



Episode 342: How to Use Enzymes to Help
Digestion and Autoimmune Issues
With Steve Wright

Child: Welcome to my Mommy's podcast.

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Katie: Hello and welcome to the Wellness Mama Podcast. I'm Katie from wellnessmama.com and wellnesse.com. That's wellness with an E on the end, which is my new line of personal care products like hair care, toothpaste and hand sanitizer that are made with safe and natural ingredients, but as effective as conventional alternatives. This episode was a really fascinating one for me and it's about a topic that I think is really just in its infancy in emerging that has so much potential for a ton of aspects of health. I'm here with Steven Wright who is a medical engineer, a Kalish Functional Institute graduate, and a gut health specialist. He personally spent close to \$400,000 overcoming his own health challenges using everything from Western medicine to shamans. And the reason I wanted to have him on today is to talk about enzymes. And we're going to go deep on this, both systemic and digestive enzymes. But these were part of the puzzle for me with autoimmune disease and weight loss. We talk about it a little bit in this episode. And the really amazing formulas that are available now were not even available when I was going through that. So, I now use

enzymes as part of my daily routine. I noticed a big difference from them. My husband uses them as well. And there's a lot of potential in the studies right now linking these with help with autoimmune disease, food intolerance, digestive issues, even anti-aging, and a lot more. So, we're going to go deep on all of that today. I think you'll find this episode extremely helpful. So, let's jump right in. Steve, welcome. Thanks for being here.

Steven: Thank you, Katie. I've been waiting for this.

Katie: Oh, I'm really excited to chat with you, one, because it's always really fun to chat with you in person or on Zoom like this, but also because you have such a wide amount of knowledge on this topic. And I think it's really important for a lot of people listening. So I wanna start broad and then kind of dial down to all of the different areas from there. We're gonna go deep on enzymes like I mentioned in the intro. So, to start off broad, define for us what enzymes are.

Steven: Yes. So, at the broadest level, enzymes are a protein that is called like a catalyst. So basically it means it speeds up reactions. And so enzymes were around, like bacteria and viruses, well before us. They'll be around forever. They're involved in everything. Without enzyme reactions, we would die immediately. But basically, they are a protein that speeds up any reaction at the most basic level.

Katie: Got it. Okay. And so I'm guessing these are things that exist naturally in the body to some degree, right?

Steven: Correct. Yeah. So, it's theorized that...if you're familiar with, like, stem cell theory, that, you know, we're born with the number of stem cells we have for our whole life or something like that, it's theorized that we're born with the amount of pancreatic enzymes, which is probably one of our biggest sources of enzymes that we use. Those are specifically usually used for digestion. But we also have, like, it's theorized up to, like, 50,000, like, hyper-specific metabolic and systemic enzymes in our bodies that are constantly just doing all these really crazy reactions. So, yeah, we have enzymes almost everywhere. We'll talk specifically, I think, here about the main systemic enzymes and then the main digestive enzymes, which is, for the most part, really all science even understands at this point and really all you should concern yourself with.

Katie: Gotcha. Okay. So to make sure I'm understanding before we go on. They think that you were born with all the enzymes...a certain enzyme you're gonna have?

Steven: Yeah. Yeah. So, specifically pancreatic enzymes. It's theorized that you're sort of born with this reservoir of them, and you use them as you go through life. You know, if you're like me and you had a while where you ate a lot of processed food or you go through a lot of stress or you have a lot of digestive conditions or other health conditions, you might use that reservoir up faster, or if you have ways in which your body gets, you know, hurt or ill, you could burn through your systemic enzymes trying to down-regulate inflammation, trying to regulate your immune system. And so there is a little bit of a debate about how many enzymes do we really get in our lifetime. And I don't think there's a true answer quite yet.

Katie: Got it. Okay. So then I guess the next question is if enzymes are a thing that we are born with, can you take them exogenously and accomplish the same thing? Because I know with certain things like the ones we make in our body might be different from ones we can consume. How does that work with enzymes?

Steven: Yes. So there's all those super, hyper-special enzymes that we're not even aware what they do, like they're probably part of almost everything, glutathione, liver detoxification. Those, we can't make exogenously. I don't even know if we've really identified them scientifically. I've never seen them in any book, and I own, I think, everything on enzymes at this point. But let's just talk about the fact that there... We have enzymes in our mouth. We have enzymes in our stomach. We have enzymes in our small intestine, and those are...where pancreatic enzymes and what's called the brush border enzymes happen. Then we have systemic enzymes. So we'll just classify them as those five areas. And basically, the systemic and pancreatic enzymes are the ones that could be in jeopardy. You could almost think about it as like CoQ10 for aging. You know, like as we age, there's just unavoidable things such as our hormones begin to die out and things like that. It's starting to become potentially clear that this is happening with enzymes as well.

And so when you start to eat a bite of food, because we'll just talk digestion first, there's amylase, which is a carbohydrate enzyme in your mouth. And so as you chew, one of the reasons why people tell you to chew a lot and not just swallow your food whole, which I'm totally guilty of a lot, is that amylase starts to work on your food in your mouth and then it works in your stomach. Inside your stomach, you have pepsin, which is a protein enzyme, a proteolytic enzyme, and that starts to work. And so while your food's in your stomach beginning to basically unfold itself and make itself available for these enzymes, you have amylase and you have pepsin working. Then as the stomach process happens, the food dumps slowly into the small intestine, at which point your pancreatic enzymes basically mesh in. They kind of dump into your small intestine, and those are a fat or lipase carbohydrate. There's more amylase in there. There's also more protein enzymes, proteolytic enzymes.

But then also you have your brush border, and your brush border are kind of like...if you could see my hand right now, I'd be wiggling my fingers like spirit fingers. And basically, there's these little hairs that cover your intestines, and these are called villi. They're part of the brush border, and these villi are, like, super important for almost everything in your gut. And one of the things that's really important is they are what secrete your brush border enzymes. And if you've heard of lactose intolerance, lactase is the enzyme that you lose or a lot of people lose anyways, and then they have lactose issues. Well, the brush border is where that lactase is made, and so there's some people who think that potentially not everyone loses lactase and that there's just some of us whose brush border is inflamed and broken.

In celiac, there's actually pictures, and this is part of how you diagnose the celiac condition, is your brush border looks like it was chopped off by, like, a road grader or something that's just all mangled and it's not really working. And so those brush border enzymes are really specific enzymes. They do a lot of, like, cellulose and they do...so, fiber and vegetables. There's all these really specific carbohydrates that they break down. And then the last group is the proteolytic enzymes, and those are mostly predominantly proteolytic enzymes

inside your blood. However, amylase and lipase do go in the blood as well. They kind of are maybe more, like, 5%, but, like, 95% of the protein sort of enzymes in your blood, they're able to be absorbed systemically when we take them exogenously, or sometimes we just absorb our own enzymes. And they run around, and they do all these cool blood cleaning and inflammation-reducing and immune-balancing things.

Katie: That is so fascinating. Okay. So there's so many directions that I wanna go from there. I think especially based on both of our stories, I can see pieces falling in place of how these can be so helpful in a lot of different ways. And you mentioned proteolytic enzymes, which...that rings a bell for me because, in the heat of my own autoimmune disease, that was one of the many things that I took that I seemed to notice a big difference from. And, in fact, I think I actually took too much too fast and made myself feel really not good for a while. Can you go deeper on what those are? You said they're in the blood. What are they doing specifically, and is there an autoimmune link there?

Steven: Yes. So, proteolytic enzymes basically just means a protein degrading enzyme. So I might have misspoke a little bit. And so what's the difference between a digestive proteolytic enzyme and a systemic proteolytic enzyme? Well, one just happens to be working on your food to break it down, and one just happens to be inside your blood. And so when we take exogenous enzymes, so when we take a supplement, if you take it with food, the proteolytic enzymes inside of that capsule will be really busy working on your food. If you take it without food, you'll actually absorb it.

And there's plenty of studies on all different types of products that show that these types of enzymes are absorbed into the bloodstream and then they begin to go to work. So, I know based on, you know, just listening to your podcast that you've done a lot of different shows on a lot of different topics, and you've covered kind of like leaky gut and gut inflammation and autoimmunity pretty well. And where enzymes fit into this scenario is when we get leaky gut, so basically where our guts aren't working properly, and different types of molecules are going into our bloodstream, a lot of times, these are where you get your food intolerances. You get your dairy and your corn, and you get your gluten sometimes and all these different things that impact us. That's a protein molecule that's running around the body now, and the immune system can't have that. And so it tags that protein molecule as like, "Hey, we have to kill this. We have to get rid of it." And so it basically puts an antigen on it, and it red flags it.

Now, this also happens with viruses, bacteria, anything that gets into the gut or into the blood vessels through the gut that really isn't supposed to be there. And now almost everything is encoded in a protein casing. So, all those microorganisms. Most everything that causes a blood reaction is a protein-like molecule. So, the immune system just tags these bad guys, right, these foreign invaders, and now this is called a circulating immune complex or CIC. This whole process is pretty normal, although it's not supposed to happen all that much. And what happens normally is your liver and your spleen are supposed to filter out these CICs, but as you know, we live in a toxic environment. Probably a lot of your listeners, you know, aren't using a lot of the toxic chemicals anymore, but it's really hard just to be a capable human of detoxing the life we live.

And so if the liver and the spleen are sluggish, overwhelmed, your immune system is kind of overwhelmed, or your gut's really messed up, you're gonna have CICs, like, everywhere. And now CICs, once they're tagged, they kind of emit these little signals saying like, "Hey, I'm bad. Hey, I'm bad. Come kill me." And these are called...one name for them is cytokines. That's kind of big right now in what people are learning about. And till that CIC is killed or detoxified, it is emitting more inflammation. But when your spleen and liver are overwhelmed, your body in its infinite wisdom, because I do think it's super wise, will grab those CICs and it'll go store them in your soft tissues to try to make them as inert as possible, right? Because we can't have our blood clogged up with all this stuff.

And so in the research, we see increased CICs in many autoimmune conditions. So that's really prevalent in lupus, really prevalent in rheumatoid arthritis. I looked into it for Hashimoto's just because I know we were having this conversation. It appears the research is less clear there. Studies show anywhere from 20% to 60% of people with Hashimoto's have elevated CICs. You can actually run a CIC blood test to check for these things. They appear almost elevated in many chronic inflammatory conditions, AIDS, different infection-related conditions. There's some new research online. And so my theory on what's happening here is that we have our weak links, our genetic weak links. And you were born with them. I was born with them. You can't escape them. And when your body's trying to save you from all these CICs, it grabs the molecules and just kind of stores them in your genetic weak links. And so if you have rheumatoid arthritis, that's near your joints, and then you end up with joint pain.

Now, the really, really cool thing about systemic and proteolytic enzymes is they go in and they break down the CICs. And they're able to neutralize them, and they're also able to even go into the soft tissues and break them down. And so that's why we have research studies on systemic enzymes showing that after, like, working out, like after, like, really intense workouts, you have less pain if you have systemic enzymes. In other words, the enzymes are removing the inflammation from even just working out. But there's plenty of usage of these in Germany and plenty of studies on rheumatoid arthritis and lupus where systemic enzyme therapy rivals various types of prescription, non-steroidal, anti-inflammatory drugs, not just your basic aspirins and things like that, but the much more powerful ones. And so they're really cool. And they also help with clotting. They clean the blood like I mentioned. And so that's kind of what can happen.

Now, you mentioned...this is really long so I'm gonna stop right after this. But just to finish the question, you mentioned that you took a lot really fast, and you might have had a reaction to them. If you had plenty of these CICs stored up because your body was trying to do its best, you can have what's called a Herxheimer reaction to using them...you know, a lot of them really quickly. And so, yeah, that definitely could have happened. And then also if people are wondering, "Well, these sound, like, really potent and kind of crazy," there's actually a whole line of cancer research that uses high-dose, exogenous, systemic enzyme therapy. It's Dr. Nicholas Gonzalez. He's passed away, but there's doctors who work underneath of his lineage. They use 150 to 180 capsules a day. So I don't know how many capsules you were using, Katie. But in cancer at least when they try to use this type of therapy, they use mega doses, and I do believe they actually work up to that as well.

Katie: Wow, that is awesome to know, and I'm guessing there's a lot of people listening putting these pieces together going, "Wow, I wonder if this could help my, you know, fill in the blank." Because it seems like we've got data, at least preliminary data on it being really helpful for a lot of things. And before we go further, I think it's also, I'd love for you to tell a little bit of your story because you also went on your own health journey and had to find your own health answers and then return to a state of health. So can you talk about the phases of your own health journey?

Steven: Yeah, sure. So I had some birth trauma. I've had intestinal issues basically my whole life, and then, you know, after college, I was a consultant at KPMG in Chicago. And I was living the super consultant lifestyle, really high stress, and I really at that point was having cystic acne everywhere. I was having my first panic attacks, I had just come out of my worst depressive episode. Every time I ate, I would have bloating so bad. I would tear up, and I was raised in a culture where boys don't cry. And so it was really hard for me to be at the office. It was really hard for me to be anywhere and have basically stabbing knife pains. And this is no matter what I ate. I was also overweight. I was probably 230 at that point. My highest was about 245, and I'm only 5-11. I'm pretty athletic but that was still pretty big for me. And so I was eating lettuce and chicken, and I was working out an hour a day. And I was doing my best to suck it up and be a man. I just started having accidents where I was missing dates.

I accidentally, you know, pooped myself on a commuter bus, and then my boss called me into his office and said, "You're stinking up the office. You have to fix this or, you know, bad things are gonna happen." And so that's when I had my final wake-up call that I needed to do something, and that led me down all kinds of awesome, you know, dietary changes that really started to change my world right away. That led me to, for instance, stomach acid, betaine HCl, digestive enzymes. Once I started to get my digestive pain away, I wanted to know why did I have to eat such a restricted diet and why didn't my acne go away. You know, how come I didn't feel great every day? And so that just led me naturally just to read a ton of scientific literature. I joined the Kalish Institute and was certified in functional medicine with them.

I just kept, you know, sort of biohacking, keep asking the questions like, "Well, why and, you know, how come?" And that's led me to, you know, shamans across the world. That's led me to all kinds of Western stuff, you know, so many supplements and kind of led me to where we are today. One of the weird things about why we're talking today is even though I had been on a specific carbohydrate diet or an autoimmune Paleo diet for essentially seven years, around year seven, I started to get left big toe pain. And at the time, I was 32. I was a "digestive health expert." You know, I was trying to be the picture of health, and I was trying to live up to this thing that I was supposed to be. And here I was having a hard time walking.

At first, I chalked it up to injuries. I tried stem cells. I tried shamanism. I tried all kinds of intense manual therapies, Eastern and Western, X-rays, all kinds of things. After I basically had done everything, even though there was something that in the back of my mind said, "Hey, that's really common for what is seen in gout," there's no way I have it. I don't fit the profile. How would I have that thing? I had a stigma around gout. And finally, one of my doctor buddies was like, "Man, we have really done everything with you." And he's the one that gave me the stem cells. He's like, "I think you really need to take this, you know, high uric acid idea seriously. There's really nothing else that would explain this."

I did, you know, because that...I was previously a backcountry hunter, and just hunting, I'd have to be on anti-inflammatory drugs. Like, I couldn't do my activities anymore. And so I started doing cherry juicing and all kinds of, you know, natural remedies for lowering uric acid and trying to support-gout related things. And nothing was working, and so I was back to like, "Man, I'm gonna have to take a prescription drug for the rest of my life that might have...it has decent side-effect profile. This isn't okay with me." And right about that time is when I was deep into enzymes because I have been just frustrated with the lack of consistency when I recommend to even you, you know, all my friends. People ask me for recommendations, and I was like, "I don't know the right brand, but I'm gonna figure it out."

And so in the middle of trying basically every brand on the market, I ran into a Ph.D. researcher who talked about systemic enzymes. He talked about a very specific thing about how they need to be activated, and when they're activated, they do miraculous things. One of the case studies he rattled off was that his form of enzymes, his form of digestive systemic enzymes, actually were very successful in some pilot clinical trials supporting high uric acid and supporting gout pain. And I was like, "Okay. Now I'm sold. I'll buy your stuff. Let me try it." You know, that's what I always do. Sure enough, 14 days into dosing them at a little bit higher dose than normal but not that high, just 6 pills, literally, this pain that I'd had for 3 years was gone. So it stayed gone. And it's been amazing. I've been able to get back to a lot of my activities. I don't rely on pain relievers anymore.

And so I can't claim that, you know, our supplement does anything else. Just my experience is one-off. You know, results are not typical. There are research studies that we've done on this. We hope to do much bigger, you know, 60, 80, 100-person trials. They've only been 10-person trials, but it's really, really encouraging. And it really opened my eyes like, "Oh, wow, maybe this is a really overlooked area of health that could help me and a lot of others."

Katie: Yeah. It's so fascinating. And I feel like this is just now really starting to be talked about, and I know you've done so much research on it. That's why I was so excited to have you on today to talk about this. Having researched my own way through an autoimmune disease and now being in remission with Hashimoto's, I keep always coming back to the inflammation piece because I think if anything, the last couple of years have really just emphasized for me how personalized health is and how at the end of the day, I found what works for me. And that definitely does not mean it's gonna work even for someone else who has Hashimoto's, I think there are pieces of that that do. But it does seem to all go back to inflammation, and I think that's a common link with a lot of types of chronic disease. And so it sounds like when we're talking about these enzymes, that's one of the mechanisms that they're acting on is to reduce inflammation in the body in various ways essentially, right?

Steven: Yeah. Correct. And I think everybody should be super skeptical, and I don't think, you know, everything works for everybody. So I'm glad you brought that up. But there are these certain pathways that do appear to be universal almost. One of these is inflammation. And the cool thing about if you have, like, a properly working digestive tract is you'll be breaking down your foods, right? You won't have these big protein

molecules busting through your gut lining, overwhelming your immune system, you know, antagonizing it. You won't have dysbiosis, which is the microbiome getting dysregulated. All of these things are related to food. My analogy is, you know, like if you had given your kids, Katie, like a scoop of peanut butter, almond butter, and just throw it on the sidewalk and let them watch what happens, by the end of the day, there's gonna be, like, all kinds of bugs. And maybe a bird will check it out, and probably a dog will find it and lick it. And like, you know, life just blooms whenever there's food.

And so if we're not digesting and breaking down the food that we eat, we're literally causing a bloom of just whatever is gonna go for it in our guts. And that increases inflammation. So one of the biggest things is just properly digesting your food can help lower inflammation. And then, yes, these enzymes are amazing once you're past that and you're trying to get into the body anywhere from, you know, just cleaning the blood out, any sort of stored CICs balancing the immune system. There's research on, like, plaque formation and, you know, heart disease, some of the risk factors for heart disease. It's just really quite amazing, their capacity to help regulate the immune system and high inflammation.

Katie: Got it. Okay. That makes complete sense. And I know, like you've mentioned food intolerances a couple times and explained kind of that gut reaction and why these enzymes might be so helpful. And I know that's a big buzzword for a lot of people listening. I've certainly been through that on my own when I first was in the thick of autoimmune disease. That was part of the key for me of figuring out how to reduce inflammation in the beginning as I had to be pretty strict with my diet and to deal with certain food intolerances.

So in the beginning, for me, I had dairy, gluten, coconut, eggs, and some others. And now I'm able to eat essentially everything except eggs without any kind of reaction. And I think for anyone who has their own food intolerances or certainly for a parent who has a child with food intolerances, that can be both really scary and really frustrating. And so I think that the fact that this can potentially offer hope for food intolerance is really exciting. I'd love to go a little bit deeper on that. Like is there a specific protocol that we're seeing that seems to help with food intolerance? And when it comes to that, can kids do this as well, or do we know yet?

Steven: You know, food intolerances are like autoimmune diseases in that they're just a complex topic, and so we can't say someone's...like, I had a dairy issue as well. I still have a gluten-type issue. I don't seem to have any others, but there is some sort of interplay between your immune system and your immune system sort of reacting to proteins. Again, remember, most people don't really know this, but when your immune system has a reaction, most of the time, like 99% of the time, it's a protein that it's reacting to.

And so while lactose intolerance is a totally real thing, and there's a lot of people that have it, my personal belief is that a lot of people are actually reacting to the proteins whey and casein that are in dairy. And one of the reasons why and how we believe food intolerances happen is your immune system wouldn't react to something or learn to react to something if it wasn't getting exposed to it and think it was bad. And so how would that happen? Well, it would happen if your gut was leaky or if your gut wasn't working properly. The belief is that we eat our foods. Let's say it's dairy or let's make it even easier, like corn is a less...not as many

people have that, but there's a protein in corn that's kind of like gluten. It's called zein, and it's just this hard-to-break-down protein basically.

And so if your proteolytic enzymes don't break it down and if your gut is a little leaky, that protein or any other corn proteins could pass into the blood. And the immune system will be like, "Whoa, that's bad guy. You know, we gotta get rid of that." And so it has this whole reaction. And so that's believed to be how food intolerances happen. How to get rid of them? You have those sort of several pieces, right? We need the immune system to kind of sort of relax but we need it to make sure it stops being exposed to it. In order to do that, we have to digest the food and make sure it doesn't go into the blood. And so unraveling that is...I don't think it's as easy as just taking digestive enzymes.

But if we think about how that process unfolds, the number one thing we could do is make sure the food is properly digested and it's never, you know, sort of in that bigger molecule. And so we do see a lot of people who are able to take the enzymes and then over time as long as they're also healing their gut...remember the gut wall has to close up and the gut inflammation has to heal up. If those two things happen, that's how I believe a lot of food intolerances are overcome. Of course, you know, there's straight-up food allergies. Those are different. That's usually something that's inherent to you. Those are usually anaphylactic in nature.

So, I'm not talking about those at all. That's a totally separate conversation, a totally different medical topic. But in this intolerance thing where it's sort of being annoyed by these foods, it does appear that if you can heal the gut lining and break the food down better, your intolerances and your diet can really expand because they seem to go away. And so the cool thing is with enzymes, you can open them up. You know, because a lot of kids don't like to swallow pills. I'm sure you know that. But you can open them up. You can put them on their food. There's no issue as far as doing that kind of thing. In the various different areas where children have issues with their guts, enzymes are pretty much used universally in the various disorders. So, yeah, they're amazing for that.

Katie: That's so exciting to me because I know when I first was trying to figure this out on my own years ago, the story I got from mainstream medicine was that, kind of like, once an autoimmune disease, always an autoimmune disease. And we don't even really fully understand what causes them, but we don't think you can get rid of them. And once there's this level of inflammation in the body, you just kind of have to mitigate. And thankfully, that's definitely not what I found to be true in my own health journey or in my research. But that's been very top of mind for me is like, you know, I had to get really sick as an adult before I started paying attention to these things.

So I'm very cognizant of "What can I be doing with my kids now that gives them the best, you know, digestive start, that gives them the best immune start that hopefully they never have to face the level of problems that I faced?" and that I know you've faced as well. I know that we're both, probably can be grateful for that because that was part of our journey and that allows us to now help other people. But it's really exciting to me when pieces like this fall into place, and we have what seems like extremely tangible evidence of the mechanism that these things work and especially when we're talking about kids.

I asked you this before we started, but I wanna ask it on the record as well. I'm a big proponent of various types of fasting. So I do time-restricted eating a lot of days, and I also am currently in the middle of a water fast just because I know I feel best when I do those relatively regularly. And certainly a lot of things you wouldn't take while fasting. A lot of supplements aren't best taken without food. Walk us through enzymes and how they can be used differently with food and without food.

Steven: Yeah. So, you know, I actually kind of do...when I fast, I actually up my enzyme dosage because I'm kind of of this idea that...you know, I've already had a lot of my own health changes, right? Like the idea of me being, you know, an NFL or a NBA, like an Olympic-style health athlete is just out the door. That ship has sailed. So, I need to do a lot of proactive things throughout my life to really feel and be the best. And so when I fast, I actually take more of enzymes, more systemic enzymes because I believe they're helping to sort of cleanse the blood as you're...you know, when you're fasting, you're totally changing the state of your body, and you're, you know, potentially dumping extra toxins or certain molecules into the blood that wouldn't normally be there. You're also not digesting, and so there's no real focus on digestion. And there's a lot of focus around immune and cellular health. And so part of that whole process of autophagy and everything is protein destruction and protein degradation and protein recycling. I actually up my enzyme usage during fasts in order to try to just basically have as much of a cleanse as I can.

Yeah. The big thing is basically like are you taking the enzymes with food or without food? Like what's in the enzyme, and so the actual enzyme products. So, as I mentioned earlier, for a digestive enzyme, you really wanna be taking a product that includes both pancreatic enzymes and brush border enzymes. If you're not taking one with both, and you're experiencing any health issues or any gut upset at all, and you're like, "Man, I don't know if this product's working," like, there's really no way...there's no tests that I'm aware of for you to know if you're having a brush border enzyme problem or a pancreatic enzyme problem or both. And so my belief is you should take a product that has both of them covered so that, you know, whatever your body's, you know, hiccup is or issue, you got yourself covered. Now, you also want that product to be higher in protease, and you want it to be basically, like, 100% pH coverage, and you want it to be activated. If those things happen, then it can be used systemically as well. And so what does that mean?

So basically, pancreatic enzymes work in a very small window of pH, and pH's, like, acid-base balance. The stomach is very acid. The intestines are actually more basic or a less higher pH. Excuse me. And so animal enzymes like pancreatin, nothing wrong with them. You have to understand their limitations. And so pancreatin only works in a very narrow pH, and so if your stomach acid is off, if it's low, if you're stressed, if you have, like, H. pylori or these other infections, the chances of your pH being perfect so that your enzymes turn on and that work is just kind of, again, you're sort of leaving yourself open there for products to not really work and get you the intended benefits. And so I really like more fungal-based enzymes because they have 100% pH coverage. So they work from 2 to 11. Like, ours work from 1.7 to 11.6 or something. So it's basically your whole body's range. You really wanna get a product that's activated.

Now, of course, I'm biased. You know, our product has a patented activation system. I literally tried 28 different products from almost every brand last year, trying to figure this out for myself. And I wouldn't have settled on this and I wouldn't have worked and licensed this from the Ph.D. guy if I didn't fully understand enzymes now and how they work. And so basically, enzymes need energy to do their work, and so they need what's called a cofactor. And for enzymes, that's a mineral. And so basically, minerals donate energy to turn on enzymes. And so if you take a product that doesn't have a mineral activation blend, you're gonna have to steal nutrients from your food, or you're gonna have to rely on stealing nutrients from your body to turn them on.

I finally realized that was the thing. Why did some days the enzyme work and other days the enzyme didn't work? And why did some brands work with some people but other brands didn't work with that same or with...like other people like them? I really believe it comes down to this thing of the quality of the enzyme and then, is it activated? Because if it's not activated, it's sort of, like, inert almost like, you know, you just need it to be turned on to work. Otherwise, you're taking the chance that it might bump into something in your food and turn on. And so that's why I'm such a big proponent of holozymes and this AES absorption system.

The Ph.D. guy had to do six pilot trials because the patent board was like, "Yeah. Okay, man, you know, this is sort of unprecedented science. Like it sounds cool, but we don't believe you." So he actually had to do these pilot trials to prove that this enzyme product works both for fat, carbohydrate, and protein and that it's absorbed systemically and it begins to help with a clotting factor. That's all been done in those pilot trials. Of course, we need much more research on it. But as far as enzyme product goes, I'm actually not aware of any other enzyme products except for Wobenzym that have done this kind of research. And so Wobenzym is kind of like the systemic enzyme of choice if you're just gonna use a systemic enzyme, but it doesn't have any of the digestive stuff. Ours has both your pancreatic, your brush border, and your systemic nature.

Katie: That's super helpful to understand. And I will say just as a plug for you guys as well. I very rarely notice an immediate difference from supplements and I've added this to my routine, and I do notice, like my digestion, and I notice a difference from taking it, like a noticeable difference. You know, it wasn't available when I was in the height of my autoimmune disease. Although I wish now that it had been. It's so exciting to me that we have tools like this. Are there any risks or contraindications people need to know about when it comes to taking enzymes? And if not, what does good dosing look like, especially if we're talking about yours specifically?

Steven: Yeah. There's no massive risk. Of course, you know, always check with your doctor. For instance, Wobenzym has the most systemic...the most, like, research in the world on it, and it actually is even used in infertility trials. There was, like, a study of 141 people in Germany who are women who are infertile, and they used systemic enzymes to help them get pregnant and much better than the control group and stay for the whole pregnancy term. So, they've been studied in kids. Our brand hasn't been, but enzymes, in general, have been studied in kids. They've been studied in pregnancy.

The only real big thing is there's an enzyme called nattokinase and it's a really cool Japanese systemic enzyme that's specifically cardiac function. It rivals some specific, you know, cardio-related drugs as far as efficacy for blood pressure, for clotting, things like that. And so it does appear that, like, if you megadose that, there's some concerns around if you're already on a blood thinner. But just general usage of regular products like Wobenzym or holozymes or something like that, there shouldn't be any, but, of course, check with your doctor.

So, dosing. Dosing is really kind of up to you. So like I said, the upper limit of dosing that I'm aware of is like...would be, like, 150 to 180 pills a day. That's a lot, and that's for very specific cancer-related protocols that Dr. Gonzalez does and his lineage does. What I've seen is that most people use two to six capsules specifically of holozymes per meal and then on an empty stomach. And they can see, like, really amazing results. Why the range? Well, it just depends, like how...do we know your pancreatic function? How long have you been sick? You know, what kind of food are you feeding yourself? How stressed are you? How's your stomach acid? All these things make a difference in your capacity to break down food and how much digestive enzymes might you need.

And then, again, on the systemic side like before bed or in the morning, you know, what are you looking to do? Are you just taking this as an anti-aging supplement to keep your blood clean, to keep everything flowing well, to keep inflammation levels low? Then all the studies that the Ph.D. guy did were only two pills before bed. But if you're specifically trying to get better athletic performance, if you're specifically trying to work on some sort of health condition that you think might be helped by this, then I would recommend doing four to six on an empty stomach for at least a month just to see what happens. You can always go down, or you can go up.

We do have some people who end up going really, like, more on the 10 to 14 range per meal, but these are people with known gastro issues like gastroparesis where their stomach doesn't actually dump very well or at all into the intestines. And so these should be really guided by somebody who knows what's going on or if you have... Another way that it's working is it is for people to, you know, help with their occasional heartburn or occasional acid reflux or something like that if they're looking for an alternative, which, again, I can't say that this is an alternative. I can just tell you that, you know, some people who buy our product are using it in those dosages for those conditions.

Katie: Gotcha. Yeah. And I think you highlighted a really important point, which is at the end of the day, like this can be used for so many different things like a lot of these tools can. It really does come down to each of us taking the initiative to experiment and try things and try them for a long enough time to see if they have an effect. And this is one that I'm really excited about right now, like you mentioned, just for the anti-aging side and for keeping any potential future autoimmune things at bay because I know, like once you've had any kind of inflammatory condition, your chances of having them in the future is higher. And so I'm very cognizant of that and still try to keep my inflammation low, even though I now am much more relaxed with my diet and my lifestyle than I had to be in the very beginning.

But I think the anti-aging part is also really exciting to a lot of people listening as well. And I think we're probably gonna keep seeing more and more on this. But it's a pretty easy thing that seems like we can add in and try without a lot of risks, which is really, really exciting.

This episode is brought to you by Wellnesse. That's Wellnesse with an E on the end, which is my new personal care company that is dedicated to making safe and effective products from my family to your family. We started with toothpaste and hair care because these are the biggest offenders in most bathrooms, and we're coming after the other personal care products as well. Did you know for instance that most shampoo contains harsh detergents that strip out the natural oils from the hair and leave it harder to manage over time and more dependent on extra products? We took a different approach, creating a nourishing hair food that gives your hair what it actually needs and doesn't take away from its natural strength and beauty. In fact, it's specifically designed to support your hair's natural texture, natural color, and is safe for color-treated hair as well. Our shampoos contain herbs like nettle, which helps strengthen hair and reduce hair fall, leaving your hair and scalp healthier over time, and scented only with natural essential oils in a very delicate scent so that you don't have to worry about the fragrance as well. Over time, your hair gets back to its stronger, healthier, shinier state without the need for parabens or silicone or SLS. You can check it out along with our whitening toothpaste and our full hair care bundles at wellnesse.com, that's wellnesse.com. An insider tip, grab an essentials bundle or try auto-ship and you will lock in a discount.

This podcast is sponsored by Four Sigmatic, my source for superfood mushroom products that are a big part of my daily routine. In fact, about 80% of the dirt under your feet is actually mycelium or mushrooms. And mushrooms have a wide variety of health benefits, everything from immune support, and improved sleep, and they're also a great source of B vitamins, and vitamin D. Mushrooms are considered anti-inflammatory due to a compound called ergothioneine and are considered safe and beneficial to consume regularly. In my house, we often start the day with Four Sigmatic's Mushroom Coffee with Lion's Mane and Chaga. It tastes just like regular coffee without as much caffeine and no jitters. The Lion's Mane and Chaga help with energy and focus, like I said, without the jitters, or the acidity of a lot of coffee. I sip other products of theirs throughout the day, like their Chaga or Cordyceps or Lion's Mane Elixirs, and I often wind down at night with their Reishi Elixir or Reishi Cacao, and I notice a measurable difference in my sleep when I do that. As a listener of this podcast, you can save on all Four Sigmatic products by going to foursigmatic.com/wellnessmama and using the code "wellnessmama" to save 15%.

And real quick, I know I have a link right here. I'll put in the show notes as well. It's healthygut.com/wm. And I know you guys are giving a discount on any order. But just talk about the products by name and a little bit more specifically. Because, like I said, these are ones that are now part of my routine, and I wanted to make sure I could share them with the audience today.

Steven: Yeah. Yes. The enzyme product that I've been talking about is called HoloZyme, and it's the world's most activated enzyme formula. So it is patented. We also have our, you know, dual-strain, four-times concentrated active blend. Our enzymes are made in the U.S. They're pharmaceutical grade, 100% clean, no

fillers, no additives. And so, yeah, we're giving \$10 off to try it. I mean, I think whenever you're trying something new, I think it's always great to save a little money when you don't know if it's gonna work for you. But we also, you know, just being somebody who's been sick and consumes a lot of supplements hoping for results, you know, kind of being like, "Oh, maybe this one, or, oh, maybe this one."

We're also offering a 180-day refund on all of our products at any point in time for any reason. And I just know that because not everything works for everybody. And if you don't notice the difference, I mean, maybe you'll buy into the research to use these systemically for anti-aging or just with digestion. But I would just wanna make sure that there's no risk, and if anybody has any issues with the product, we always just, you know, go ahead and give the money back because I know that if you're listening to this podcast, if you're following me or Katie, you're trying really hard to have, you know, a really healthy life, really healthy lifestyle. So, I'm super into, like, just encouraging that and encouraging great use of your money when it comes to those things. Yeah. And then we also have HCL Guard. Are you using that, Katie?

Katie: I am. But to clarify, that one is to be used only with food, correct? You wouldn't wanna use that while fasting?

Steven: Correct. Correct. So HCL Guard is our, also a new product, never been done before. It's a stomach acid supporting product. It's for people with low stomach acid. And it's correct. There's literally acid powder in the capsule. So, you never open the capsule. Only take it with food. It's not as universal, but for people who are over 50, you have about a 50% chance of having low stomach acid. Sadly, stomach acid's really related to aging and hormone health. And so as we age, stomach acid declines is what the studies show. And so if you're having any gas, burping, constipation, diarrhea are occasional, those things are all occasional. Again, HCL Guard does not treat any medical conditions. HoloZyme does not treat any medical conditions. But if you're having struggles in those departments, they can offer support. And, yes, so it's pretty cool.

It's the only stomach acid formula on the market that includes organic ginger, which is a prokinetic. And many people might have drank ginger tea when they've been having an upset stomach. And so the ginger is anti-inflammatory. It helps support the healing of the stomach, but it also helps the food start moving through your body. And then we also include intrinsic factor, which is kind of like the bouncer for B12. It turns out B12 is a really fragile compound, and it needs support to get into the bloodstream. And intrinsic factor is part of stomach acid naturally, but if you're not making enough, then you're not gonna have enough to get your B12. And so we're the first company to bring that to market. So, I'm really excited about them mostly because I've been using everybody else's brands for 10 years, and I just got fed up with not getting the consistency that I wanted. And so I'm glad that you're using them, and I hope, you know, people check them out. And I just hope it supports them, honestly.

Katie: Yeah. And I'll say the cool thing about HCl. This was a big part of my husband's recovery. He had his appendix rupture and then had a secondary infection and tons of antibiotics, and this was years ago. But we spent years kind of undoing that damage in his gut, and HCl was a big key for him for a long time. And he's been able to taper down now, and I've also just recently ramped up my protein intake a lot because I started

lifting weights again after losing a whole lot of weight. And so that's been helpful for me is I've added in a lot of protein, and I know HCl can help with protein digestion as well. Can you explain the idea of an HCl challenge and how people can use that to figure out how much they need to take if they need to take it?

Steven: Yeah. Yes. So you might be asking a question like, "How would I know if I have low stomach acid?" Well, you can go and get a test if you have, like, a super-advanced doctor. There's not many of them in the entire world left. But there's something called a Heidelberg test. There's also a gastro capsule test. Normally, these are like \$300 to \$600 out-of-pocket, and you have to find a specialty provider to do them. So, I'm just gonna go ahead and assume you don't have time or money to spend on that because you can just spend a little bit of money and try an HCl supplement and do this HCl challenge, which is the best way to figure out if you have low stomach acid.

And then you might be wondering like, "Well, what are my chances?" So, Dr. Jonathan Wright is one of the physicians who does stomach acid testing. In his clinic, he said there's probably 90% of people he tests with IBS-like symptoms have low stomach acid. The other 10%, they have all the same symptoms, but 10% have regular acid or high acid. Dr. Steven Sandberg-Lewis, he's a professor of naturopathic gastroenterology. He's written some books. He's out of Portland. He does the same tests, and he says it's about 80/20.

And so your chances if you have digestive upset are kind of high for this. The fastest and cheapest way is to buy an HCl product, ours or somebody else's, and you basically do this HCl challenge. So you have a meal that has some protein. It could be vegetable protein. It could be animal protein. It doesn't matter. It's better if it's not, like, just a protein shake, right. Because a protein shake or a smoothie is essentially already pre-broken-down food for you. So you don't need much acid or enzymes or anything to do much with that, but just a normal meal. You take one capsule. Most people don't notice anything. And if you don't notice anything, that's pretty much a sign that you have low stomach acid, right? Because you just took a pill that had acid in it, and you didn't notice anything.

And so how the HCl challenge works is you just keep adding one pill per relatively normal meal for you, and at some point, you're gonna feel some sort of hotness, maybe some sort of burning in your mid-chest. Maybe you're gonna notice a change in your stools, like maybe your stools get better, but then they go more loose or diarrhea-like, anything like that. And I would pay attention more to your gas, bloating, your stools, the toilet, what's going on there than I would the heat sensation because getting to a heat sensation is not really always needed.

What we're trying to do is just get you a perfect poop. And if you've never heard of the Bristol Stool Chart, you can google that. You're trying to get to a four or five on the Bristol Stool Chart every single day. And so HCL Guard is...and other HCl products are a great way to make sure that happens. So, anyways, with the HCl challenge, you'll reach a number. Like, I don't know about you, Katie, but I actually was part of the people who don't get the burn. So, I one time did, like, 15 pills back when I was really sick, and I was like, "I don't notice anything." And then I had, like, a lot of loose stools, and I was like, "Oh, okay, I think that was too much."

So, anyways, I took about eight or nine capsules once I realized that you could just do this based on how you're feeling and you didn't have to find the "burn." Yeah. I took around eight or nine, and then I was slowly, like your husband Seth, I was slowly able to back down as I healed until I was off HCl for three years, and then I'm back on it now just because of the stress in the world and just everything that's happening in my life. Stress is crazy high, and so I just realized, "Yeah. I'm not making stomach acid anymore."

Katie: That's another key point, I think, that you just brought up is not only is health very personalized and individualized and we each need to take ownership for our own health and figuring out what's gonna work best for us through experimentation, but it's also constantly changing. I feel like figuring out what works for my health right now is great for right now, and then by next month, it's often totally...you know, like where it's always an evolving concept. Like we talked about earlier, I think, in general, there are some things that seem almost universally beneficial, and that's why I'm excited about enzymes is it seems there's so many different uses, and I think we're, like you said, just gonna keep finding out more and more. So I'm really excited that you're pioneering this and making these available right now. Like I said, I'm a big fan. So, I appreciate you being here to educate today and explain. And to switch gears a little bit, a couple things I love to ask at the end of interviews, just first being, are there any books or podcasts or sources of inspiration that you're loving right now?

Steven: Right now. You know, my favorite book and something that I always return to is "Man's Search for Meaning." You know, if you're not familiar with it, it's a first-hand account of a psychiatrist going through the concentration camps in the Holocaust. And it's just so humbling. I try to read it twice a year every year to realize that, you know, what we're going through right now as a society is unprecedented in our lifetimes. It's intense. It's scary. It's so many things. And yet there was lots of other times in human history where, like, much worse happened. And then also, like, how did those humans deal with that intensity? And how can I apply that till now?

Katie: I'm also a huge fan of that book, and I think, like you said, it's very timely right now. People have been through much worse, but it's a great opportunity if we look at it this way to find that deeper meaning and to go reflect and to pause. So, I love that. I think that's perfect for right now. And what are you excited about in the future? Obviously, enzymes but anything else that's exciting to you right now?

Steven: I'm really excited about where the field of gut health is going. You know, in general, I think we're gonna learn so much in the coming years about the gut-brain access. I'm really excited about, like, gut trauma, gut trauma brain, those types of things. I think there's just so much that's gonna come out around how potentially even the pharmaceuticals that we use for the brain are actually working in the gut. And I think we're gonna learn so much more about leaky gut syndrome, zonulin. There's a bunch of new papers that just came out in the last two weeks about this, about substances called short-chain fatty acids. These are super cool. They come from a lot of your fibers and your prebiotics, but you can also supplement with butyrate. And it's got some really cool upcoming research. So, you know me. I'm super into the brain stuff right now. I'm very into, like, the gut, you know, meets all these other conditions and how is that happening.

Katie: Very cool. I have a feeling we'll have to do another round, you know, at some point in the future as things continue to develop, but for any of you guys who want to try all the stuff we talked about, again, check out the show notes at wellnessmama.fm or healthygut.com/wm to get the discount. Yeah. Steve, it's always a pleasure to chat with you. I love the work that you're doing, and I'm very grateful for these products and happy to share them today. So thanks for being here.

Steven: Yeah. Thanks, Katie. Thanks for letting me educate people about enzymes. I'm very excited about them. I'm glad they're helping you, and thanks for all the hard work you do.

Katie: And as always, thanks to all of you for listening and sharing your time with us today. We're so grateful that you did, and I hope that you will join me again on the next episode of "The Wellness Mama Podcast."

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