. People aren't going to stop eating, but if we can get more experimental into them, we could stimulate a greater amount of a top, which would allow the cleaning of the cells and allow the cells to live healthier, longer.

It’s not about just about lifespan. It’s about health span. How well can you live long?

Personal Journey Into Fungal Biology

Not how long can you live sick? Which is what we’re learning now. Right now we live longer by about 13 years. Well, that sounds good. But those 13 years, we’re almost all sick by the age of brand new 2026 study just came out August.

They showed that by the age of 60, 90% of Americans will have atherosclerosis plaque in their artist, 90% will have the number one cause of death in humans.

That’s horrible because we’re not clearing ourselves and trying to get people to fast stop eating for three or 4 or 5 days a week, maybe much less 40 days.

Wow, this is not going to happen. We need another way to get people healthier without having to force them to stop eating. So let me ask you this. You’ve been vegan for 41 years and a decades as a competitive natural bodybuilder.

Before most people have ever heard of the word mycelium. What actually pulled you personally into this fungal biology? Was there a moment a person like, what kind of took your trajectory that way?

Yeah, so I’ve been in nature buff since I was a little kid. I was fascinated by science. Jack Cousteau was my hero growing up as a kid. He was showing us a world that most people weren’t even aware of.

The undersea world of Jack Cousteau. I’m like, wow, there’s an entire world with of life that we’re not even aware of, we’re not paying attention to. So when I started reading about mycelium in the Funko category, I’m like, that same world is right beneath our feet.

It’s the third largest kingdom in the world, actually second largest behind plants. And you want to know how much mycelium in in our planet. If you took the mycelium out and laid them down into end on the strand, it would go all the way to here, to the sun and back 10 billion times.

That’s how much mycelium is important to this planet. They break down plastics. They break down almost any non-material. They eat radiation, every waste material.

They break down PFAS and forever chemicals they can remediate almost break down almost any known structure, any chemical human beings of created. They can break it.

They can figure out if we can break it down. They’re incredible for healing this planet. They recycle everything. All the green stuff that you talk about, their CO2, they recycle everything.

Even though my claim that we’re growing for human consumption can break down food waste, you can take potato skins thrown in the tank and it’ll break it down and turn it into usable protein so we can reduce food waste.

I’d like to read this short clip. So the United Nations says we’re having a problem. Our food source isn’t sustainable. It’s going to collapse. And instead of millions if not hundreds of millions of people going hungry, we need to come up with a better solution for our food supply.

So they brought together farmers, agricultural specialists, people from the ecology and environment, researchers on health. And they said, let’s put together a United Nations group of the best and brightest minds and say, what is the way forward to do this?

And I want to read what they found first. The study is called mycelium, gives it away a little bit, a nutrient dense food to help address world hunger, promote health, and support a regenerative food system.

It's a 2023 study and their quote is with this quality protein, essential micronutrient profile and lower impacts on land, water and greenhouse production, Miko Foods can aid in the achievement of the UN's Global Goals to end hunger, achieve food and nutrition security, and do it in a sustainable and regenerative agricultural system.

So that's what they came up with. They said that my cilium is the way to move forward in our food supply. It it reduces food waste by turning it into usable food.

It breaks down and reduces CO2. And it's funny, a single mycelium can produce the entire protein equivalent of a cow in 24 hours. It takes a cow years to grow that long to get to that amount of protein, and it's 93% of it is wasted and it's food supply.

So there's a horrible conversion rate. Everything that you put in, energy wise, goes into that high ceiling is converted to protein in 24 hours, the same as a cow, so that I'm actually allergic to my fungi.

So just for some of the individuals who are listening, if you've ever had histamine issues and we have an entire episode on histamine and oh, this, there might be a stage in your wellness journey and your gut health journey.

And I think this is absolutely fascinating. This topic is fascinating, but with individuals whose gut maybe not be ready for where they are. I just want to hold a little bit of caution for those individuals because it could create a new flare that they're like, oh, but this is supposed to help clear everything.

Practical Takeaways and Cautions for Adding Mushrooms

So I just I really want to hold that caution there, because I have plenty of patients who have come to me with histamine issues and mushrooms as a or that family, let's say, can aggravate it.

So I just want to hold that caution there. But last question for you, Jeff. And I want this to be very concrete. So for somebody watching to start supporting their gut and their cellular longevity through food, what would you actually ask them to either add or change?

This week, after listening to this question, I think one of the simplest and easiest ways, if you are not histamine intolerant, it it's called. So if you if you don't know if you have hit, you can get tested for it.

It's a mouse swab. You can order it on Amazon and get yourself tested. About 1 to 3% of the general population is histamine intolerant and the intolerance is variable.

Some people have it very strong, some people have very mild and can actually eat mushrooms with a little digestive discomfort, but not much more than gas or bloating from beans.

Some people do not projectile vomiting from it, so not really a good thing. And that's a challenge definitely with mycelium, because there are that small segment.

Now 1 to 3% of people have an allergy to peanuts, and they can actually die from eating peanuts. Does that mean nobody should eat peanuts? No. It's one of the most popular foods on the planet, peanut butter, and can help a lot of people.

So we got to keep this in context. You know, same with celiac is about 1 to 3% of the population to as well. Does that mean everybody nobody should consider eating week?

I don't think so. But you know I it's not that I don't have the empathy for these people. Yes I was why we put it on our packaging and and tell everybody if you have histamine intolerance do not use this product.

Period. There is enzymes that you can purchase online and that will may help you with that. But that's between you and your physician to figure out if those enzymes are appropriate for you.

And that could help you incorporate some more poly polyamorous Birmingham rich foods without having noticeable digestive discomfort or issues. So yes, the key would be to adding some of fungal to your food supply.

Most easiest is just by adding mushrooms. Now, mushrooms are not the same. One of the other cool amino acid compounds that are in mushrooms is a is another longevity nutrient called ergot.

Io9 ergot is found in specifically in Austria, hence the term ergo, which is from ergot, which is from the fungal kingdom. Ergot is now being called the longevity vitamin, so sperm and ergot or rich sources are both in the fungal kingdom.

So if you are not allergic to mushrooms now some people are allergic to mushrooms specifically. That may not be to my ceiling. Some people are allergic to this amount, but not mushrooms entirety.

So you got to find out which of those applies to you. Histamine intolerant is a little more common, much more common actually, in women and women. Post-menopausal.

So if you fall into that group, better get yourself tested because you may be eating mushrooms just in your solid or in your pasta, and it may be causing discomfort and you're not even aware of it.

It's good to be aware of it so that you can make some adaptations to your own dietary bottom two as well. So yes, adding mushrooms or obviously I'm trying to make my ceiling more available and readily to use in its whole food source to try to get more people using a whole food protein source instead of isolated protein powders, which is most common right now.

Being the natural bodybuilding champion, I always chose the vegan, the natural route because of the because all the health benefits of the fiber. But to be honest, plant proteins, most of the fiber and most of the polyphenols already getting just mostly the protein.

And I'm like, there's got to be a better way. But there was nothing really in its whole food state that was high enough in protein to make that accessible and usable easily.

You could take it to work. You can take it to the gym and drop it in water. Start in. No, put it in your oats, put it in a smoothie and it's a whole food.

That's why I really wanted to make this my ceiling more available to more people. Just from from ultra processed foods like way and plant proteins to a whole food source of protein that also was the richest source of prebiotic fiber and the richest source of spreading all in one.

Jeff, thank you so much. This has been genuinely eye opening, the idea that there's an entire kingdom of fiber and compounds outside of the plants we already knew to look at.

And so Jeff can be found at Clean Machine online.com. And I encourage you to look up his lecture on YouTube. And here's the key takeaway audience. Your gut and your cells have the same conversation.

Feed the fiber that supports digestion. And you may be supporting the cleanup process that keeps your cells young. So stay tuned for another episode and we will see you in the next Gut Health and Longevity Summit episode.

Thank you.