Introduction and guest background

Welcome back to the conversation. I'm now joined by Doctor Jocelyn Strand, ND she's a vice president of clinical education and research at BWH labs. Her work centers on translating emerging science into practical guidance that builds clinical confidence and long term trust.

A natural physician with more than 20 years of experience in integrative and functional medicine, Doctor Strand is recognized for her leadership in microbiome and botanical therapeutics, practitioner education, and scientific communication.

She spent more than a decade in clinical practice as a primary care provider specializing in gastrointestinal, hormonal, infectious, and autoimmune conditions, experience that continues to shape her practical and patient centered approach.

Doctor Strand believes that science is most powerful when accessible, actionable, and in service to health. Her work is guided by simple intention to translate science into care that builds resilience, restores balance, and supports long term well-being.

Doctor Strand, welcome. Thank you so much. I'm really happy to be here, Jason. Well, this is going to be a fun one because we're going to focus on a very specific molecule specific nutrient specific nutraceutical product called beta glucan.

And this is something that I think maybe some people have heard of, but not really quite sure what it does. I think there's a lot of sort of education, both in the clinical world, that I find for practitioners as well as the consumer.

So maybe we can start at the highest level. What is beta glucan, and really, where does it come from in nature? What is this molecule.

What beta glucan is and where it comes from

Yes. Well beta glucan is a polysaccharide. So it's a it's actually a string of glucose molecules that we can't digest. So it's not something that will affect blood sugar, but it's a sugar molecule.

So carbohydrate molecule and beta glucan as you mentioned it can be a very specific molecule. But beta glucan itself describes a whole family of molecules glucans.

And they come typically in the natural world from all things dank. I had one patient say that to me, once is like anything fungal, you know, so it can be mushrooms or and I think that's what most people are familiar with cans.

The beta glucan in our product comes from the cell wall of yeast. And it also. So if you think of all things like that, then we will have gotten exposure through all of human history to to yeast and fungal and moldy things in general.

And there's also beta glucan in, in some grains. So in in oats and barley both have glucan as well. It's a different structure. So bukan overarching is a family of molecules that are all polysaccharides.

What differentiates them from one another is the sort of side branches, side branching. So there's A13, one four or A1316. And then there are some that don't have any branches.

And all of those have a different activity when you consume them in the body. So I can already hear kind of one question from probably a handful of people in the audience, which is.

I am sensitive to yeast. I've had exposure to mold. Is this going to be something that sort of triggers me? That's I mean, it's a really great question, and it's a question that we get a lot.

And so I used as a single celled organism in the beta glucan is part of the structure of the architecture of the cell wall of the yeast. So BW 85, which is our ingredient, is purified down to only that beta glucan.

That's all it's in it, except 85% of it is only that at least 85%, it's usually upwards of 90%. There will be some other molecules in it as well. Just because we don't want to.

We don't want to tear apart the structure. So the manufacturing that's done with this particular form of beta glucan is done to the highest purity possible without dismantling the whole molecule.

So but the remaining molecules are things like chitin. And there might be there won't be any DNA of the yeast in it. So and there won't be the likelihood of a reaction is very, very low.

I am a clinician, and I've worked with mold and chronic Lyme patients. And I would just as a as a clinician, I would just start low and make sure that they don't react to it.

But we've not had reports of that being a problem at all. Yeah.

Yeast sensitivity, purity, and mushroom comparisons

And really where I think I've heard I think initially about beta glucans was a from kind of mushroom sources and be in the cancer sort of therapeutic world. Yes.

So using these for cancer care. So why did that kind of maybe sort of take the headlines. Yeah. So mushrooms I mean really mushrooms are great you know.

And there are a lot of really excellent mushroom supplements and, and they're more popular because they've been marketed more is what it comes down to. Right.

But the, the mushroom molecules, it will have some of the 1316. So that specific branching pattern. But it's not ubiquitous in terms of their it's not all that that particular mushroom has kind of more broad spectrum, its broader spectrum.

And so I would put it, you know, what I think of, you know, when you have so say you're trying to put a, a Phillips head screw in and you have it's a, it's a small screw, but you have only a larger, a larger screwdriver.

And you're like, well, I don't really want to go look for the smaller one. And so you try to make it work, you know, and it will work eventually, but it's not as efficient.

And that's kind of how I think about when you have receptor binding a site. If it's not efficient, if it's not exact right fit, you're not going to get the same downstream cascade of events and it will block that receptor too.

So you then you can't get that effect from the rest of the molecules there. So it's just really about efficiency. And then from a clinical perspective, you want to know that when you take a capsule, you're going to get the same dose and the same activity each time or as closely as you can.

There's always a little bit, even in nutraceuticals, pharmaceuticals, there's always a little bit of deviation in terms of the exact quantity. But you want to get that window as tiny as possible.

And that's what happens when you have something so pure purified as, as this BW 85 is. And that was the first one and then the cancer one, I mean, this is a huge a huge field of study right now.

And, you know, cancer is I mean, I'm not exactly sure where to take the conversation, but I will say that our immune

system is largely responsible for detecting and clearing cancer from the body.

And so if the immune system is not functioning well, then you're more prone to having cancer cells sort of escape the sort of the patrol that the immune system is doing.

And what beta glucan does is wake up. We can get into this more deeply if you want to, but it trains. It's the difference between an untrained and a trained immune system.

So the same thing as if you're if you're training for, you know, whatever A6K or 10-K. Right. You don't just go and run the and expect you run the 10-K and run it well.

Right. You have to you have to do all the things in order to prepare your body for that race. And basically beta glucan can come in and work with the immune system in that way to wake it up and create broader writing this, and I'm happy to go into that more deeply if you want me to.

Yeah. And I think what I've seen too, in, in sort of ending the therapeutic nutraceutical, even the pharma world, you know, cancer obviously is a big industry, like it or not.

There's a lot of people with cancer. And it's sort of it takes a precedent, I think, with a lot of research. And I think there was just some noticing.

Oh, Beta Goodwins are, you know, have an impact on the immune system and seem to be helping, you know, with cancer and other immune related issues. And then it seems like now we're starting to get more specific.

Oh, there's different different types of beta. And so what does this one do and what does that one do. And so that's my sort of I guess where my curiosity goes with with this strain.

What is it about this that makes it sort of unique? And why would I you know, what's why is it so beneficial to take this like targeted approach with this one specific sort of strength?

So I'll give you sort of the nutshell of what happens when we consume beta glucan. So you take a capsule. This is an insoluble fiber, the form that we make.

And it gets detected in the lining of the gastrointestinal tract by the M cells. They pull it in. And so it's not absorbed. It's actually take actively taken in to the gut.

It's not digested. It's not a digestible fiber. And it there it's started to degrade the macrophages. Dendritic cells start to degrade that. And then those particles are released and they travel through our entire lymphatic system.

So the gut is a huge immune training ground for you know for obviously for local stuff in the gastrointestinal tract but also systemically. So all all of that activity then starts to disseminate out into the rest of the body through the lymphatics, including the bone marrow, and including, of course, the spleen and the thymus.

And it will travel through the entire body, making its way, making its way through the whole body.

How beta glucan trains and regulates immunity

And so actively what happens is it will bind the receptor, the natural killer cells or, excuse me, the the neutrophils and the macrophages that bind that have the in one and three receptors.

Then it initiates epigenetic changes. Right. So we're all born with genetics. But epigenetics or the environment that the genes are in are what will determine the expression of those genes.

So we can't really change our genes but we can change the environment that they're in. And Beta Buchanan works directly there on a cellular level to change the function of those cells.

And the way that I think about it. So this is what trained immunity is, is that it basically wakes them up and says and reminds them what they're responsible for and capable of doing in the body.

So where something might have it may have floated, might have floated past a cancer cell in the past. It starts to notice those things instead. I mean, that's pretty rudimentary.

We could talk about the actual science if you want to go a little bit deeper, but it's really fascinating that the the downstream effects are that it here's the, the metaphor that I really like is that if you're walking in the woods, say you have a group of kids and you're walking in the woods and your watch kind of watching over the kids, that's your job, that's your innate immune system always there or keeping an eye.

Whatever happens, the immune system, the innate immune system. So this is the older immune system. We think of it as the more like the rudimentary immune system.

But we're coming to find that it's way more adaptable and trainable than we realized. But that's always there. Now, if you're walking in there and you see a huge animal track, it's going to change everything.

You don't necessarily panic. You won't. You don't want to panic, right? But you want to start to pay attention like, oh, there's something here. This is an important signal and we need to pay attention now and that broader readiness.

So now you're watching and listening for things that you weren't watching and listening for before results in protection across the board. That's sort of up leveled readiness.

And that is how the beta glucan is like that animal track, where it sort of wakes up the immune system and says, hey, there's something to pay attention to here.

And then downstream interacts with our adaptive immunity. So the adaptive immune system will then recognize it the next time it sees it. It tags it as that's a problem. That's a problem.

But the innate immune system is always there will react to anything. The trained immunity in the middle wakes up everything and makes it more I would say ordinated.

So the whole immune system is more coordinated, more efficient, and also less prone to wildly dramatic reactions. So instead of getting inflamed, it's very precise.

It becomes more focused. And I guess is that does that answer the question? Is that. Yeah. Yeah. So it sounds like really immune regulation, right. It becomes like the primary sort of effect here.

And you know, this is what we see. We're seeing a lot more of right, which is autoimmunity. So it's for a variety of reasons. But when we have autoimmune now we're reacting to sort of similar peptide or amino acid sequences from food and you know, thyroid or myelin or any, any aspect of our body.

And then we're also reacting to foods. Right? So like so many people with food reactions. Right. And so we're the immune system. It's not that it's making mistakes.

It's essentially lost regulation. Right. Exactly. And it's and unfortunately when we're reacting to foods, we're reacting to our own tissues. The sort of flip side of that is that we tend not to be handling these things that are actually problematic, which are right, you know, pathogens of all kinds.

Right, as well as chemicals and other things that the immune system is going to need to sort of take care of and eliminate. So this is going to help with immune regulation, sort of restoring some of that function so that we're not so reactive to the things that we shouldn't be reacting to.

And yet the immune system is now more capable and directed at targeting some of the things that we do react to or

that we should said people have said.

So yes, it is immunomodulatory, right? And so and almost like it is an adaptogens for the immune system. So I mean and that's a, that's a really important point is that we don't want to come in and force the body to do anything.

In my perspective, I mean, there are times where we have to do that, right? There are emergency situations where that has to happen. But for the most part, as a nature path, I'm consistently leaning into the principle of giving the body what it needs to heal itself, and that there couldn't be a more precise molecule that does that then beta glucan, because it really educates the immune system.

We end up with immune intelligence. So that's it's such a different thing from I mean, I love all of the the botanicals and all, you know, I love all of them.

So I'm not there's no nothing negative about, say, echinacea or elderberry or things that work in a different way are straight up antivirals. I mean, I love biocides and I work there for a long time, and that's an antimicrobial, right?

And it will have a certain effect on microorganisms and push them. But this is a really different thing, which is really coming in and reminding the immune system of what it's capable of and what it's supposed to be doing, and reorganizing it in a good way.

So, yeah, well, I mean, I think about it in two ways, right? So we can think about these antimicrobials, natural or pharmaceutical. And you could say these are hired guns, right.

They'll come in and kill things. Right. Well that's that's fine. Like that. That has its place, you know, if done correctly and wisely. But the immune system's the defense. Right.

Like this is really the, the, the thing that's going to protect us long term, right? Once we lose the immune system, we die. Like that's just the reality of this, right?

And in old age, this is really what we see. Right? And it's why so many little longevity markers focus on white blood cell. You know, studying that and how healthy your white blood cells are.

Because I think we, at the end of the day, realize that that it is the immune system. That's why we're here. Right? And so the function of of course, the whole body is important, but without the immune system we're toast. Right.

So it's really keeping that regulated and optimal. It's going to protect us against any of these sort of seasonal things that we come across. Of course, any of the pathogens that are on every food that we consume, right.

It's everywhere right there on our phones that you can't get rid of them. Right. And so instead of taking this approach of avoiding pathogens and being afraid of the entire microbial world, which is kind of a fool's errand, let's actually improve our defenses and do so in a way that is is not necessarily.

Again, I think what I like about this is sort of the education of the immune system, right? It's the retraining of the immune system that that becomes so powerful because it's it's not something that you have to take beta glucan for the rest of your life in order to get the benefits.

Might still be beneficial to do that, but but the retraining of it. Right, and regaining some of the function, to me, this is as a practitioner, it's what I'm always striving for, with, with my clients and students is let's get the let's let's trust the body's wisdom that the wisdom is never lost, the intelligence is there.

And how do we sort of weight that up? How do we regain that in a proper, regulated way? Because at the end of the day, like, I don't know anybody that wants to think of a lifetime prescription to a drug or a vitamin or a nutraceutical, we might take them willingly, involuntarily, but don't want anybody to tell me you have to do this in order to be healthy.

I think that's the mindset that we want to get rid of, is that I need all these external things in order to be healthy. No, no, no, you have health within you.

It is God given. It is innate. It is your birthright. And we can use some of nature's allies to help fortify that, regulate that and improve that when needed.

So I'm curious, this is the broken brain toxic gut summit. So how does this sort of this benefit on the immune system? How is this going to help with gut health and or brain health?

Yeah, I love that you mentioned, you know, sort of the other the other aspects that the immune systems are responsible for because I think a lot of us think it's just defense, you know, are we going to get sick if we get exposure to a virus?

And it's so much more as you mentioned. So one of those things is near neurological health or function of course, gut health as well. And and as you know, and I'm sure you've talked to a lot of other practitioners here, those two are very intimately linked to one another.

I do want to say very quickly that beta glucan. So it will it will have effects that last a few months if you once you get up to the dosing. But once you start taking it, those effects will because because our immune cells turn over, they will come out untrained again in the future.

Gut barrier support and microbiome effects

If you're not continuing to consume beta glucan from some source. And that can be you know, we used to before refrigeration, we used to ferment all of our food for for to preserve it.

And so sourdough bread and any kind of fermented drink that we were using to to make sure that our water wasn't contaminated, our drinks weren't contaminated, those all contain beta glucan.

And of course, we were outside in the woods, in the leaves, in the, you know, in the dirt, in ways that we aren't anymore. And so this is something that's really been removed from our environment is this exposure to beta glucan.

So it's something that you need to be very directed at getting in your diet or if you really after the immune action, unfortunately, because I agree with you.

Nobody wants to take everything forever. Anything forever, right, is that you would need to supplement it either either from your food or from from a capsule.

And if you're really concerned about the immune aspects, then it it has to be that from the yeast from bakers, eastern brewers yeast, because it's, that's the only form that has this, this specific structure.

So I would have very bad. It's like it's it's it's voluntary right. So I mean I have no problem taking something that's going to benefit me. Like that's not a problem. Right.

It's more of this like prescription of like if you don't take this you're in trouble. Right. And so, you know, again and look, this is this is food. This is there's so many things that we must consume, like, for the rest of our life in order to be healthy.

Right. So to me, this is just kind of one of those things that, you know, is very doable. Something about plan for your totally exercises. Another one of these. Right. Good sleep Brett.

Totally. Yeah. So how does this impact the gut? So like I said earlier that most of we have I don't know what the number is right now. I've heard anywhere between 60 and 85% of our immune system is in line.

It's always changing. So most of our immune system is located in the lining of the gastrointestinal tract, in our Galt, or gut associated lymphoid tissue or lymphatic lymphoid tissue.

And that's exactly where beta glucan is received and worked with is at this gut immune interface. And it starts doing its immune training immediately in that location.

So locally got barrier support. So in the research we're seeing gut barrier support. So tight junctions are in better shape and we have fewer bacterial translocation.

So we don't want the bacteria that's in the gut getting into the bloodstream and reduced intestinal permeable as well. So that's kind of basic. Local inflammation or local immune training will guide the tissue repair in the area as well.

Which makes sense right. Our immune system is what mediates immune repair or cellular and tissue repair as well. So so just generally healthier gut gut lining.

And then it also it's interesting because the oat and the and the brand or barley beta glucan were initially thought to be the only prebiotic. So having this effect on feeding the beneficial microorganisms in the gut.

But we're actually there are actually some research now emerging showing that that even this 1316 structure through the way that it modifies immune activity, so it's more indirect, will have an effect on the microbial balance in promoting beneficial microbiome microbiota in the gut.

And that means they looked at short chain fatty acids as well. So the beneficial sort of food that feeds the narrow sites, the cells that line the gut, but also these have on their own independently of the immune action of the beta glucan.

It also is reduces inflammation in the body and has really great interaction with immune activity systemically as well. So sort of like two twofold that it works in that way.

Yeah. And I mean I think it's important right. Like what even just we take hyper permeability of the gut lining. Right. We have this sort of leaky gut.

Well the immune system is going to be trained on something, you know. And if we got leaking this there and we're not digesting our foods, well, then we're going to get these proteins that are either undigested or from various microorganisms that are normally supposed to be in the gut or that are translated, you know, transitional passing through because of food sources and other things.

Well, now, instead of remaining in the gut and passing through, now they're going to be entering the bloodstream, and immune system is going to respond to these foreign proteins and is something that is a threat.

And so that's how we can sort of train our immune system in the wrong direction. And then we start reacting to to foods and food particles, and then of course, eventually to our own tissues that have similar amino acid structures, also called cross-reactivity. Right.

So I think it's important to recognize we're training our immune system on something all the time. It's a good point and it's going to learn. And so just by that one mechanism of helping the tight junctions become properly permeable because they are naturally permeable to some degree.

Right. So if we're sort of fixing that issue, then that's going to do two things. What one is going to we're not going to train the immune system on things that shouldn't be reacting to.

And of course, that has the secondary effect of training immune system on on something that it should be reacting to. Right. So yes, exactly. I mean, that's massive, right?

I mean, we're always looking to sort of solve leaky gut, right? What can we do? And because it's such a gateway to so many issues. And again, you know, I love the teaching from our Veda, which is the century that, you know, there's so much that the gut, if we think about the gut, it's a tube.

Well, whatever's in there actually isn't in our body yet, right. It actually has not made its way into our body. And so that's where that which is what makes sense, why there's so much immune activity in the is an interface between our internal world and this external world that we're feeding through.

You know, again, it's why I love because the way they kind of explain this is they call it alma, right. But it's just waste toxins, you know, metabolic toxins, metals, chemicals, food, whatever that it essentially will go from the gut.

And if we have a hyper permeability, we're going to get this waste and toxin buildup throughout our tissues. And eventually this arm on this waste gets deposited in joints, in the brain, in various organ systems, in the system, circulatory system, anywhere and ever, even in the skin.

Right. It's going to make its way from the gut into the into the tissues of the body and the way that they get rid of it. And we sort of follow this in a lot of our modern detox protocols is that we start to we got to fix the gut like that is primary because in order to get that stuff out, sure, we can sweat a little bit of it out.

You can to some degree breathe it out. But really the primary mechanism is to go back to the lymphatic system, exercise the matrix lymphatic system, dump into the circulatory system, go through the liver and then out the bowels. Right.

So in order to sort of facilitate that and clean up the entire body, we have to have a well functioning gut in order to do that. Right. So in my programs and with my students, this is a primary thing.

We've got to fix digestion so that we're not adding to the problem. And we got to fix the gut and clean that up. Because while it may not be the you know, the famous saying is that all disease begins in the gut.

I don't totally agree with that. You know, because, you know, traumatic brain injury can cause a heck of a lot of diseases, right? And so it's not that disease begins in the gut.

But I do think it is true that the doorway to health is through the gut. That is how we regain virtually all of our function and get rid of these sort of chronic symptoms.

We got to have a well-functioning gut. Yeah. I mean, just think about the amount of toxicity and inflammation that you're preventing if you have a healthy gut, rather than having to do process it like you mentioned, through the whole body, if you can excrete it by and protect the immune system, by keeping those those bad bugs out and the all of their metabolites, right, ops and all of that, all of those.

Yeah. Yeah. So so okay, now let's tie it to the brain. Right. So with the brain, sometimes I think there's maybe not quite an understanding of how the immune system affects the brain.

We're starting to get an understanding I think in the general public of okay, the gut is tied to the brain in some way. But how is it that, you know, creating a better, you know, gut environment and an immune environment?

How is that going to impact the brain? It really goes back to, well, first is just the straight mechanism that you just mentioned, which is that when our gut lining is intact, then we the gut the gut barrier, it almost can be a mirror for the blood brain barrier.

And if you get the so that that single cell layer that protects our brain and our brain tissue from anything that's circulating that doesn't belong there.

Brain health, inflammation, and cognition

And when we have a damaged gut lining and we have leakage of pathogens or irritants, foods like you said, LPs, anything into the body, it can cause damage to the lining of the blood brain barrier.

And then we have toxins and and basically things that don't belong there, that our brain doesn't really know how to process or isn't meant to be there.

And that can cause localized inflammation in the brain, and it can create an uphill battle, again, with detoxification in the brain, which is another whole whole topic, right, is brain detoxification.

So there's that just that straight gut, that direct connection between the gut and the health of the gastrointestinal lining and the brain. There's also, again, this sort of two part. Right.

Because we're we're educating the immune system in the gut, but that it doesn't stop in the gut. So I started to talk about this. Before that the beta glucan part particulate matter will travel from the macrophages and neutrophils that consume it in the gut adjacent to the gut.

And then it deposits it in the lymphatics, and then it will make its way through the entire body. And that includes bone marrow, which is important because that's where our blood cells are generated and that's where they get educated.

So if we have beta glucan particles in the body, basically our blood, our white blood cells are born smart instead of untrained so that they're born trained.

And so they're better capable again of circulating and taking care of repair and resilience and defense and all all of the things that our mean system takes care of in the brain.

We have we do have white blood cells called microglia that are the macrophages in the brain and that we know interact also with beta glucan particulates, and they can get trained as well.

And so a very direct path that way is that the beta glucan itself will affect microglial activation or intelligence. Right. And so so that it's not over producing too many inflammatory mediators.

And so there's some important animal models right now showing that it reduces neurodegenerative. So Alzheimer's like. So they induce Alzheimer's in mice.

I'm not sure how you tell whether has Alzheimer's or not. Actions. Yeah there's another dumb mouse. But they they either do it through diet or they actually can induce it with chemicals.

Alzheimer's in mice. And they're seeing improved cognition with with the bay glucan and reduced neuroinflammation. So not a human clinical trial. The human clinical trials with that relate specifically to to brain health is things like fatigue and mood and sleep and cognition as well.

And so vigor that's kind of a kind of a general one. But who doesn't want to feel good vigor. But we're able to see that, especially in cancer research alongside.

So the cancer human cancer studies have been mostly alongside the use of a conventional therapeutic. And there's a very particular reason for that. We could go into if you want to.

But at any rate, there there's mixed right now, preclinical and human, human clinical trial and vitro research, but all of it showing this that it interacts specifically with the immune cells in the brain as well.

Yeah. So leaky gut equals leaky brain right. Like we can kind of make that association. Right. We don't have any leaky brain tests as far as I know. But you know, at least directly so but if we got some leaky gut going on, that's going to happen at the brain level.

And then I mean, look, inflammation, especially in the microglia when we get microglia activation and it's basically brain on fire. Right? I've seen many clients with this situation.

And it's this over activation of the microglia. And that's hard. That's actually hard to turn off. Right. So if if beta glucan can actually impact that and sort of calm that down, I mean, you see you see it almost overnight.

Like in other words, you see people just completely flip over to a better mood, better sleep, you know, better brain and mental activity. Right? Everything starts to shift.

And then the fatigue, the mental fatigue and just the overall fatigue starts to starts to reside. I mean, that's a it's a it's a major, major impact when we can calm that system down.

And look, I mean, this is sometimes the hard part about the brain is that we don't really know what's going on sometimes until it's sort of too late or it's over so far.

Right? I mean, this is obviously the case with neurodegeneration. It's like once we start seeing signs, well, that's probably some damage that's been happening for quite going on for a while.

And so for me it's like when I think about the brain, it's really a preventative game. You know, we really want to take whatever measures we can to protect whatever's going on the brain. Right.

And so any anything that's going to impact the brain in the natural world, to me is, is a is a huge benefit. And, you know, I think there's a lot of brain supplements out there and these type of things.

And my experience with those is generally that they're trying to sort of force or initiate a cognitive process. Right? I mean, look, we see it in our in our everyday lives, right.

Caffeine and nicotine. He's going to say things right. Like and we sort of we, we use those for certain reasons. And we think that's a benefit. But but really it's like what can we do to create a better long term environment for the brain, right.

Instead of sort of stimulate it and boost it in this sort of way. And that's really where so many of the brain supplements are. It's like boosting brain power, right?

And it's like, no, no, like we want the natural healthy function that is regulated that is sort of calm but awake. Right. Like that is really what we're looking for.

Yeah. I mean, I love everything that you just said and I, I think people think I'm I'm tired, I'm fatigued. You know, I, I don't feel good. They don't necessarily always equate that to brain.

But the brain is so often originates in the brain and brain function, whether it's neurotransmitters, whether it's inflammation of yeah, whether it's degeneration, neurodegeneration.

We don't necessarily know exactly what's happening, like you said. But so often that's why it's such a positive thing to see mood and energy levels shift.

And the other thing I was going to say is that this is such a common thing with a product like beta glucan, but there are so many products like this, and I'm sure you can relate as a practitioner that when we when someone comes in and we put like fish oil as a good example of this, where, yeah, it's grad, it can be gradual, it can be people notice a difference immediately.

Everybody's different, you know, but it can be pretty gradual that people start to to shift. And they you come in and I'd be doing my intake, you know, how are you feeling?

I don't really notice anything. And then we go back through it, you know. Oh yeah, I guess I'm, you know, getting

whatever. I'm falling asleep more easily or, you know, my, my cramping isn't as bad with my cycle or my whatever it is.

You know, it's like all of the things that we notice when we don't feel good, but when we do feel good, we forget, you know, and I'm I'm totally guilty of this myself.

I always feel like when, when I get sick, like with a cold or whatever, and I'm such a baby about it, I can't say. And I don't time for this. I don't want to be sick, you know.

And then when I'm when I feel good again, it just reminds me of how good I like, how really how good I feel most of the time. And that's the that's the best thing about getting sick for me is just remembering that I feel so good, you know, most of the time.

And that is it can be really subtle, those, those shifts. I mean, I hear what you're saying to with someone who's got a brain on fire and finding, finding a way to to shut it down.

And that's really, really important, you know. Yeah. Well, I think that's, that's a, that's a small sort of subset. Right. It's the sort of microglial activation that's just sort of brain on fire.

But but in most cases I would agree this is what I, what I typically see is it's a normalization right of, of the way we feel. And so and to some degree our system sort of remembers what it's like when we felt good.

And so as we sort of slowly, gradually return there, it just feels normal to some degree. But what I find is that usually it's the spouse that goes, oh my God, he's so different, you know, or whatever the case is.

And they're the ones it's it's the other people that notice that this person has changed so dramatically. You know, sometimes people really come alive.

The personality comes alive, sometimes they calm down. Right? It's whatever the case is. But that's where I see the most stark differences in the spouse or somebody that knows them.

That's a good point. Or the parent, you know, with the child, it's like it's so noticeable for other people. It's such a gift when that happens. And it's really, I think why we're all here, right, is to because we want to see people improve, we want to see ourselves improve and people improve.

And I think the other thing that happens is that people think it's just I mean, I've so I worked with a rheumatologist right out of school and, and one of the routine things that he would say is, well, you're it's your, you know, you're getting older.

That's why your joints hurt, you know. And and he believed that and that's fine. But he had a different perspective from mine. But I'm 52. And right now I feel better than I ever have in my entire life, you know?

And so I think there's no that's just not true. We have access to natural therapeutics, to lifestyle changes, to so many different modalities, I'm sure, all of which you're exploring.

You know, I mean, you know, aging is a real thing, right? Like, we generally, over the course of our life, function to clients. You know, we get older, we look older. That's just the reality.

But but none of us know really how that plays out. And so, you know, whatever's happening, sometimes it can be so easy to say, oh, this is just this is what it looks like.

Research, longevity study, and product details

And the reality I think that comes out sometimes surprise people is that, no, actually this is just damage and dysfunction. And we can we can restore this.

And this isn't necessarily what it looks like. I'm curious, is there any research on this, on this specific strain, human clinical trials or anything with with this structure?

There is so much research on this on beta glucan across the board. So like 20 years ago or 30 years ago, there was a handful of research. Now if you put glucan into PubMed, there are over 200,000 research articles.

And if you look just like every week, there are thousands more coming out. There is so much research available. There is a lot of research on this BW 85, which is the active ingredient in our product.

It has different names in the research, so it's hard to search that. But there is so much research, both so mouse studies in vitro and some human research trials as well.

There's a researcher, Volkov vet Vika, and he spent his entire career studying beta glucan. And he has a book called beta glucan. It's easy to it's easy to remember the name, but he goes into depth on how this works, why it works, the research.

And he consistently studies things like phagocytosis. So he's looking at are the immune cells. Does it change their activity when when it's exposed to Bay Lucan which particular beta glucans.

He's looking at IL two interleukin two which is a cytokine. So a chemical that's released from our own cells that's an anti-inflammatory. So this speaks to what you were talking about earlier which is that immuno modulation.

So we don't just see this like all of a sudden the immune systems out there creating wreaking havoc, creating inflammation. It does that when appropriate.

And it also increases upregulates or down regulates inflammation like that. Was it down regulated regulates anti inflammation. Yes. So we have kind of both arms right.

And that's what's kind of loss is that the regulatory mechanism. Because inflammation super important. Like good thing we got that right. And we also need this other arm to to sort of turn things down and when necessary.

Right. Exactly. So it speaks to that immunomodulatory effect. And then the other research that you'll see a lot in in his book is on cancer suppression.

So tumor suppression, so shrinking of and again it's not the beta glucan. So I'm not making a claim about beta glucan and cancer. What we're talking about this is how he tracks the immune activity of the beta glucan is that it's more capable of recognizing and going after a cancer cell, or primarily through natural killer cells.

Is that kind of the mechanism? Yeah, that's one of them, actually. It's very complex. But it's that and it's the complement pathway as well. So we get all sorts of different immune cells involved with the cancer that that particular cancer piece is that.

And it's a very deep science that I'm only just starting to wrap my hands around because it's so it's so deep. But it's really interesting because the that innate immunity, even though we're talking natural killer cells and neutrophils and macrophages, those are all in the innate immune system.

When they when they interact with complement the in one receptors. What's bound by by glucan and CR three receptor. And when they're bound they also have the effect of waking or of tag helping to tag something for elimination alongside the adaptive immune system.

So they work together, which is really incredible to see. You know, that to understand. It's just such a shift in what I learned about in medical school, about immunity.

It's just it's totally blew my mind when I heard about it because I'm a nerd. Well, I mean, I you know, this is what's interesting is that it's why the leaning into the natural sort of methods, I think, becomes so important because

there's the body's essentially infinitely complex, and the immune system is right there at the forefront of that.

Right? The complexity, I mean, it's so dynamic. Right. And so in some ways, I often wonder, how can we possibly study the complexity of the body? And we learn stuff and it's valuable.

And like especially the researchers and the science nerds, we can get out on some of the mechanisms and how it's all working. And I think it's also important to recognize, like this is just a snapshot of really what's happening, sadly. Right.

And so this is where as a sort of consumer or even for me as a practitioner, we can kind of just take that 30,000ft view and go, okay, it's doing something to the immune system and helping it gain in helping it to improve.

You got it from here. You know what I mean? Like how to do what you need to do. Like that's really which is same thing with foods, right. Like we can study the ins and outs of what a cucumber can do in our bodies, or we can just eat the cucumber and benefit from it.

Right? Just eat the cucumber. This is race. I mean, that's so trained. Immunity. Really? That term was only quaint. I think it's 16 years ago now, but this pattern recognition receptor and trained immunity has been going on for all of our human history for sure, and even in earthworms.

So however long that these animals have been on the planet. So exactly what you're saying is that we are constantly discovering new things. And I love that that is I mean, for me personally, that's exactly why I think leaning into the innate wisdom of the body and just offering it what it needs.

And now we know. Now we what we have found out is that beta glucan happens to be one of the things that the body is actually waiting for, and it meant to interact with.

And so that's that's what got me so excited about you asked me that. Right? I'm, I'm really excited about the opportunity to bring this science forward.

And I'm only just beginning to learn about it. And it's really, really powerful information. So pretty pretty exciting. Yeah. Yeah. I mean, and look, I think there's a certain amount of education that becomes really beneficial so that we can take the action.

Right. And at that point it's like, okay, we're good. You know, I don't actually have to consider it unless I just want to geek out. But okay, so you asked about human clinical trial.

And our company actually just put on a human clinical trial for specifically for longevity. So this was on on 40 adults. And most all of them were aging faster than their chronological age.

And after 12 weeks at 1000mg, this is a much higher dose than most people need, just for the record. But for 12 weeks on 1000mg, we saw age reversal and all of those participants were then all of them were aging slower than their chronological, more slowly than their chronological age.

And we saw biological age reversal in seven of the 11 body systems that were studied. So immune and inflammatory inflammatory markers. So really exciting that that should be published in the next few months here sometime.

And do you know how long that study was? Like how long were they taking? 12 weeks. 12 weeks? I mean, look, that's nothing, right? Like so imagine what happens after 16 weeks and three months and six years and all that, right?

Like so. Right. That's why we want to extend it and see next time you see me, I'll be like 25, 25. Exactly. Perfect. Well, Jocelyn, this is fantastic.

Tell people what the product is called and where they can find this as well. Okay. So this is BW labs is the name of the company. And right now you need to order it through a practitioner.

So that is I guess that's you and your practitioner base as well. But you want to look for the BW 85. That's the ingredient. That's the active ingredient.

And that's 85% beta glucan and the slice purity on the market. And head to head research. Our lowest dose was more effective than the highest dose of any other product.

And that's not just marketing. It's it's in that because research actually where he puts them all head to head. So beautiful. Wonderful. Again, Jocelyn, thanks for coming on today. Really appreciate it.

Yeah. Thank you so much.