

Intro: Bulletproof Radio, a state of high-performance.

Dave: You're listening to Bulletproof Radio with Dave Asprey. Today's cool fact of the day is that there's a new study out there that quantified the link between smoggy air and diabetes. According to this study, air pollution caused 3.2 million new cases of diabetes worldwide in 2016. That's coming from fine particulate matter, the stuff made by cars and factories, and chemical reactions in the atmosphere, the stuff that hangs around this haze and makes air hard to breathe. It's already been linked to chronic conditions, like heart disease, diabetes, but no one's really measured the connection. This is a pretty big study. They tracked 1.7 million US Veterans for almost a decade and assessed their risk at developing diabetes. They used data from global studies on diabetes, as well as air quality data from the EPA and NASA, created equations at this stuff, and they think air pollution is responsible for 14% of diabetes worldwide. There's other things like genetics, weight, activity level, and diet that clearly influence your risk, which is rising globally. There's about 422 million people now diagnosed with type two diabetes up from 108 million in 1980. That's pretty scary stuff.

It's interesting. It wasn't the same around the globe. Countries with the worst air pollution, like Pakistan, India, and China have more levels, or they have higher levels, of air pollution link diabetes. The US, which has relatively clean air, though, is also high on the list, partly because we have indoor air pollution here that's pretty gnarly. What that means is we'll do lots of different small things that decrease your risk of diabetes. Things like sleeping at night reduces your risk, lowering your exposure to blue light, maybe even using an air filter, or maybe even having good digestion. Speaking of digestion, I'm gonna tell you a few things about that on this show today. You're gonna learn a lot. That cool fact of the day, by the way, came from The Lancet Planetary Health.

If you like the show today or any day, I would love it if you took about 10 seconds, went to [Bulletproof.com/itunes](https://bulletproof.com/itunes), which will take you directly to Apple's page where you can leave a review for the show. There's been more than 500 episodes, thousands of hours have gone into researching the show and putting out new information that hopefully you haven't heard somewhere else. If you like it and it's worth your time, I'd love it if you left a review.

Speaking of digestion, this is something that I've struggled with for years when I was obese, when I weighed 300 pounds. I was technically able to clear a room in at least 10 seconds, which was really a problem when I was trying to date in high school. Let me just tell you. This was actually a serious issue for me of the gas, the acid reflux, and all sorts of problems to the point that I just didn't understand what was going on, but I knew it was in my gut. This was probably compounded by the fact that I had been on antibiotics once a month on average for about 15 years, thanks to chronic sinus infections and chronic strep throat, which are hallmarks of environmental water exposure.

Basically, I dropped a bomb in my gut, ruined my gut bacteria every single month for years, which affects autoimmunity, allergies, digestion, all sorts of things. You fast forward now, after all these years of biohacking, and today, I'm somewhere around 11-11.5% body fat, feeling really good, and, well, I don't think I could clear a room if I had

to, unless you gave me a whole bunch of cheesecake or something, in which case, well, I deserve it.

On this episode today, I've got two guys here who are really digging in on what's going on inside your gut. The two guys I'm going to interview are the founders of BiOptimizers, Wade Lightheart and Matt Gallant. Wade is a former three time Canadian natural bodybuilding champion, and Matt is an experienced strength and conditioning coach for pro athletes, a self-defense instructor who is in ketosis most of the time, and he's been working on supplements for more than a decade. Both of these guys look pretty darn amazing, and both of them have very deep knowledge of human performance, which is why I wanted them on the show. We're gonna talk about some of the stuff that goes on in your gut that you probably don't know about, including probiotics, healthy gut bacteria, the role of enzymes, which is something that I think is often overlooked in health and nutrition, and we're gonna dig deep on that stuff. Guys, welcome to the show.

Wade: Great to be here.

Dave: All right, that was Wade talking.

Matt: Super excited to be on the show, man.

Dave: And that was Matt. We are here at Bulletproof Upgrade Labs Alpha on Vancouver Island all in person, which means we're gonna have a really cool interview 'cause I always like getting to meet people in person. Thanks for coming up.

Wade: It's great to be here, Dave. I mean, we're just kind of blissing out in the optimization zone here. It's upgraded everything, the features, the functions, all the gear downstairs. This is a playground for biohackers. I mean, I know I can hardly contain myself. I can't wait to do this interview, as well, maybe play on some of this gear.

Matt: Yeah, all the way from Panama, I gotta say I'm a little jealous. I'm like, this is definitely a future home for me, just all the gear, all the fun, a beautiful place, so congratulations on your-

Dave: Oh, thanks, Matt. It's kind of fun. People don't really know I live this stuff. Since I'm up on an organic farm, having access to the tech that I believe is going to help me live way longer than Mother Nature wants me to is kind of important, and I perform better. I feel better. You guys have done a lot of the biohacks that are here, things that I do with my various companies, and so I appreciate you just making the trip up 'cause Canada is like a whole nother country.

Wade: Yeah, it really is.

Dave: Says our other Canadian here. All right. I wanna know how we got a vegetarian bodybuilder. Are you still a vegetarian?

Wade: Yeah, although I really hate labels because I think everybody goes through a dietary evolution, and so this is where a person might be at a certain period of time, and it can always upgrade, always change, always evolve, and I think it's really important to be flexible in how one approaches things that we don't get locked into a paradigm box that limited us.

Dave: Tell me you don't eat bacon.

Wade: I don't eat bacon. I'm sorry.

Dave: I thought you looked weak. I'm saying this to a guy who could crush my head in his bicep, see.

Wade: Maybe if I ate bacon, I would be even better.

Dave: I'm totally kidding. All right, so what drives that? Is that health and performance driven? Is that animal? What's your thought behind that?

Wade: I think we share a similar idea, and that is a certain amount of curiosity. And so, I grew up, like every Canadian boy, in a very rural environment, wild game, growing food in a garden. I went to University, and I started to notice there was an effect on my health, just by switching from what I had at home to what was in a University setting. That was an eye-opener when I was studying exercise, physiology, and nutrition. I didn't understand it. That was a long time ago. I started on that evolution. About 10 years into my body-building career, nobody was doing this as a vegetarian. It was virtually thought it was impossible. I read a book, called The Holy Science, and it was a guy talking about the nervous system and the digestive system. He was talking about meditation and vegetarian diets. I said, you know, I'm gonna experiment with this for a couple of weeks. I did it for two weeks and I said, well, I'm gonna experiment for two more. I thought I was gonna dry up and blow away.

After a month, I didn't. I was kind of like, "Okay, I'm still alive." I went another month. After two months, I just stopped doing it and I said, I want to see if I can actually win championships, if I can be a successful competitive athlete on a plant-based diet. It turned out all right, and I ended up winning a whole bunch of contests, and went to the Mr. Universe and world championships. Back at that time, that was unheard of, and then that started a pattern of behavior of looking at optimization from a different perspective, but I think what's different about me is I'm not one of these vigilante vegans that says, "Everybody's gotta do this, and don't kill the animals," and all that stuff. That's not what it's about. It was just about going in a direction and pioneering in a direction, and just see where it could go.

Dave: So, are you vegetarian or vegan?

Wade: I classify myself as vegetarian.

Dave: Got it. I find that people perform reasonably well as vegetarians. Some people totally kick ass, but having some of those animal dry fats, particularly dairy fat and some of the omega-3s seems to be pretty important, maybe some eggs. But if you're just doing the pure plant thing ... and I was a raw vegan for quite a while because of enzymes, believe it or not.

Wade: Well, I was a vegan for two years.

Dave: Oh, man. It didn't wreck you the way it did me? Man.

Wade: Well, that's what led to the development of the digestive experiments 'cause I needed a way to optimize the amount of protein I was converting into amino acids because, I mean, I'm competing at a world championship on 85 grams of protein a day when my competitors are doing 250, 300, 350. That's what got me into that whole digestive idea of, how do I optimize my digestion and make that functional with the diet I had? Then ultimately, socially, as you know, raw food diets are very difficult socially. I mean, you're the weird guy in every room.

Dave: Totally.

Wade: And not the cool weird guy.

Dave: Right.

Wade: Eventually, I opened up the gates that allowed me a much more flexible and socially acceptable lifestyle. I do believe that there's some additional health benefits, just because with any specialized diet, you have to be so meticulous. I believe that when you upgrade your health and your vitality, it should increase flexibility or options, as opposed to decrease.

Dave: I would agree with that. I encourage everyone listening to find what works for you. There may be some blood type, but more likely some other genetic things that determine whether you do really well in that. I'll tell you, if you are doing body-building on 85 grams of protein a day, protein utilization is going to matter. But if you look at what happens to people who are eating hundreds of grams, particularly of whey protein and these other casein and things like that, or even just steak, they're not going to end well. We know what excessive methionine, cysteine, these other amino acids do. That's why moderate protein, grass-fed, organic, and I eat vegetarian or fish when I go out, not farm fish, either, 'cause I don't eat industrial animals. It's bad for the animals. It's bad for the planet. It's bad for your gut because you get the antibiotic residues that mess with things. I actually really like having function gut 'cause I never had it until I was about 30.

Wade: Wow.

Dave: All right, so that's how you got into this. Now, Matt, you're a martial artist.

Matt: Well, I'm a kinesiologist. I actually got a degree in the science of physical activity.

Dave: Okay.

Matt: Both Wade and I are personal trainers for about a decade and that's how we met. I was a trainer back in Moncton, New Brunswick where he's from. He was living in Vancouver, came back to see his parents. We met at the gym, and then I say, "Hey, I want to move to Vancouver." Moved to Vancouver, became one of the busiest trainers at World's Gym downtown.

Dave: Are you also born in Canada?

Matt: Yeah.

Dave: Oh, so you're both Canadian?

Matt: Yeah. Both.

Dave: Presuming that I was thinking you moved to Canada like I did. Okay, call.

Matt: Yeah. Canadians. Lived in Panama though. I can't take the cold anymore. Yeah, then met Wade and of course I was doing keto and he was doing vegetarianism, and-

Dave: Did you guys get into an arm wrestling match?

Matt: Well, a lot of psychological ones, yes.

Dave: Who won?

Wade: Yeah, I think we both won because I think, what's really interesting about the internet is to create these kind of tribal communities that re-affirm biases in a lot of ways. One of the things-

Dave: Hold on. Do you mean the Keto Brothers or the Angry Vegans? Which one?

Wade: Yeah. Exactly. One of the things, that I think, we celebrate, Matt and I is that we test each others ideas, and we do come from very different spectrums. The exchange of ideas, I think is what separates us. We welcome a little bit of conflict or a little bit of challenging and in having that because if you look at history that was how great minds came to conclusions. It wasn't about, "I'm better," or you're better. It was about, "Let's go for the truth," or, "Let's find what's the middle ground, or what's the best ground and surrender the position once it's been proven by the data to be supported."

Dave: Well, by the data and the experience. What drove me nuts as a raw vegan like, "Well, the data says I'm getting my enzymes, it says it should be working and I am losing weight, and I felt really good last month, but now I'm breaking teeth, and I'm getting autoimmune issues, and I'm cold all the time no matter how much I eat." And at a certain point, "Okay. This isn't working. But I'd just have raw meat back in [inaudible 00:12:58]. So, I was a raw omnivore for a while, and I felt so much better when I did

that. And it was when I went to Tibet, and Nepal to learn meditation from the masters, like, "I'm not eating raw yak that's been hanging on someone's porch for a while. I'm pretty sure I'm gonna cook what I eat in this country."

And I just realized that, that's what works for me, but massive protein is not good.

Matt: Yeah. And that was a thing, as you alluded to it earlier, there's some genetic differences where Wade can eat a lot of carbs and it works really well for him, it's proven. For me, I just get fat. And for me Keto is magic. It's always worked. And I've just embraced that. But the one thing that we did find that worked really well for both of us, we met a doctor named Doctor Michael O'Brien, and spent some time with him. He taught us about enzymes. We tried a massive amount of enzymes for 90 days. We both transformed. We both gained muscle, both lost fat, skin improved, our brains improved, and we're like, "Okay. This works."

And I think that really helped Wade as well especially as a vegetarian body builder 'cause a lot of vegetarians, the issue is they're not getting enough amino acids 'cause vegetarian protein tends to be difficult to break down, and they're not getting that much.

Dave: And plants make protein to keep animals from eating them, mostly. They don't want that to be highly bio available because that would just make them more attractive to predators not less attractive.

Matt: Yeah. And then Wade was winning some natural body building championships. I was studying marketing, and I said, "Hey, let's package your information." That was 15 years ago. So, we've been actually in business for 15 years.

Dave: Alright. Let's talk about the two big areas where you got so focus. Let's start talking about enzymes. Tell our listeners exactly what an enzyme is.

Matt: Well, first of all we all have an enzyme bank account in our bodies, and we do have about 25,000 different functions in the body. Everything from thinking to blinking, enzymes are involved. They're the ... we can call them the catalyst that kick start chemical, biochemical reactions in the body. When we eat food, we need to break that food down. So, our bodies can use out enzymatic bank account to break that food down.

Now, going back to your raw food story. The whole theory around raw food is, "Hey, if you eat raw good, there's enzymes in the food, and you don't need to use your body's enzymes," which is true but the challenges in today's world from the pesticides or herbicides, the fungicides, which kill enzymes in the food. So, even if you're eating organic a lot of times, it's still been sprayed.

Dave: Or there's this residue from the crop next door.

Matt: Right. Or there's not that many enzymes to the food because of the way its formed, or because the soil is dry of minerals. The problem is, a lot of times it's difficult to get the enzymes. And when we cook food, there's definitely an enzymatic cost that our bodies experience as a result of it.

Dave: Now, a lot of people don't know this unless they remember something from biochemistry in high school, or they studied in college, but if you have a chemical reaction, it usually takes a lot of energy, you have to cook something on a bunsen burner, or something like that, or you add a small amount of the right enzyme and magically it takes far less energy to make this happen. And this is the different between biochemistry and "regular chemistry." And it's starting to look like most enzymes work at the quantum level where they're able to tunnel electron in a way that doesn't happen in non biological systems, which is really cool. We just don't know some of the guts of these things but your comment, Matt, about enzymes being present 25,000 different types present in countless things happening inside the body, it's not just what we get from our food, they're actually manufactured on board in distributive systems, and in a few different organs, and where the organs ... where these are mostly made for digestion.

Either one of you guys can answer this.

Matt: Yeah. Our bodies can convert enzymes from one type of enzyme to another inside the bodies, just depending on what you need, your body will basically manufacture the enzymes on demand starting with when you start chewing on food, your brain identifies, "Okay. I'm eating starches, or I'm eating a banana, I need more amylase." So, that's why chewing is so important 'cause when you're chewing your brain is recognizing, "I need amylase, or I need protease, or I need lipase," if you're doing that to get some ice cream, for example. It's delicious by the way, love it.

So, depending what you're eating, your brain's gonna recognize what enzymes it needs to produce and then start breaking that down in the mouth, and in continuing to excrete enzymes inside your stomach. So, that's why chewing is so critical 'cause if we just swallow then our brains don't have the time to recognize what is that we're eating and produce what we need.

Dave: What I was looking for there was there's the stuff in the saliva, your pancreas makes a ton of enzymes, your liver is involved. I think there's some in the lining of your stomach that are probably made?

Wade: Yeah. We can talk about DPP4, which is the gluten one.

Dave: Awesome. So, there's this amazing thing going on that happens before we even get to the bacteria, which themselves make enzymes. What do you know? So, this is one of those areas where I would say we don't know nearly enough especially if we look at the complex between what food is it? How was the food grown? How was it cooked? What else did you eat with it? And what else was present in your natural flora? And then what's your genetic history? What's your mitochondrial DNA? What's your nuclear DNA?

It's that combination which is ... probably if you look at the number of possible combinations it's greater than there are stars in the universe kind of thing. It's that level of complexity.

So, we're just starting to tease out patterns and things that work, and you guys have some some fascinating stuff there.

Matt: Yeah. I think there's even epigenetics ... and if you look at, for example, at Japanese who have far larger pancreas, they're designed to eat rice, right? Their pancreases are designed to produce the enzymes that it needs to break down rice quite easily. When I used to go to Japan a lot, I'd get constipation. My body is not designed but I can eat potatoes, 'cause I grew up on them, and my parents ... my grandfather was a potato farmer, and so I think it was probably even some epigenetic passover on enzymes.

Dave: There definitely is epigenetics. People who can handle a potato [inaudible 00:19:23] because we only introduced nitrate to our diet relatively recently in human evolution and potatoes are nitrate. Rice had been around a lot longer. Maybe I'm part Japanese. I like my sushi. It's funny I tell people, potatoes can be good for you if they don't trigger inflammation, and it's just very individual, right? You have to look at where your people are from.

It's touch because if you do a genetic test, and you find your ancestry, you're like, "I don't know where my people are from 'cause I have people from all over. I'm 0,1% Siberian nomad according to this," maybe. I kinda doubt that one. But it really makes a difference, and I don't think that we're to the point where we can say definitively but we can say, there are definitely patterns and things that everyone has to test and it's completely okay to sit down and say, "That food is not compatible with my biology." And it's also ... even though the person next to you, it's actually good for them ... And it's also okay to say, "That food isn't compatible but I can make it compatible if I take the right enzymes, or the right blocker."

This is back, and this is taking control of your environment making your body do what you want. And Goddammit, if I wanna eat potatoes, find me the right enzymes to do that. By the way I still don't eat potatoes 'cause they give me arthritis, but if I could find an enzyme that'll let me eat mashed potatoes, I probably would but not every day 'cause ... well, too many carbs.

Matt: Well, that's what's cool with enzymes there's many different types of enzymes that do different things. Bot Wade and I feel the most important ones there are proteolytic enzymes, you know the proteases because ... Two reasons. One, when we can't break down protein, we get problems, right? From allergies, which is basically proteins we can't break down to protein toxicity, undigested proteins in the blood, in the gut. All those are very problematic. And then on the plus side, if we can break down protein to amino acids, all kinds of amazing things happen.

My friend Frank, who came to 40 years of zen with me, he was on anti depressants, two of them for a long, long time. Started taking Masszymes, our protease rich enzyme

formula. Got off of both of them because his body started making the neuro transmitters it wasn't making. So, a lot of times I think that ... you look at vegetarians that lose a lot of muscle mass, which is very common and we meet a lot of them sometimes at event. They ... all they're missing is amino acids 'cause you're just not breaking down the protein.

Dave: You talked about protease, and protease is really interesting because there's a whole bunch of different classes of those, and plants naturally contain enzymes that break down those proteins unless you cook the plant or you store it wrong, or these other things. But they also contain enzyme inhibitors, which are chemicals that stop them from working. And this is why when people say eat whole grains, do you know what's in the outer lining? It's covered in stuff that keeps you from getting benefit so that plants babies can survive because if they weren't coated in that stuff, animals would eat the seeds even more than they do, and that would be the end of that species.

So, part of the problem I ran into as a raw vegan is I was getting lots of enzyme inhibitors while I was getting lots of enzymes and oops, that's a bit of a problem. So, there's an art to mixing things or potentially cooking some things to remove the inhibitors and then taking enzymes, or eating a little bit of the raw stuff with the cooked stuff to give you some of the enzyme action there, which is kinda cool.

You talked about protease, and there's a whole class of those things, but the other two that are worth mentioning for listeners are lipase and amylase, walk me through those.

Wade: Yes. So, amylase is what is really the enzyme that's responsible for breaking down carbohydrates. So, we were working with literally dozens of people who had type two and type one diabetes. We put them on our enzymes, and they just start using less insulin simply because they were digesting their food better through the enzymatic process.

Lipase is the enzyme that digest fats. So, oftentimes I believe what we ... we coached over 15,000 people over the course of that time and we get them to submit their data or ask questions. You start to see patterns. And I found that most people are gravitating towards a diet probably based on the enzyme deficiency that they may have encountered. Either from their early childhood, or that's been passed on genetically.

So, we started looking at that and addressing first the dietary components and then getting into the enzymes to say, "Well, what enzymes will have X amount of fat? And as Matt said protease was the number one factor, and then for people based on the dietary choices ... if they were ... let's say they had trouble losing body fat. Chances are they're gonna do much better if they add more lipase into their diet, or if they have skin conditions, oftentimes a lipase enzyme will be very effective. Also, if they have trouble, as we talked about carbohydrates, or they get brain fog, amylase is really good.

So, these types of patterns and enzymes you'd start to see in dietary choices, and as they would kinda clean up their diet, and clean up their lives, all of a sudden flexibility would open up as their digestion improves or their digestive strategy improved.

Dave: So, part of being metabolically flexible ... it's one of the reasons the Bulletproof diet is cyclical. When you go into ketosis, you go out of ketosis mostly, maybe have some background ketones 'cause you're using brain octane but the idea is you actually do eat carbs. You don't eat a high carb diet but you don't eat a zero carb diet and I think what you're doing there is you're teaching the pancreas to be able to make some things [inaudible 00:25:03] you don't get insulin resistance.

when I was testing the Bulletproof diet before I wrote the book. I said, "I'm gonna eat about 4,500 calories a day, and sometimes it was only 4,000 sometimes 5,000 and my deal was I was only gonna do that for a month and I was going to measure all this stuff and say, "Well, I should've gained 20 pounds, but ..." oh, and I was gonna restrict my sleep to less than five hours a night, usually about 4. So, I'm gonna stack the deck to make myself fat. But magically I lost weight, and I did really well on that amount of sleep. I did this for 18 months, and when I was doing it I said, "Well, maybe I'm just pooping out all the fat, so I'm going to take lipase specifically to make sure I'm able to break down the fat and use it.

For people listening, this is not the Bulletproof diet, this is me testing the edges of it. There's clear evidence that having way more food than you need contributes to aging. So, this isn't a long term strategy at all, it was I should gain 20 pounds, I'm only gonna gain three pounds but I did not expect to lose weight. So, it's funny you mentioned lipase because if you're going to be able to absorb fat, it's really important. And if you've had your gall bladder or something removed, it's even more important.

Then amylase is something that if you're carbohydrate intolerant you might wanna look at that. You also might wanna look at the kind of carbs that work for you because there are people who, "Yeah. You give me cassava root and I'm so happy but you give me potatoes, I wanna die." And there's people who are vice versa. And some of that has to do with the bacteria, and some of that I think has to do with enzymes, and some of it, it's genetic.

Today, I don't think there's one test, or even a group of tests that can tell us that amazing test to put it on your plate and then see if you need to loosen your belt two nudges afterwards then you're probably not doing well on that. Try some enzymes. If that doesn't work, well then maybe you're kinda getting a message from the universe that says, "Don't eat that."

Matt: Yeah. There's different things we can do to figure out what works for us and first and foremost is bio feedback, which you don't need a machine for. I felt like carp two hours after I ate that meal. We don't need tech for that.

Wade: It's like a million dollars worth of sensors. Better than your brain.

Matt: But a lot of people ignore that. I mean, a lot of people don't pay attention to really how they feel. If you wanna get more technical looking at HRV data after a meal-

Dave: That's heart rate variability.

Matt: Right. And when you eat things that your body doesn't like, it will go up. Well, it'll go down basically. It'll get worse.

Dave: It's funny. One of the reasons that I became a CTO and co-founder of one of the risk tracking companies that [inaudible 00:27:34] for 100 million dollars. It's a company called Basis, was because they are the first company that can get HRV from the wrist. And I was so pissed off that even though we could do it, that I couldn't get into the product launch calendar because of the team, "We have to have gamification." I'm like, "Don't talk about steps per day because it doesn't matter." And it turns out now, side note, that 10,000 steps a day thing that we've all heard, it came from a Japanese pedometer company in the 1950s marketing pedometers. They just made it up. And we've been saying, "You need 10,000 steps a day," ever since, but there's no scientific backing for that whatsoever. I can tell you that if you walk 10,000 steps a day you'll probably gonna eat more.

Other than that who knows? But it was that heart rate variability as a master predictor of how stressed was your body? And to your point, Matt, if you eat something that isn't compatible to your system, you measure your heart rate variability, and if it drops which is a bad thing afterwards it means your body got stressed by what you ate. And it's interesting also you can self test with that stuff and say, "Well, what would happen if I took enzymes," or I had a different composition of gut bacteria, which you can measure with tests or you can just say, "I took some gut bacteria, and presumably made it through. And that stuff where you guys have spent a lot of time and energy, and just decided ... you care about enough to start a company, which is the biggest thing an entrepreneur can do, say, "This matters enough that I'm gonna spend years of my life on it.

Have you seen differences in other people or in yourself and are there after meal variability if they take enzymes or probiotics?

Matt: Yeah. No doubt about it. Your heart rate variability improves dramatically. One of the things that I do on a weekly basis is I ... one day a week I eat carbs. Very much bulletproof cyclically and I tend to eat also, a surplus of calories strategically.

Dave: Yeah. You can cycle it but not every day, right?

Matt: Right. Right. So, strategically I'll eat maybe five, 6,000 calories a day and I can tell you, if I don't have enzymes and the right enzymes, it's a rough day.

Dave: Well, it's a rough day for people around you because everyone knows what a body building gym smells like, no offense here, but excessive protein when it ferments in your gut it makes all kinds of lipopolysaccharide toxins, which are directly contributing to mitochondrial decline, brain fog, inflammation, joint pain, allergies, and all these things especially if you're doing it in ketosis because high fat will escort those through, which is why you better have the enzymes, you better have fiber in your diet, and if you do that stuff right, all of a sudden you're able to process that many calories and actually put

them to use, and your body is like, "Yes." Then the next day maybe, don't eat anything, and it actually works.

Matt: You feel great, I mean that's the thing you can get away, if you will, eating almost anything with the right amount of enzymes. Not saying that anybody should do that but I'm saying that you can 'cause sometimes, you wanna go out and have a hamburger and fries with your friends, and that's what we do.

Dave: There's a couple other kinds of enzymes that we didn't talk about and we've all heard of people who are lactose intolerant. They're like, "I can't eat dairy," I'm like, "What are you talking about?" We've had lactase, the enzyme that solves that problem available for something like 40 years. So, yes you can eat dairy. It doesn't mean you should eat ... especially casein is a low quality protein that's tied to inflammation, I don't recommend people eat that stuff on a regular basis but you should definitely take lactase if you're sensitive, and we can talk about that one.

The other one you might have heard of is cellulase. And cellulase helps you break down rough fiber basically. What are the rule of those?

Matt: Yeah. We're going back to the cow milk. I think a lot of people the issue is not ... they think it's lactase but I think it's the A1 protein.

Dave: You're exactly right. Talk about A1 and A2 protein real quick if you would.

Matt: Sure. So, A1, A2 are just different types of proteins and myself personally I can't do A1. I tried-

Dave: That's the most common kind of milk protein you get from a species of cows that makes that kind of protein that's hard for most people to digest.

Matt: Right. And pretty much every other animal. I can do goat cheese, I can do ... pretty much any other type of animal cheese, no problem.

Dave: Yeah. I like sheep. I do pretty well on that stuff.

Matt: Yeah. Exactly. So, that matters quite a bit, and I think for most people the inflammatory response they get from A1 is very high and they should probably move away from it. As far as cellulose and cellulase that's basically when you're getting a lot of veggies is very difficult for the body to break down the cellulose, which is the cell membranes that plants have. I know some bodybuilders, there was this famous body builder that both Wade and I know and he went crazy eating a tremendous amount of vegetables and wrecked his digestion.

Dave: Oh I did that as a raw vegan. I had to get these one gallon salad bowls to just hold enough food 'cause I was hungry all the time. And like, "I'll just add more cashews, and I'll add more coconut oil," but I could never be full because I wasn't ... I was malnourished even though I was eating crazy amounts.

Wade: I had a similar experience when I was going through my two year raw food experiment. And that's why I got so into enzymes and their usage because I knew that I really couldn't perform at a high level on that diet if I didn't have really superior digestion. And then that inadvertently trying to solve that problem as an athlete translated over to all sorts of people who I discovered had digestive related illnesses and we could actually solve those, and that led to a whole cascade of things and eventually a company and all that sort of stuff. So, you scratch your own head, and you start up with a toaster and end up with a rocket ship.

Dave: That's awesome. There's this weird thing. If you look at that thesis beyond headstrong, [inaudible 00:33:23] mitochondria the idea is that some of us are not very good at taking a unit of food and converting it subcellular level combined with oxygen into a unit of energy, roughly half of people under age 40 have a problem. Everyone over age of 40 had a problem called aging. But the step that happens before this subcellular thing is you have to actually get the thing that's sitting on your plate into your body, break it down, so it can be delivered to those mitochondria so they can do it. And if you have a problem in that part of the system, it's sort of like, "I have a problem with my car, and the problem is we can't refine oil to make gas, so then I can make the engine in my car work better." And this is a level of biohacking that's looking at that part of the problem.

And we're not talking about asthma, which is, "Well, what happened to that food before it got on your plate?" 'Cause that seems to matter too but maybe enzymes can help you if you're not getting the right stuff on your plate. And let's face it. No one's perfect, even me. The other day I had grass fed beef, but it wasn't harvested by monks. I mean, it could've been more ... seriously it could always be more perfect, but I travel a lot, and there's times when ... and these vegetable probably rent organic, I'm at a restaurant, and I argued with the waiter for 10 minutes to just get a whole plate covered in broccoli, not two spears of broccoli already. You go down that path like look, "I'm willing to pay an unlimited amount of money for a plate of vegetables," and he scratches his head and go, "We can't do that."

And you're like, actually I don't wanna spend \$40 on a plate of broccoli but seriously, bring me some broccoli. And you go through that. So, it's just not gonna be perfect. So, being able to patch that by having things that'll let you make better use of whatever you get in your body, I think there is great wisdom in doing that.

Alright. How do people just sit down and say, "How do I know what my enzyme intake is with what I'm eating today? How do I think about that?"

Wade: Well, I think maybe before we start on that maybe we should go through how digestion works, so for people who don't understand I say there's five stages to upgrade your digestion and then we'll work from that those point, and go into specifics on each one.

So, I think one of the most dangerous memes that are out there is you are what you eat. I would say it's not what you eat, it's what you're able to digest, absorb and utilize, and ultimately what you can also eliminate to kinda take that to the next level.

So, if we look at the digestive process, it's a single canal from your mouth to your anus. Okay? So, the food-

Dave: We're all donuts, basically. We're hollow on the inside.

Wade: That's right.

So, food is in the digestive canal on some level of that process, but that's not inside your cells as you alluded to where you can actually use this and of course our digestive system has its own brain. You can cut all the nerves to it, it still functions which is pretty remarkable, and we always have these gut feelings, and etc, etc.

So, you look at digestion, it starts with chewing. You take in the sensory and actually when you sense and smell the food, it will activate enzymatic activity in the body, and your body starts to prepare, and plan for what is the meals to come. And as we get used to a particular diet our responsiveness to that diet, our metabolic response gets improved. That's why a lot of body builders, for example, or high performance athletes stick on a very specific, the same diet over, and over again. And the research demonstrates that that can be very effective although boring for performance based diet.

So, we start chewing the food, [inaudible 00:36:47] and amylase based enzymes will be oftentimes released inside the mouth. The food will then travel into the esophagus. So, there's two different [inaudible 00:36:56], should you chew the food, or gulp the food, whatever, but I think, for the most part chewing the food ... one of the things that does it people tend to eat less if they chew more. And just because it's a [inaudible 00:37:05] factor. But once the food goes down the esophagus it enters into the upper cardiac portion of the stomach. And at that stage, that is where the enzymes present in the food are supposed to start breaking the food down.

Now, if I'm a tiger eating zebras, I knocked down the zebra, they open the zebra up, they go in and grab the entrails first, that's where all the enzymes and probiotics are, and then they eat the rest of the carcass. A horse would go eat grass and if it had any blood on it, it wouldn't have that grass, but if it's fresh grass it'll get down and it'll get the enzymes present in the food, which as you alluded to earlier plants will break down that food once it's inside the warm, wet digestive environment that we are equipped with.

So, when it comes into that upper cardiac portion of the stomach that's where the enzyme [inaudible 00:37:56]. If you don't have the enzymes that becomes the initial problem stage that people will experience. And we can get into that maybe [inaudible 00:38:03] burping up or that sort of thing. At about 60 minutes, sometimes earlier depends on the person, and as you get older it's less, and less or more and more time you start to release hydrochloric acid.

The hydrochloric acid is really interesting because it has a few functions. Number one, it's a disinfectant.

Dave: It's important. Yeah.

Wade: It kills pathogens inside the body, and that's why a lot of older people are more susceptible to viruses and bacterial infections because they just don't ... if you're after 40 you're just not producing enough hydrochloric acid.

Dave: It goes down with age. Yeah.

Wade: That's right. It's also a key component in giving us chlorine ions that helps the immune system, etc. But it also changes the PH of that food chime that's now under peristaltic contraction. Now, why that's important because is that's going to activate certain enzymes and deactivate other ones. For example, in the case of protein if you're eating protein, there's enzymes that are broken down at around 6.0 then there's ones at five, then at four, then at three, all the way down to two. You're gonna cleave different amino acids at that particular point.

Dave: And those numbers, those are PH markers. So, the level of acidity. So, you don't need highly acidic portions of the stomach you need mildly acidic portions because the same PH doesn't work for every enzyme. Enzymes themselves are very sensitive to whether your acid, or alkaline.

Wade: Correct.

Dave: What happens if people take baking soda, or alkaline water with their meal?

Wade: It's a great question. Think for the most part when it comes to digestion, for example your stomach acid is extremely acidic, so drinking the water, or taking baking soda probably wouldn't interrupt it as much from an acidic side, but it would affect the enzymatic solubility. I don't recommend taking baking soda. I think it's a poor way to alkaline your body in the long term. Although it works short term. I think it's a long term detriment to the body.

Dave: You're saying with meals or at all?

Wade: Just at all.

Dave: Interesting. So, there's some new studies coming out around autoimmunity and I think there's probably a good case for some people taking it on empty stomach but never with food. And when I got my first alkaline water machine in about 1996, somewhere around then, and for a year and a half I had this undigested food in my poop. And I just couldn't figure it out and well, alkaline water, stomach acids, enzymes. So, I found that drinking that with meals was a really bad idea for me. Even if I took HCL capsules, the betaine HCL that you guys make. Actually I wasn't taking yours back then, that was before you existed but the same general concept.

But different effects happen if you're doing on an empty stomach and-

Wade: Correct.

Dave: Your PH is regulated by this amazing thing we do called breathing not by what you drink.

Wade: Yeah. I think that using various breathing techniques is probably the most effective way to alkalize the body whether you use water, breathing there's a lot of different methodologies. Going back to hydrochloric acid, which I think is a really important thing because there's so many people that are being treated for acid reflux, and they think it's ... they're producing too much acids, which is actually the opposite because when you hit a certain saturation level of hydrochloric acid it flips the esophageal sphincter which is like a little lid that closes off the stomach so the acid doesn't splash up into our esophagus. And if you don't produce enough the lid doesn't shut, and now you get acid splashing and you go to your medical doctor, he gives you a proton pump or something, and now you're inside that system, and it's just gonna be the next drug, and the next drug.

I think if you pulled 100 people who had acid reflux they think that they're producing too much acid, and I think it's a great injustice to people's education on that part.

Dave: I'm so happy you said that. When I was 23, and this id going back more than 20 years, I had my first bout of acid reflux and I felt like there was a candle burning in my chest. I went to the doctor, I'm like, "I'm dying. This is horrible." He said, "Yeah. Take some [peptidase 00:42:15]." The next day I'm like, "I feel so much better," but after a year and a half of taking that I'm actually not better on other fronts. This doesn't seem good. So, that was when I first looked at that early research about HCL and I actually had to take six capsules of hydrochloric acid, which was quite a large dose in order to get that valve to close and over the course of time as I fixed my gut I actually found I needed to take less of it, but it's just a great act of service for you to share that.

For everyone listening, if you or someone you know has that problem and you're on proton pump inhibitors you cannot digest or sterilize your food if you're taking those. They are terrible for you long term even if they stop the pain. So, I recommend, for people who have that problem, if after a meal you have acid reflux, I'm gonna say baking soda because it'll stop the pain-

Wade: Sure.

Dave: And it's way better than taking all those other things.

Wade: Absolutely.

Dave: But next meal, start taking hydrochloric acid, which is available in capsules. And that's one of the things that you guys have in so many formulations, which is cool. It actually works.

Tell me about whether there's updates 'cause this is the algorithm we might've used for 20 years.

Wade: Sure. Well, then what's gonna happen afterwards ... and sometimes for people that might have parasitical infections and stuff, they can take mega dosages of hydrochloric acid, which I did on after coming from Asia. [inaudible 00:43:34] she had said that, "Hey, you picked up some hitchhikers." And I said, "Well, what do you suggest?" She goes, "Here, take 20 caps of hydrochloric acid."

Dave: Holy crap.

Wade: Which I did for a period of 10 days, and cleared it up. And that was-

Dave: On an empty stomach or ...?

Wade: Yeah. I took it on an empty stomach.

Dave: Did that just burn, or ...?

Wade: No. It actually didn't. I think if you have enough ... I think if you get yourself into an optimized state, again, your body has, what I say, the homeostases mechanisms to bring you back. If you become too reactive to anything that you're doing, there's probably an indication that there's an area that you can upgrade or improve.

So, I always look at feedback from my body. My mind runs my body, and if my body's not able to cash the check that my mind is writing, I need to go out and find the hack that's going to fix it because the body's always gonna bring me back to balance, and it has a vast array of tools that we're just trying to optimize. We're just trying to give it the tools, the resources, the materials, whatever it needs so that it can run its amazing metabolic process that will take hundreds of years to figure out.

We're dealing with millions of years of biology here that we're just getting ... we're just so slowly into scratching the surface of what's been developed over the eons if you will.

So, going back ... I love going on these [inaudible 00:45:00] but now the food is gonna exit out of the digestive system, your body is gonna release what's called bicarbonate buffers, which is just a fancy name for alkaline minerals.

Dave: Right. Baking soda.

Wade: Exactly.

Dave: But that's what's happening there.

Wade: That's exactly ... Yeah.

Dave: The bile is highly basic, not highly acidic, right?

Wade: Correct. So, it needs to neutralize that. If it doesn't, that's when you get ulcers. And that is a dangerous thing. One of the caveats for people who are gonna run out there and

buy some proteolytic enzymes and stuff is, if you do have ulcers or gastritis we recommend that you stay away from a proteolytic enzyme at first until you get that solved. The reason being is, those enzymes will start digesting that ulcerated stuff.

So, warning out there for people just as a little ... first do no harm. Usually after a month of a good enzyme formula without protease then you can go into a protease once that's figured out.

The minerals are in there to buffer the acids and then it goes into, what I call, the final stage of the intestinal track, and that's where the war for whatever is left is engaged with in the microbiome. Good rule of thumb is we have 10% good, 10% bad, 80% opportunists. And depending on your diet, your lifestyle, stress levels, all these different things that you talk about, that's going to influence your particular microbiome.

Basically, from my standpoint, or my observation is probiotics are good bacteria, which are pro-life. They're like little smart bags of enzymes that finish off the digestive process. So, if enzymes are cutting the grass, probiotics are mulching the grass, and converting it into the units that are then taken across the intestinal barrier and into the body, and utilized by yourselves, by your organs, and by your brain obviously.

At the final stage, of course, is peristaltic contraction, and then you eliminate the rest of the waste period if everything's going.

Dave: You wanna hear a cool story about peristaltic contraction?

Wade: I'm always up for a cool story.

Dave: Alright. So, if you're listening and just going, "What the heck is that?" That's the little compression of your intestines when they squeeze to move stuff through the track and there's actually a specialized form of tissue that does that, which is kinda cool.

When I knew I had this gut problem, and I tried everything, I tried a bunch of different ... this is going back a long time ... a bunch of different, I'd say mostly dead probiotics that oftentimes didn't do anything. There's been a big change in technology and understanding of those in the last 20 year since I started all that. I said, "Alright, I'm gonna try this thing."

I found a swallowable tens device from Russia. So, tens is an electrical stimulation thing, and leave it to the Russians, they're the most badass biohackers. I think it's 'cause ... I don't know what's going on over there, but for the last 40, 50 years all the weird vibration, electrical, peptides, all the stuff, they're one of the leaders in this.

So, it was kind of a horse pill size capsule and it's activated by moisture. So, you just swallow the thing. I'm like, "This is kinda cool," and every five second it goes, "Bzz, bzz." And the deal was, it's going to strengthen peristalsis. I'm like, "I know my gut isn't working, I'm so Goddamn tired. I'll do anything."

It came with Russian writing on this little pack. I ordered it from overseas. I swallow the thing, and it was like, "Bzz." Every five seconds I'd kinda twitch as the thing would go off. And I'm doing alright, and about eight hours later it's somewhere in my small intestine right by my left hip flexor, and it gets lodged there. So, my left leg is just kicking every five seconds, and it's not moving. I'm like, "This is horrible."

So, I started jumping up and down, and doing weird positions, and handstands, and whatever I could do to dislodge it. So, I finally did but there was a couple hours like, "Ouch, ouch. Just [inaudible 00:48:44]."

So, I can tell everyone listening that that might not be the best way to stimulate peristalsis.

So, what is the best way to stimulate peristalsis if you have slow transit timing?

Wade: Well, one of the things that I do every day as part of my practice is I get in kind of a semi squat position with my hands on my knees, I do a deep exhale, exhale [inaudible 00:49:07], and then I bring in my stomach in and out rapidly as many times as I can.

Dave: With your lungs empty.

Wade: Exactly. And I do that usually five sessions, five rounds of maybe 10 or 15 seconds each. I do that every single morning as part of my routine, or as I call it my awesome health formula.

Dave: Do you have a squatty potty?

Wade: I do.

Dave: Yeah. I have one too. I admit it. It's one of those things where actually bio mechanics matter. So, for people listening, just google squatty potty unicorn, and you'll know everything I'm talking about.

Wade: Well, you know the funny part about that is that I learned that from real ... when I went tree planting in northern Ontario when I was an 18 year old guy. This is a heavy bug infested zone, and you have to go out into nature as our ancestors did to use the bathroom and what's interesting is, it's amazing how much faster you can defecate in nature than you can sitting on a toilet. Later on, of course I didn't [inaudible 00:50:11] to the matter but then I understood the mechanics of why that was later on as I studied the exercise physiology and that sort of thing.

Dave: Since we're talking about poop, a friend of mine was telling me about the first time he took his kids camping, and his son comes out of the bush going, "Dad, it's so amazing to poop in the forest. That's the best thing ever." And he was just terribly excited about this idea that you didn't have to sit on a toilet for it. But it's true. Raising your knees is that last step, but if your peristalsis is broken, it's not gonna work as well.

That exercise you just talked about is something, I think, everyone can benefit from, and you don't necessarily have to even be in a squatting position but the idea is empty your lungs and suck your stomach in and out without breathing as many times as you can before you have to breath, and it will cause motion in those things that probably won't happen any other way. And that's something that I do too, but I usually don't squat when I do it. I just-

Wade: Yeah. I do a semi squat like [crosstalk 00:51:02] and lean forward a little bit.

Dave: Yeah. And even so the child's pose in yoga is meant for that. If you do the really advanced sitting lotus pose and bend forward that's also supposed to do that, but most people can't do that. I can.

Alright. Let's talk, Matt, about that proteolytic enzyme for speeding up recovery and for changing flexibility, but let's talk about recovery of things like sprains and strains. What have you found in the research on that?

Matt: Yeah. There's actually quite a bit of pretty mind blowing research that's been done with athletes. Doctor Forgrave thought he could take sprains and strains from eight weeks to two weeks with proteolytic enzymes. Another doctor they took hematomas from 16 days to seven, swelling from 10 to four, inflammation from 11 days to four days, being unfit from training from 10 days to four. Some other doctors, Doctor [Litman 00:52:02] trained boxers, found he could get rid of black eyes instead of 10 to 14 days from one to three days. And Doctor [Bolt-Mueller 00:52:13] found that he could fix ankle related injuries 50% faster.

So, couple keys. One is start taking the proteolytic enzymes as fast as possible, and the other thing is you wanna take it on an empty stomach.

Dave: That's really important. There's a different use than digestion.

Matt: It is. Now we're getting the systemic results, and as most or your listeners are into biohacking as great as a digestive results or the systemic stuff is also as exciting because now we're really starting to reduce inflammation, clean old undigested protein that might be lying around in your intestinal track. And even on fast ... Wade and I have done a lot of fasting, from three days to five days, and Wade's done a few 10 days. One of the best things you can do to improve a fast is to take a lot of proteolytic enzymes on an empty stomach throughout your fast because now you're cleaning house.

Now you're gonna get the enzymes in your blood into your intestinal track without the food 'cause if the food's it's gonna break down the food, it's gonna focus on that. But if there's no food, now we're really cleaning, again, the old crud that might've built up.

Dave: It's funny. If you imagine that each cell on the body wants to do what it's designed to do. When I say it wants to, it actually has ancient bacteria puppet masters driving it, saying, "This is what you're here to do, and it's part of a whole system that emerges in us being

mobile Petri dishes for these bacteria. And if they have more enzymes present because you took them, they will be able to do their biochemical activities faster and better.

A long time ago when I was looking at this constant muscle pain, joint pain that had been a part of my life always, I'd had arthritis in my knee since I was 14, that's gone now. And all sorts of stuff like that. So, I went through a period where I would take about 150 protease capsules on empty stomach every day for a month or two. When I did a bunch of electrical stuff later where they're looking for adhesions in the body, they were like, "Dave, we found eight." Normally even in an athlete, or anyone we're gonna find hundreds of places where your fascia, these collagen lining things in your body where they're stuck together but you don't have those.

And all the scars I've had from my surgeries, there's still an incision mark but the tissue around it it's gone, and some surgeons, now plastic surgeons in particular are saying, "Well, take these afterwards 'cause you get less scarring." So, I found profound effect from doing that on an empty stomach. And these were crazy doses. Probably more than was even necessary, but I figured what the heck, I'm pretty desperate, and when you have all the symptoms of the disease of aging when you're young, I'm not gonna do this.

So, I was willing to kinda go out on a limb but I have to say, systemically using these enzymes is important, and I love it that you're talking about that. You guys recommend five to 15 capsules of which of the BiOptimizer [inaudible 00:55:11].

Matt: Well, we have more protease per capsule than anyone else. So, for us, if you're taking let's say 20 capsules a day or 30 was probably the same dose as your 150 back in the day.

Dave: Okay.

Matt: So, if you want systemic effects, 10 in the morning, empty stomach, 10 before bed. A lot of people find they sleep better too taking the enzymes before sleep. So, that's a little bit of a sleep hack.

Dave: It makes sense. The body wants to do repair process at night. You make it easier, you're gonna have less [inaudible 00:55:46] biological stress. Same reason I do mitochondrial stimulation before bed. It's one of the supplements I take. Why would making that work better? Well, because the body wants to do what it wants to do, you make it easier, the body likes it when it's easier to repair itself.

Matt: Exactly.

Dave: Alright tell me about gluten in the gut. What do you know about that?

Matt: Yeah. Gluten in the gut ... First of all I loved that in your biohacker you used one video. You shared a couple of really interesting facts. One is that 99% of people that have gluten sensitivities aren't aware of it. So, for everybody listening, when I get ... I think

you're dealing with a very aware crowd but a lot of people have gluten problems and they don't know it.

The reality is we live in a gluten filled world. If you go to any restaurant, I don't care if you order gluten free, unless the kitchen has zero gluten in it, it's contaminated. You're gonna be eating contaminated food almost in every restaurant.

Dave: And that probably won't affect people who are mildly sensitive because they're not getting enough to trigger it, but if you have true celiac, and you're truly gluten sensitive it can mess you up.

Matt: Yeah. But there's a special enzyme in the intestinal lining called DPP4 and that's what people that are gluten sensitive or celiac lack. So, there is this special enzyme and our product Gluten Guardian has it called DPP4, which will break down the gluten.

I think when you go out it is a smart thing to take. Even if you eat at home, again, is your kitchen completely gluten free? My wife's a celiac, so I know what it's like to [crosstalk 00:57:20]

Dave: Yeah. We don't have gluten in our house just 'cause no one eats it.

Matt: Yeah. But again, sometimes people bring things, and ... again, it's a gluten filled world that we live in, so it is smart to protect yourself with something like Gluten Guardian when you go out.

Dave: There's definitely an argument for that. And for people who say, "This is a license to go eat gluten," there's a whole bunch of other stuff in grains that is just not good for people. If you eat grains, even if you follow the advice that says, soak the grains, put vinegar on them, and do all sorts of things, you can make them, sprout them, you can make them slightly less of a problem but they're still just not a great food source for a whole variety of reasons.

That said, if you're going to be exposed, or you're just going to say, "You know what? I get so much pleasure out of this chocolate cake, I'm just gonna take the hit," you might as well minimize the hit, which is why I'm a fan of specifically taking that enzyme if you're gonna be exposed to this stuff. Although I'd say, if you're gonna cheat, just have some sugar which is also bad for you but less bad for you than grains.

Matt: Again, I do have my spike day once a week, and I do eat stuff like cake. I'm not a saint. So, when I do, I make sure I take those enzymes, and I gotta say, it's made all the difference in the world on those meals. I don't feel intoxicated, bloated, all the things that I used to feel.

Dave: I found that if I eat [inaudible 00:58:42] on a higher carb day, I always, two days later, I have more cravings. And I just live a live without any cravings for food. I just ... it's amazing. So, I like to be in that state.

Alright. Let's talk more about probiotics. I just wanna preface this by saying I've been taking a whole bunch of different probiotics on and off for a long time, and I've never felt a difference from probably 80% of them. And that's because a lot of them are dead the way they're delivered, the way they're packaged, or they get killed in the gut.

And I know you guys have done a lot of work on solving those problems.

Matt: Well, what we focused on is to develop a strain that ... First of all there's two types of strains. They're either transient or colonizers. The colonizers is what, frankly, we feel is in the BS zone 'cause we're not finding much ... again, with the Viome test that is colonizing. The transient strains, they go in the body, and they leave.

So, we focused on developing a strain that eliminates bad bacteria. And we know it works because we've all had ... everybody in the company at different points was traveling, has eaten bad food from bad fruits to whatever, had food poisoning to the point where we're on the floor feeling like we're going to die and take 10, 15 capsules and 20 minutes later it's gone.

At my friend's wedding I had enough probiotics to feed about half the people there 'cause everybody had food poisoning from the bad pineapples.

Dave: Not a very good friend.

Matt: I should've brought more. And everybody that I gave the P3OM to, they were fine after 20 minutes, and the other half were sick for a day and a half, which is typical from food poisoning.

Celina who's here, maybe she can share the story with her dad because he's had a pretty amazing transformation from taking them.

Dave: Celina is the Bulletproof executive producer extraordinaire.

Celina: Hello Bulletproof radio fans. I'm Celina. I'm the executive producer like you said, and these guys sent samples that Dave clears first, so I grabbed some for my dad, and he [Perky 01:00:50] my dad's name is Perky, he was not-

Dave: It's actually a real name. He's actually that way.

Celina: He's super perky. He wasn't able to digest food. He was down to 93 pounds and we were pretty desperate, and I got him the P3OM and brought it to him 'cause I had it on my counter, you guys sent me a couple of them, and after a week, he started digesting food, and able to keep food down, which was revolutionary. He's back to normal within two weeks.

You saw him out on the 4th.

Dave: Oh yeah. He was perky, was kicking ass I would say.

Matt: Yes. So, getting rid of bad bacteria is what we focused on. Again, we've always known it's transient and it's a very special strain that is basically like a Navy Seal of probiotics. We've taken L-Plantarum, we put it through a process where it literally evolves into a far stronger version of L-Plantarum, and just basically kicks the butt of any dead bacteria.

Dave: And that process you're talking about is fascinating for people listening. You can take bacteria when you're culturing them, and you can make life tough. So, only the really strong ones survive, and the same things works in your body. Your cold showers, it's the same idea that mitochondria can't make energy, they die so strong ones can come in. You do the same thing to push probiotics. You get these really powerful ones that come in, and they basically see the normal bacteria in the gut and they're like, "Bunk," and they can literally do things because they grew up in a stressful environment, which is kinda cool.

Wade: Well, you know the science is well known about, for example antibiotic resistant strains of bacteria that now are prevailing in all hospitals, and that's simply because those bacteria have been subjected to a very aggressive environment.

And some of these will mutate and life always seems to find a way to survive. And that was the premise for the cultivation of a super probiotic strain. And the cool thing is what the patent shows. Antiviral, antiretroviral proteolytic activity, and why that works is viruses work with the protein coding that attaches to the cell, and sends its message in and when you can interrupt that through being able to break down that virus or break down the protein's coding, you interrupt its effect. And that's what makes it so effective from immune system.

We got people reporting all sorts of different benefits that are outside of what we can say from medical claims, but ... it's powerful, and people try to get in.

Dave: Alright. I gotta ask you about a slightly uncomfortable subject here, but one that I may or may not have experimented with over the years. Sometimes getting bacteria into the large intestine doesn't work very well through the mouth, there might be another way to get it in. What's your take on basically, using probiotics in reverse, we'll put it that way, politely.

Wade: I'm gonna turn this over to Matt because he's probably-

Dave: Is he the pro?

Wade: He's created, maybe, the most creative way to address this problem in the world, so I'm gonna cue him over. Here you go, Matt.

Dave: Alright, Matt. Tell us how to put probiotics where ... nevermind.

Matt: Yeah. Yeah. We call it the batman enema. So, there's a couple things going on here. First of all you take about five capsules and you put it in coconut water, about a liter.

Dave: This is the P3OM-

Matt: P3OM.

Dave: The strain that you developed.

Matt: Now, this strain actually doubles every 20 minutes which, if you know probiotics, is very fast. So, every 20 minutes it's eating the sugar and they just multiply. So, it gets ... in three, four hours of fermentation you're multiplying quite a bit.

Dave: So, you grow a lot of these things in coconut water?

Matt: Yes. And it eats the sugar. And you'll know when you taste it, and it's turned acidic, it means the sugar is pretty much gone [inaudible 01:04:46]. So, depending on room temperature, in Panama it's like three hours, here it'd probably be maybe five or six.

So, once it's ready you do an enema, and ideally you use maybe a teeter, the back inversion device.

Dave: So you hang upside down?

Matt: You hang upside down, and now it's gonna make it's way through. What's interesting, unlike other enemas, a lot of times there's nothing to come back out, your body absorbs it. And-

Dave: And how much liquid are you using for this?

Matt: About a liter, a liter and half.

Dave: That's a lot of liquid.

Matt: Yeah. Yeah. And I will say that I've had the best ... The only time in my life that that weird, rubbery, tar stuff came out of me-

Dave: Gross.

Matt: I know. That you sometimes see online, or pictures of, was when I did that. I did a colonic, and then it was like a couple days later ... again, stuff that I've never seen come out of me. Again, like that weird shaped stuff. The stuff that you can tell was caked on the intestinal track came out.

Dave: Now, I got into that idea a long time ago and it was really this idea, we have all this undigested stuff, but I talked with some medical doctors, and they're like, "I don't get it because I stick scopes up there, and there is no lining. I see pink tissue on the sides." So, is it possible it's coming from somewhere else?

Matt: No. I think this was deeper.

Dave: Okay.

Matt: No, this was deeper. I mean, when you're hanging upside down for 10 minutes then it just keeps working its way to-

Dave: Somewhere up in the small intestines.

Matt: Yes.

Dave: Got it.

Matt: But you still have ... gain, bad bacteria can live even though the tissue is pink. You can still have all kinds of weird bacteria.

Dave: Yeah. You can but you don't get this idea of there's this thick, ropy fungus alien living in your gut. I don't think there's great evidence for that in most people but there can be fungal mats, you can have all sorts of weird crap going on. See what I did there? Weird crap?

Matt: Of course. Yeah. So, again I think it's wise to do it once in a while, to clean house.

Dave: Alright. I have not tried that, but if you wanted to try it with [inaudible 01:06:50] instead would work? I'm just kidding, don't do that.

You don't even answer that one. You're like, "I'm just ignoring you Dave." Thanks.

So, I would say coconut water seems like a good choice there 'cause it's mildly sugary and all that. The reason that I thought [inaudible 01:07:05], if you over from it, you tend to get alcohol production, which kills all the bacteria. Is that something that happens if you leave it overnight or something?

Matt: No. Again, when you do kombucha you put a lot of sugar in there, which you get a little bit of that trace alcohol amount. With P3OM, no. Again, when the sugar's gone, you're gonna taste it, and that's gonna go bad fast.

Dave: Okay. Got it.

Matt: And by the way that's another hack too, just to drink ... you can ferment P3OM, put it in the fridge, and then it'll be good for about two days. You're basically getting a mega dose. And I found that if you take it at night, before bed, it calms the nervous system down, and we know that too from all the research that's being coming out with a link from the gut to the brain that they're sending neurotransmitters to our brain all the time.

So, I've definitely found that it calms the nervous system.

Dave: That is profoundly cool, and it's a way that's very cost effective because if you're to take the whole bottle of P3OM every night, that starts to add up, but if instead you say, "Alright, I'm gonna put this in something, let it grow naturally, and then use it ..." then you do that once a day, and make fresh stuff, you're pretty good to go.

Wade: Yeah. I'll add to that. One of the things that I like to do is, I'll actually blend it up with the coconut meat, and the coconut water, and make it like a fermented kefir, yogurt, coconut kefir whatever, and then I'll put that in a jar. I have a lot of women who have proliferation of yeast infections for years, they'll eat that at night, and literally it's gone ... or they'll even put it, if it's really bad, right on the vaginal area, and the effects are really profound. And I know we can't make medical claims and things like that, but there's so many people suffering things, that I think it'd be a disservice not to mention that to people.

Also, people that have a variety of viral conditions that can come up. It's very effective for that. Again, because it interrupts that protein coding at a viral component that'll come in.

Dave: Apart from enzymes, that's from the probiotic itself?

Wade: That's from the probiotic because you see, with a probiotic with a transient strain it can go through the body. It's not just gonna stay in the digestive canal. It's gonna go clean up other areas of your whole body, and that's what makes it different from, say, what an [inaudible 01:09:36] strain would be doing.

Dave: Very cool stuff. Alright, I've got one more question for each of you. Matt, I want you to go first. Someone comes here tomorrow and says based on all your background as a human but also as a professional training and martial artist, and kinesiologist, and all that I wanna perform better at everything I do as a human being. Three most important piece of advice. What would you say?

Matt: You're gonna love the first one. Go to 40 Years of Zen.

Dave: Oh really? Okay.

Matt: I'm serious. For me, I've done it three times, I'm going again in September. Nothing has given me the [inaudible 01:10:14] to spend five days upgrading my brain, my limbic system, my nervous system, learning how to control my brain waves, cleaning house emotionally, all the things that we do there. It's just been transformative, and I keep going because I haven't found the ceiling yet. I just keep getting amazing results. So, thank you.

Dave: Wow. Thank you for that. I totally did not know you were gonna say that. I appreciate it. And for people listening, 40 Years of Zen is the neuro feedback facility that I opened a few years ago because I needed neuroscientist for my own brain to do what I do, so thanks Matt.

Matt: Dave did not pay me to say that. I'm paying him to go.

The second thing, if I could only take one supplement it would be Masszymes. That's the ... when I travel, or ... at times for logistical reasons or whatever, I've run out on the road, and it's not quite the same. So, for me if I had one supplement, it would definitely be the Enzymes.

Then the third thing as far as ... I would probably go with meditation, which kinda goes with the first one 'cause I found that to maximize, or continue making the gains from 40 Years of Zen I've been meditating, which by the way I couldn't meditate before 40 Years of Zen. I tried. I'd do it but it wasn't effective. Then after the 40 Years of Zen it's like I wanted to meditate, I knew how to do it, and it's just been amazing.

Dave: Beautiful.

Matt: Those would be my three things.

Dave: So many people talk about meditation as one of their three things, and I like to invite people on the show who've done all sorts of things who ... that are changing the world in some meaningful way. And it's just shocking how many people do that. And I know that because on my next book, which is called "Game Changers" that comes out later this year, I've actually quantified how many people said meditation was that important. So, it's kinda cool.

Matt: And [inaudible 01:12:08] but I'm gonna go for a fourth one.

Dave: Alright.

Matt: Which-

Dave: We just always take a fourth one.

Matt: I know, so let's go for it.

Deep sleep. So, I've spent about 30 grand creating a sleep system and I used to be a guy that, I needed eight and a half to nine hours, and now I'm down to six and a half, seven feeling twice, or three times better than I used to sleeping more.

Dave: Sleep better not longer. I love that.

Matt: Yes, and I know you're all about that too. I got a faraday cage, I use the Essentia organic mattress, I've got the [inaudible 01:12:41] below it, I use the Chilipad, I've got the Delta Sleeper on my head. And of course I use the right supplements L Theanine or Gaba. I used to love your Gaba product. I was a little sad when that got off the market.

Dave: Yeah. We couldn't get a reliable source for this stuff, we've-

Matt: But that was good.

Dave: We've got sleep mode out there now, which is a legitimate things with different pathways, right?

Matt: But yeah, just sleeping deeper for me has been transformative on body fat, muscle gain, brain, mental endurance, creativity. Sleep deep is so key. And of course with the [inaudible 01:13:14] you know ... I'm so grateful that [inaudible 01:13:17] got this 'cause-

Dave: Finally after years of that stuff with headbands, and all ... Victoria's Secret-

Matt: Yeah. I used to have the Zeo too.

Dave: Then they've made an improved lingerie grade headband. I can tell you.

Matt: And I used to have five to 10 minutes of deep sleep, and I didn't know it, right? And then [inaudible 01:13:34] I'm like, "Five to 10 minutes?" Now I'm at least over an hour, and then three hours of REM, but what a transformation. If you're gonna invest in anything in your house, definitely invest in a good sleep system.

Dave: Love that. Alright, Wade. Drop us some knowledge, Mr. Bodybuilder.

Wade: Well, the three things I would recommend are not really nutritional, or supplemental, they're diet related. It's air, water, and exercise. Deep breathing practice, usually correlated with meditation, that's the first thing. Breathing is the first thing we do when we get on the planet, it's the last thing before we leave. You can go months without food, you can go week or so without water, you can go minutes without air. So, I think, a lot of people just don't know the power of breathing practicing with consciousness and how it ties. It's the only thing you can do consciously and unconsciously, and its effects on the body are virtually instant.

Second thing is water. Ensuring proper hydration. Everything works better when you're properly hydrated. 95% of the population at least is chronically dehydrated, and that means that they're gonna take time in order to get their hydration levels up.

The third thing, I think, in today's sedentary based world is exercise. Find the exercise that is the most efficient, effective for your lifestyle. The one that you love to do, and the one that makes you feel the best, and just integrate those three things. I have a program called the Awesome Health Formula 'cause ones you get your digestion figured out we say activating awesome health. Our mission is to end physical suffering through optimizing digestion and then activating awesome health leading into the things that you talk about and how do you optimize.

So, those three things are the primary factors. Then if I was to add a fourth thing, everything works better when you get your digestion in order. It doesn't really matter what diet is suitable for the person, I've yet to find someone who hasn't taken 30, 60, or

90 days to really just focus on optimizing those components of the digestion that we talked about. If you do that, it'll carry forth and you'll fully understand and comprehend why optimizing your digestion just has a cascade of benefits. It makes everything else work better.

I know when I take any product, and Matt's like this, and also people who go through a digestive correction process, if we say, or optimization, or upgrade program, all of them start to feel the the other products that they may be using much faster, and amplified effect.

So, I think that'd be my message.

Dave: Beautiful.

Well, thanks guys for sharing what you've got and for people who are familiar with this show, I usually ask people to come on, and talk about the cool work they're doing to offer something special for Bulletproof listeners.

You guys are offering people 20% off if they go to BiOptimizers, or that's B-I optimizers.com/bulletproof and use code BULLETPROOF20 to save 20%, which is a nice discount. Thank you for offering people that.

Matt: And we actually have a big bundle if people wanna try all four digestive products, it's over 30%.

Dave: Nice. An even bigger discount. Beautiful.

So, if you're listening to this, and you're thinking, "Alright. I wanna upgrade my energy pathway as well," getting your body to assimilate the nutrients you take, so that you can burn them in your mitochondria is a really important step of this stuff.

We've talked about Viome as well, so we can start to quantify what's going on in there, which is really cool. It's a neat idea to run an experiment and say, "I'm gonna do a test before, take the enzymes, take the P3OM, and then see what it looks like later," and you really ought to see a change, which is kinda cool. And assuming that you guys have quantified.

So, thanks for that. It was code BULLETPROOF20 at BiOptimizers.com/bulletproof, which is pretty cool, so thanks guys. And thanks for being on Bulletproof radio.

Matt: It's really been an honor.

Wade: Yeah. Thanks a lot, Dave. We really appreciate being here, and we can't wait to play around in this amazing facility you got.