

Announcer: Bulletproof Radio, a state of high performance.

Dave: You are listening to Bulletproof Radio with Dave Asprey. Today's cool fact of the day is that your body kind of cheats when I say it cheats, it cheats chemically. Instead of using normal chemical reactions that we're used to, the realm of biochemistry relies on enzymes, which in the realm of quantum biology, we're starting to understand, allow us to do things way more effectively and efficiently through mechanisms but we're still kind of figuring out. Bottom line is you wouldn't exist without them because it would take too much energy to run your body and metabolic enzymes catalyze and regulate every biochemical reaction that happens in your body, which means that for your cells to function and for you to be basically healthy or even dare I say it, to kick ass, you have to have metabolic enzymes.

Dave: If you want to live for a very long time, they better work very well. It's particularly important that you have metabolic enzymes that work well. And then on top of that you have something called digestive enzymes that turn the food that you eat into energy, and they don't do it all by themselves, but they're a critical part of breaking down the food so that you can use it in your mitochondria. And your body will produce digestive and metabolic enzymes as they're needed and that's important because you have about 1,300 different enzymes in your cells and the combinations of those enzymes in the stuff you eat makes about a 100,000 different chemicals, the ones that let you see, hear, feel, move, digest, think, love and even hate. So enzymes matter for making you who you are.

Dave: Now, food enzymes come into your body through the raw foods that you eat and through taking enzyme products and raw foods include some fermented foods and includes raw meat, which has enzymes. That's why meat will spoil, and it includes raw vegetables. The problem is that raw food only has enough enzymes to digest that particular food. It's the type of enzyme and the volume of enzyme. So if you eat a salad, it's not going to give you enzymes to say digest a steak, it just doesn't work like that. And if you burn the crap out of your steak, A, you're a bad person, and B, well you won't have enzymes in it. If you eat it rare, there's probably some enzymes left that could be beneficial for you. So when you cook, and you process your food, it destroys enzymes. It also destroys anti-nutrients that are in the food.

Dave: So you're damned if you do, you're damned if you don't. Did you know enzymes were that important? You might not have, but it's a long cool fact of the day. But understanding that side of how to hack your biology is pretty important. The real meaning for this is that ultra-processed foods have zero enzymes. And the rule that really underlies the entire Bulletproof diet is do less of the things that make you weak and then do more of the things that make you strong. I can tell you, eating foods that will not spoil is bad for you. And eating foods that are spoiled is bad for you. And that's why the quality of food is so terribly important and you want to protect yourself from both sides of that equation. And you also want to protect yourself from the painful condition of perfectionism in your food. And there are hacks to do that.

Dave: In fact, we're going to talk about that on the show today. If you like the show, you should definitely be following me on Instagram, Dave.Asprey. I talk about this kind of

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stuff on my page, especially my stories. And you'll see these walking bags of enzymes that are in my front yard called sheep and pigs and now with the baby turkeys. So you'll actually realize that I really do all this stuff that I talk about, it's real. Today's guests are live with me at Alpha labs. They drove right past the pigs and the sheep on their way in, but they didn't see the turkeys because they're still in the garage, it's raining. They stopped by last summer to talk about enzymes and digestive health, and you'll want to look at episode three, sorry, episode 515 called How to BiOptimize Your Gut and Digestion and it turns out that was number eight on the most listened to Bulletproof Radio podcast of all time, which is why I had the guys back here.

Dave: I'm talking about Wade Lightheart and Matt Gallant who are the, "we fixed digestion guys," and the co-founders of a company called BiOptimizers that focuses on enzymes and a bunch of other cool stuff. Wade is a former three time Canadian natural bodybuilding champion and Matt is experienced strength and conditioning coach for professional athletes, self-defense instructor, and he's been working on making supplements for more than a decade and today what you're going to hear about is what enzymes do, especially in conjunction with the ketogenic diet and the Bulletproof diet, which includes times when you're in Ketosis and times when you're not in Ketosis because the straight up Keto bro-diet will not do good things for you. This is something that I experienced in the 90s we've known this for a long time and right now the Ketosis has gone off the deep end where if you have one gram of carbohydrates, you're a bad man.

Dave: Like, come on guys, like you're not going to... this is not going to end well. If you're a man, it'll end in erectile dysfunction and bad sleep. And if you're a woman, it'll end up sooner in bad sleep and hormonal dysfunction. But either way, it's okay to have some carbs for your gut bacteria and enzymes are a major part what you have to do in Ketosis. So Matt and Wade, welcome back to the show.

Matt: It's great to be here.

Wade: Yeah, great to be here, Dave.

Dave: All right, because you're listening in your car most likely or maybe at work. Matt, give us your voice again. Say something.

Matt: Yeah, it's great to be here. Excited to really talk about how to biologically optimize the Bulletproof diet to the next level. I think we've got a lot of exciting insights around nutrigenomics and hacking the problems that most people get on Keto in Bulletproof perhaps.

Dave: All right, so that was Matt's voice. Now Matt is our supplement formulator, self-defense instructor. And he's a-

Matt: I've doing Keto for 26 years as well, on and off but I've been on non-stop for four now.

Dave: Nice. And you've had one gram of carbs?

Matt: A little more than that. Yeah, we can talk about carb cycling, but yeah.

Dave: So one of my favorite things to do is to bait self-defense instructors to see if I can get them to hit me, and that's actually a bit more dangerous than baiting these Canadian natural bodybuilding champion. Because when you're being a bodybuilding champion is kind of legit weighed but when you add natural and then you add Canadian, I mean like how many natural Canadian bodybuilders are there? Like two?

Wade: Maybe.

Matt: But there's one thing too that made Wade's story extraordinary was, he did it as a vegetarian at the time, and it's been a venture for a long time. So one of the things that's interesting about Wade and I is, he's vegetarian, I'm Keto and we found, I guess universal nutritional principles that work for both of us.

Dave: Yeah, there are ones, and it's okay to... And if you're listening, not watching this on YouTube, both these guys are like twice as jacked as I am. So I'm just making fun of both of you at my own peril. All right, so Wade, give us your voice real quick so everyone knows what you sound like.

Wade: Yeah, so I'm Wade and I'm the weird vegetarian natural bodybuilding guy that used enzymes and-

Dave: With like 96 inch shoulders, I got. All right. A lot of people didn't hear our last episode where we talked about how a vegetarian bodybuilder and a Kinesiologist, self-defense instructor, a supplement formulator guy got together to make a nutritional supplement company. Just walk me through this unlikely pairing so that people listening understand, why do you guys know what you're talking about?

Matt: Well, again, I've got a degree in Kinesiology and Science of Physical Activity. And the first time I ever saw Wade, I was 19 years old competing in a bodybuilding competition, and I was walking out of the waiting room on the Friday, I turn around, and I see Wade with a huge lot spread, stepping on the scale. And I just remember looking, "Damn, that's a huge back." I didn't know who he was, we didn't talk and the following day he actually won the show. But again, we didn't meet that day, but I remembered him and then about four years later, I was a personal trainer at the gym. We're both from the East Coast of Canada, Moncton, New Brunswick. So he came back to see his parents, came at the gym, and we just connected and became friends, and next thing I moved to Vancouver where he lived.

Matt: He hooked me up at [Rose gym 00:08:44], we were both trainers at Rose gym, downtown Robson. And next thing you know, I was, I'm launching my online marketing career and businesses, and I thought Wade was highly marketable. The fact that he was a natural bodybuilding vegetarian champion was very unique. So we did a program called Freaky Big Naturally.

Dave: Freaky Big-

Matt: Naturally.

Dave: Naturally. This is like in the 90s or something, or early 2000?

Matt: This is 15 years ago.

Dave: Okay.

Wade: 2004, I think it launched then.

Dave: The heydays of Internet marketing. All right.

Matt: So it was a success right away, and then about a year later we actually launched Masszymes, it has been around for that long, and we had both become huge fans of enzymes. We had met a doctor who put us on a massive dosage of enzymes.

Dave: These are digestive enzymes or metabolic enzymes?

Matt: Well, the thing with enzymes, if you take them empty stomach they become metabolic, if you take them with food they're digestive. So we were doing both. We were taking a lot of enzymes, waking up, before bed and a lot of enzymes with the food. And in 90 days, both of us transformed, like body fat went down, muscle went up, energy, your brain, the Mitochondria was just really happy. So it made us huge fans and then we decided, okay, how can we make enzymes even better? How can we build an enzyme formula specifically for people that work out that need more proteolytic enzymes that breaks the protein down. So we built Masszymes and another claim to fame that we can stake is that we were selling hemp protein also about 14 years ago.

Dave: Before it was legal?

Matt: Yeah, before it was legal and before vegetarian or vegan stuff was cool and hot. So yeah, then the rest is history.

Dave: Nice. It's funny because, I mean in your online stuff, you've talked about how that doctor actually cured himself of cancer using enzymes, which is, people are going to be listening going, what the heck? The anti-aging non-profit group that I've run for about 20 years, I learned about enzymes sometime around early 2000s and went through about a three to six month period where I just took a 100 capsules a day of enzymes, systemic enzymes on empty stomach. And yeah, it really does transformative stuff, it's digesting all this stuff your body didn't have enough excess enzyme capacity to get rid of. So there is a long, at least 20 year history of doing this and there's also a bunch of the raw food, and I apologize for saying have to keep in mind, I was a raw Vegan, a devout one with a huge blender and giant salad bowls and all that crap.

Matt: [inaudible 00:11:19].

Dave: Yeah, okay. All the raw food nonsense, if I can just say it because it has enzymes, which is like, if you've seen the movie Idiocracy, like, "Oh it has electrolytes," and they're spraying Gatorade on their crops and trying to figure out why they don't grow. So the idea that just because it has enzymes you should eat something raw is not born out by nutritional science. And that said, if you don't eat anything raw, it's not ideal either. So how do you navigate that stuff? And that's one of my first questions for you guys. So it goes back to the cool fact of the day, right? If I eat it raw, I'm going to get all the lectins. I'm going to all the other plant defense compounds. I'm going to get all the plant viruses, which are a massive issue that no one talks about. I'm going to get the slug poop that contains rat parasites for rat, heartworm, and people just died of that in Hawaii.

Dave: So you might want to cook some of that stuff, but if you cook it then I can't get use of my digestive enzymes. So what's the deal?

Matt: The deal is taking the right enzymes for the foods you're eating. So if you're eating a lot of protein, then you want proteolytic enzymes. Today we'll talk quite a bit about lipase because that's really important enzyme on the Bulletproof Diet or Keto. And a lot of people are deficient in lipase, and a lot of people that have coached on Keto, they get elevated cholesterol levels, which a lot of times can be correlated to lipase deficiency. And again, if you're eating salads than cellulase and other different types of enzymes, we'll break that down. If you're eating carbs, then there's a whole amylase and glucoamylase that will help break the carbs down into glycogen. At the end of the day, when we're eating food, what we want is the food needs to be broken down either into glycogen, amino acids, or fatty acids. That's what we need. That's what our bodies run on. And if we can't do that, then we can have health issues. Like an allergy is an undigested protein that the body saying, "Whoa, this is a major threat to me. I can't break this down, and it's toxic," and undigested fats can also create problems. So that's really what enzymes do.

Wade: Yeah, I mean, I think he covered most of the enzyme equation. I think a lot of people, there's a concept that Dr. Edward Howell, kind of the godfather of, the pioneer of enzymes, which was the enzyme bank account. And so just to... I think what happens to a lot of people is, they get polarized by its either this or that. And really you're looking at what is optimization, and his whole concept was is that you had an enzyme bank account that depleted over time and this would be transferred onto a future generations, which would breed weakness and genetic illnesses and that sort of stuff. You can check it out in his book Food Enzymes or Digestive Health and Enzymes for Health and Longevity. So the goal is if you're eating on a raw food diet, the problem is, yes, your body will manufacture enzymes, but then it's not manufacturing the systemic enzymes to do all the functions that you referred to earlier.

Wade: So the concept about supplementing with a highly potent cultured enzyme is that you can actually support your enzymatic bank account. And it's also one of the reasons why people get benefits from fasting, or calorie restriction.

Dave: Autophagy requires systemic enzymes.

Wade: Yes. And that was the foundation of the cancer research by taking these proteolytic enzymes and stuff at high dosages when people are in... and we're talking super physiological, I'm not here to say it's cancer, but that was the [crosstalk 00:14:46].

Dave: That's what the book was about with the other guy. We're not [crosstalk 00:14:49].

Wade: That's what they said but the bottom line is, is that where the very supportive researcher was in. So we took that concept in plight into the athletic world and it just so happened I was running a holistic health clinic at the time and I got to experiment with a wide variety of people of different backgrounds, different diets, different conditions, all that sort of stuff. And when the one thing that we came up with is if you start supplementing with a really good enzyme, you can produce a faster effect on pretty much anything. Because enzymes just really speed up reactions.

Dave: Now the idea of them speeding up reactions is really interesting. And the idea of catalyzing a reaction, you can put two things together, and they might take two days or two months to do a chemical reaction using the normal physical chemistry that you probably saw in the first chemistry class you ever took, vinegar and baking soda kind of things. But you add a tiny amount of an enzyme, which can capitalize the process, and it might happen a thousand times faster, right? With the same amount of energy. So it's literally breaking the rule and no one could explain how enzymes work. And that's why if you go to college, you take biochemistry, and you learn all this weird stuff, and you take regular chemistry, and it's not the same stuff that you learn in biochemistry.

Dave: The operating theory is that there's a quantum biology effect with electron tunneling or something. No one really knows how enzymes work. We're unlocking that at universities around the world right now. But we do know, which ones do what things in the body pretty well. But when you get down into the sub-molecule range, I think it's still a mystery. I mean, do you guys have any light on the mystery I haven't read about?

Matt: No, but I have a theory. So again, enzymes do about 25,000 different functions. My belief is that the body can transform enzymes into different enzymes in the body based on what it needs. So this another good reason to again, load that enzyme bank account. And if your body needs to produce certain types of enzymes, then again, my belief is that it can do that quantum jump from one type of enzyme into another and give us what we need at that time.

Wade: And I would add to that one extra piece, so for example, there would be families just like genus of species. So a proteolytic enzyme would be more proteolytic dominant enzymatic function, so lipase would be more lipolytic, those families. So there is a benefit for taking specific enzymes based on your life, your genetics, and your particular diet because I believe that those families convert. Certainly the anecdotal evidence supports that, we're not to the phase where we've got scientific validation yet, but that's what we've experienced.

Dave: My theory on that might be a little bit different, and it's that your pancreas into a certain extent your liver, can make a bunch of these enzymes and if you take a lot of

enzymes, the requirement for those enzymes goes down. Your body has amazing ability to manufacture all kinds of compounds, and some of them are more mission critical than others, and your body keeps a list somewhere. It's an emergent list of stack ranked importance to survival, and it will always take an electron and allocate that electron to the thing that it believes will keep you alive the most. And that's why if you're in fight or flight state, you won't digest because running away from the tiger was more important than breaking apart the steak you just ate. Right?

Dave: And that same rule says, okay, I needed two enzymes, I needed to digest protein, I needed you to digest fat, and it's going to make one of the two, if it only has the number of electrons required to do that, and it'll run this complex calculation that says, okay, how many electrons does it take to manufacture lipase? How many am I going to get back and how many to manufacturer protease and how many am I going to get back? I haven't seen evidence that the body can take this protease and then convert it to that one, but I could see that being real. But what I do know is that the pancreas will always manufacturer the enzyme that is at the top of that stack.

Dave: So if you take a bunch of enzymes, and it reduces the number of electrons required to generate any electron, you will have more of the ones you need because you basically knocked a bunch of things out of the stack. So the order of priority shifted. Do you have any idea whether it's okay, we're just allowing more manufacturing capacity, or we're actually transforming enzyme A and enzyme B?

Matt: I think both.

Dave: It's both. Okay.

Matt: I think it's both. So the way it works is, let's say I started eating a steak right now my brain is going to recognize that I need protease and lipase and start producing those usually right in saliva, like amyloids will be produced right away.

Dave: So amyloids is carbs, protease is protein and lipase is like lipids or fat. Okay.

Matt: Yeah. So as I'm eating and chewing, that's one of the reasons why chewing is important because we want to tell our brains what enzymes it needs to make and then those will start being produced in the mouth and then in the stomach, but the thing is over time, as we age, our enzyme production typically goes down and there's a lot of signs of that. One is constipation, bad digestion, bloating and gas, even neurotransmitter production. Because one of the really important things that we get from breaking protein down into amino acids is your neurotransmitter production, which is what our brains need to feel happy, feel good and I'll give you an example. My friend Frank, who's 78, I think about four years ago, he started taking Masszymes and he got off all antidepressants.

Matt: So obviously his body was not, and I'm not saying get off antidepressants if you are on them, but for him, he wasn't being able to break the protein down into aminos and produce the Serotonin and all these things that made him feel good.

Dave: The basic principle behind Headstrong, my book, was really straightforward. If you can effectively turn food and air into electrons, your brain will work better. And let's see what happens before the food enters the mitochondria? Enzymes break down the food so that it's very basic particles. It's either Amino Acids, glucose, or Beta hydroxybutyrate, which is what brain octane turns into. So it has to be one of those three things before it can combine with Acetylcholine enzyme and enter this. So if the problem is that, "Oh, my cells work fine, I just can't break my food down to get it into the cells." Well of course you could have depression. You could have actually every disease of aging that I've been able to identify is associated with mitochondrial dysfunction. So like, hey, maybe in a car analogy, if you solve a car that uses gas, like, "Oh, I put gas in the tank, but the fuel filter is clogged, and I can't get the gas from the tank into the engine to burn it. So the engine doesn't run very well." The enzymes are solving this problem in humans.

Matt: Yeah. In fact, your book, Headstrong, was a big inspiration for our new product called Capex, which does exactly what you just described.

Dave: Sweet. Tell me more about it.

Matt: So again, the issue when you're eating a high fat diet, which is what we do on Keto and Bulletproof, and sometimes Paleo to a certain degree is first we need to break the fats down into lipids, fatty acids and then be able to burn those fatty acids into our mitochondria. So if you're not producing enough lipase, you're going to have digestive issues, and Wade, maybe you can talk about your experience in Keto because Wade did a recent experiment, and he was having that issue.

Wade: Yeah. So one of the things being of a Biohacker it's, "Hey let's experiment and things." So I attempted to do the ketogenic diet because I haven't seen all the positive results and had read about it. One of the things that happened, there was a couple specific areas that I struggled with. One was I could tell I wasn't digesting the fats because I was getting oily stools on it. Second thing that was happening is I didn't have the same pop in the gym, and I would say I'm not really a vegetarian, I'm a Carbivore.

Dave: And bad man.

Wade: What I believe in, and even... and I don't know whether that was from my years of bodybuilding because I was in the old school bodybuilding, it was high protein, high carbs and low fats and got myself down to dangerously low levels of fat and suffered the consequences of that. So since that time I've always found ways to add enough essential fatty acids but I always had trouble with that. We talked about that, and I said, "I bet you there's a bunch of people," because I do think that there's a genetic factor in which diets are easier for people to commit or a heritage or social structure. And I said, "There's something going on in my body that's not able to metabolize these fats." And we started attacking the problem and Matt having so much experience with the Ketogenic diet, and we got into all these different types of lipase.

Wade: I even wrote a paper, funny enough, those things comes full circle because in university, in my first nutrition course I wrote a paper on MCTs and Acyl-CoA and the carnitine shuttle and the whole [inaudible 00:23:45] and then here we are 25 years later talking about the same thing that I was learning about back then. So it's kind of ironic, and the good news is, is if you have an itch, you got to fix it. I wanted it to fix this and that's where this led to.

Matt: So Kip Exos has four different lipases that work at different PH levels. So as you're digesting food, the PH actually changes.

Dave: So some people don't know about PH other than PhD, defined PH.

Matt: It's either acid acidity or alkalinity. So seven is neutral, above seven is alkaline, below seven is acidic. So our stomachs produce stomach acid, which is obviously very acidic, extremely acidic. And then as it's going through the intestinal track, the PH changes so we the small intestine and then the large intestine. So the lipase is, again, work at different parts of that and we have four different kinds. The other thing that we put in to help with fat digestion is dandelion root extract, which helps stimulate bile. So to break fat down, we need bile, and a lot of people sometimes have bile production issues.

Dave: In fact, one of the reasons that I partnered with you guys and invited you to be sponsors of the show today is that, this is a well-formulated supplement, and since the start of Bulletproof I said, "I should make a protein digestion thing." I've recommended enzymes in my book. I actually talk about how I took lipase while I was developing the Bulletproof Diet to make sure that I was digesting all the fat that I ate simply, so I could show that I wasn't... when I was eating 4,000 or 5,000 calories a day and still losing weight, which is not a good idea by the way, but I was doing that and said, "Well, maybe it's because I'm just pooping out all of my fats." So I can't digest it. I'll take lipase and Betaine HCl, all of the things I can to make sure that I'm actually absorbing this stuff and the energy is going somewhere.

Dave: I think it was going into healing, and it was going into all sorts of autophagy and other good stuff. But the idea is, I support the notion of using enzymes and having a well formulated thing. There's also a section of a chapter in the Bulletproof Diet on bile flow itself and how bile stores toxins and if you can stimulate bile flow, what you end up doing is detoxing because bile stores enormous amounts of toxins. And this is going to sound crazy, but you know that activated charcoal, it sticks to bile and makes you poop out bile so you have to make more bile, right? So by using dandelion root in Capex, I think you've done something elegant because anytime people have more bowel flow, they're probably going to live longer. That's my assessment after looking at all of this. So tell me what you got, you got four kinds of lipase, different PH ranges. What else?

Matt: Okay. We've got the HCl, which is stomach acid. We got dandelion root extract. Then we have the same blend that we have in Masszymes on the proteolytic side to help break the protein down because on Bulletproof and Keto, obviously there's still a lot of protein. It's obviously a lesser dose than in Masszymes, but it's there. But that's just the beginning. So that's phase one. Then what we want to do is drive those fatty acids into

the Mitochondria. So how do we do that? Alcarntine but that's the only the next piece. Then we have several key ingredients that increase the fatty acid oxidation in the mitochondria. So the first one is 7-Keto-Dhea, which is an extremely expensive ingredient as a side note.

Dave: Oh, yeah. Now, how much of that is in there?

Matt: Enough to stimulate three enzymes in the liver. So when you take 7-Keto-Dhea, it actually stimulates fatty acid oxidation in the liver. And the enzymes that it stimulates is fatty acyl-CoA, oxidase Malik enzyme, and glycerol-3-phosphate dehydrogenase.

Dave: You just lost pretty much everyone listening.

Matt: Anyways, but it increases those enzymes from anywhere from 100% to 800% in-

Dave: Dhea and pregnenolone are-

Matt: Not Dhea though, this is 7-Keto.

Dave: Yeah 7-keto, it's a form of Dhea, right? And it's one that that goes down a different pathway. Women usually take 7-Keto DHEA and men can take 7-Keto or just regular DHEA but it's a precursor to almost every hormone in the body, whether they're the estrogens, some of the stress hormones, and certainly the testosterone like the androgenic stuff, and the anabolic hormones. So, I mean, is this going to be appropriate for someone who's 20 versus someone who's, if you're over 30 or 40 you probably need DHEA. In fact, my new book, Superhuman, I write about, here's why DHEA matters as you age. I mean, is this the same level for 20 somethings?

Matt: Yeah. I mean, again, the 7-Keto DHEA doesn't have that many effects on the testosterone pathways. So again, these were more effecting your liver enzymes, which will help raise your metabolic rate. Again, help burn more fatty acids in the liver, which gives us energy and may help lower triglycerides in the liver.

Dave: So how many milligrams are we talking about?

Matt: I believe it's 0.4 milligrams per cap, which again, if you take the full dose, which supposed five to eight caps a day, that's enough to stimulate it. But that's just the beginning.

Dave: So 0.4 times eight caps, you're still looking at like three milligrams. So by comparison, if you're on an antiaging regimen, you might take 25 milligrams of 7-Keto twice a day.

Matt: Correct.

Dave: So this is micro-dosing of the [inaudible 00:29:02]?

Matt: Correct. We're trying to stimulate [crosstalk 00:29:03].

Dave: All right.

Matt: But one of the key ingredients is called InnoSlim. So InnoSlim actually increases-

Dave: That the worst name ever.

Matt: Yeah, we didn't create that ingredient, but-

Dave: A-N-O-S-L-I-N?

Matt: Yeah, I-N-N-O Slim.

Dave: A-N-O Slim.

Matt: Double N. InnoSlim, yeah. So it increases AMPK in the muscles by about 52%, in the fat cells by about 300%. And AMPK some people call it the metabolic master switch. And what it does, it also helps stimulate fatty acid oxidation, which here is another energy booster and it also has been shown to increase the size of your Mitochondria. So in other words, if we look at Mitochondria as the engines of our body, what we're doing with Capex is one, we're getting way more fuel from our food, we're transporting the fuel into the engines, we're revving up the engine, and we're improving the strength and the size and the horsepower of that engine. We also have CoQ10 which is a mitochondrial boosting-

Dave: Yeah, relatively low doses of it.

Matt: Yeah.

Dave: You don't need that much. Okay.

Matt: Yeah, exactly.

Dave: At least not for this use, I think 300 milligrams a day is a great dose if you want to live a long time. But this isn't a cookie den supplement. This is using it as basically a catalyzer.

Matt: Yeah. And all of them combined produce a synergistic effect in terms of energy that I would say rivals a cup of coffee. So here's two store Anecdotes. First Time I got the formula we have now, which is the samples. I took it at 3:00 PM, I took five capsules on an empty stomach. It took me three hours to fall asleep that night and repeated that experiment a few weeks later, I'm like, okay, maybe that was just a fluke. I took five capsules, empty stomach, 3:00 PM and according to my oaring, it took me two hours and 55 minutes to fall asleep.

Dave: So there's no stimulants, so there's not that [crosstalk 00:30:57].

Matt: There's no stimulants, it's all mitochondrial energy, which is awesome. So the thing is, if you want an energy boost from Capex, you take it early in the morning, it'll last eight to 12 hours. And then if you want to get more out of your food, you take one to two caps.

Dave: Now, all of the research that I've seen says that if you increase mitochondrial function, you actually get higher quality sleep in less time. So you couldn't fall asleep but when you did fall asleep, did you wake up feeling all right?

Matt: I did. I actually felt awesome with less sleep.

Dave: And a lot of people when they go Bulletproof, I need an hour less sleep. Like, I feel great, and I'm at six hours and five minutes for seven years now or something. Like that's what my body needs when I eat right.

Matt: Yeah, no, I used to be an eight to nine hour a night guy. That was about four years ago. Got my oaring, do how much deep sleep I was getting?

Dave: Probably five minutes if you're in Ketosis all the time.

Matt: I was going about five to 50 minutes.

Dave: It's predictable.

Matt: So then I started hacking my sleep and now I'm about six to seven hours in my deep sleep is usually 75 to 90 minutes, my Rem two hours plus. So yeah, I'm waking up... I used to wake up after eight, nine hours feeling like garbage. Now you're feeling like, what the hell just happened? Like almost like a hangover and now I sleep less and feel incredible. Wade, maybe you can share your experience as far as the energy effect that you've experienced from Capex, because again, Wade is one of those guys that probably is lipase efficient, doesn't break down fats easily as he alluded to. But you had some pretty dramatic results from Capex.

Wade: Yeah, it was huge. First of all, there was an instant attraction to consume more fat in my diet, which always was something I struggled with. Like I always... with supplements it's kind of like you forget the things that you need the most. I find there seems to be like this default system and all of a sudden I started taking it and I was like, I was actively seeking out more fats in my diet because I think it was actually supporting me in a way that I wasn't being supported with my diet limitation. Because every diet has advantages and limitations. So that was exciting. But I tried it in the blind because he had not revealed any data to me and-

Matt: None.

Wade: I was like, come on, tell me anything. He's like nothing. So I did the same dosage, five capsules and then I did five capsules. Again, I did a dose first thing in the morning at about 6:00 AM and I took another one at 3:00 I had the same thing. It's 1 o'clock in the morning, and I'm like, "I feel amazing." I'm on my computer and... it's like I don't want to

go to sleep. And the other thing was, and then I did an experiment where I went on to a vegetarian ketogenic diet. I'm like, "Well, after a week, let's see if we can go somewhere." Again, no fats in the stool. I felt great. And I had pop in the gym, which I didn't have before. So I realized that this was solving a problem that prevented me from experimenting or exploring a high fat diet. So the energy level was great.

Dave: So capex cured your vegetarianism?

Wade: Maybe. But I got to say there's another hack that I really like. I really like it by taking it with a few ampules of the unfair advantage. I got to say that it's a tricky hack that I like and it's awesome.

Matt: You're the PQQ, that's an unfair advantage just synergizes even more, get some mitochondria even rocking even more. So it's a great stack and of course symbol approved coffee in there and you're on fire.

Wade: You throw that in there, and I would actually add KetoPrime to that, which is-

Matt: That's another, I was going to say that, I was going to... if you're going to add that because those are my two favorite products that you've made for me and I carry those all the time.

Dave: They're very targeted mitochondrial stimulators, but when you guys are doing it, it's necessary like the bio electronics approach, and this is in all of my books, even going back to the Better Baby Book... Like people grow supplement companies and it's all good because there was no way that one company can make everything that's required. And I'm frightfully concerned about the path of the Keto Diet right now. And I know that Bulletproof is one of the companies that help to put it on the map, and it's like cyclical clean Keto is a very different animal than this kind of dirty Keto path. So tell me what you've seen in the Keto movement and tell me like what you're doing about it.

Matt: Yeah, so I think we used to segue into nutrigenomics, which I think is really the keys to optimizing the Diet. Because people look at Macros, right? Fats and proteins and carbs, but that's just level one. Our bodies will not digest and breakdown foods the same way based on our gut biome and based on our genetics. So for an example, there are some Keto genetics, so FAD 1, FAD 2 are genes that basically allow us to do better on meat and seafood based diets. So if we don't have those, we might have issues. Now people that are Caucasian that are from northern climate, most of my genetics are from Northern European.

Dave: Yeah, me too.

Matt: We tend to do better. Why is that? Because-

Dave: To do better saying eating?

Matt: On Keto.

Dave: Okay.

Matt: Why is that? Because we had to survive hard winters, no fruits, very little vegetation. We had to live on animal fats. So there is, what they call the Arctic mutation gene for fatty oxidation called CPT1A, which they found in Eskimos in [crosstalk 00:36:32].

Dave: First nations people who live up here on Vancouver Island, a lot of them have that.

Matt: Right, and they can live off seal blubber and feel awesome, right?

Dave: Right.

Matt: So some of us have that gene, about 81% of Canadians have that variant of the gene. So I think looking at your genetics now, if you'd go for an example, I live in Panama. As you get closer to the equator, there's an abundance of fruits, right? Like in Panama, you could live on the streets and just live off fruit trees for free. Like there's mangoes and then bananas and pineapples. Like, it's just an endless parade of fruits. So they metabolize carbs and even rice, they're born on rice. So from a genetic standpoint, they can break that down, and it was a really interesting study last year with worms, and they found that the epigenetics got passed on 18 generations. And that's a real mind blower because-

Dave: Wow, 18 not seven.

Matt: Yeah, well 18 because that means that what your grandfather ate, and your grand grandfather ate is affecting your ability to break down food right now. So it's also helpful to look at what your ancestors ate. And I think there's also the factor of what we ate as a kid really influenced our gut biome. So for an example, like my father, my grandfather, and my grand grandfather were all farmers, and I grew up eating a lot of potatoes. My fattened dad still plant's potato, so I can't eat-

Dave: It's a European thing, right?

Matt: Yeah. I can eat like two pounds of potatoes and just incinerate them, right? Not that I do that very often but-

Dave: Do you get rheumatoid arthritis and leaky gut from them? The way Wade and I do or no?

Matt: I don't. I consider it, but if I eat rice, which I never really ate as a kid, I get constipation.

Dave: You eat Brown or white rice?

Matt: Either or.

Dave: Because brown rice is nasty. People just stop eating that crap.

Matt: I agree. Yeah, I agree.

Dave: Keep going.

Matt: But my point is that either or, I can't really break down rice. It constipates me.

Dave: Okay. But with your enzymes you should be able to just power through, right?

Matt: Of course, but I'm just talking about like-

Dave: Naturally.

Matt: Yeah. Like I used to go to Japan quite a bit, and sometimes I'd run out of enzymes, and I'd have some issues. So yeah, you can hack that with enzymes obviously. But my point is that by looking at Viome tests, and I'll give you an example. So once a week I eat a Keto salad, but what's in that salad are all the super foods that my Viome results spit out, and I can eat two pounds of the salad. It's mainly like arugula on water cress, and a few other things and my body incinerates that salad. Why? Because the gut biome I have will digest those foods very easily. Those I can just utter foods, which my gut biome tests don't eat, for example, chicken, which I kind of intuitively never liked and they say avoid. And when I eat it, I don't digest that that very well. Of course, I can hack that with enzymes.

Dave: You're not made out of dinosaurs. I mean, we're made other red meats. Sorry.

Matt: Yeah, so I think that's a big deal. I think there is definitely a lot of genetic factors. So getting a 23andMe, you can download that data. There's softwares like Promethease and hiring a nutrologist expert to actually go through your genes and optimize your food and your supplements and... even like coffee, for me, I'm a slow caffeine metabolizer, so if I drink more than one coffee a day, I'm going to have some issues. So one coffee a day is good, just had an Espresso with Dave, it's delicious. But if I have two or three, I'm going to have problems. So it's really valuable information, and I think it gets us out of the Dogma and the rigidity of whatever diet philosophy people are exploring.

Dave: So you would say, take your 23andMe results if you have them and run them through Promethease.

Matt: Yes, and that can higher nutrition genomic because it's so deep, like the girl that we use, her name's Katrina. You can email us, and we can do an intro. But she, for an example, when she started doing these results debriefs, she spent 35 hours preparing because there's so much data, right? Like right now, and it's getting-

Dave: It's crazy.

Matt: Right now it's getting better where the AI and the machine learning and that the reports it spits out. I know [inaudible 00:40:58] just like fitness DNA companies and stuff like

that. So I think in two or three years, we'll get all those insights handed to us. But the 23andMe insights that it gives us are very rudimentary. It's not very useful.

Dave: I had a whole human genome sequenced about six years ago.

Matt: And by the way, the price on that has just dropped.

Dave: It's come down amazingly. I spent, actually, I think it was supposed to be like 25 grand, but I got-

Matt: I think, it's down like 4-500 bucks.

Dave: Yeah, and if I can get it for free, if you want to give up all your data forever, which is crazy because it was \$100 million for Craig Venter to do that. And Bob Horary, has been on the show, we've talked about that and with the notion of functional genomics, I mean, I've been working with a company called Nutrients, that hooks me up with, again, a functional coach, right? And the idea is if someone tells you, "Okay, these are your weak spots, and these are your strong spots and this is what your genes want you to eat." And then you get a Viome test, by the way, I think you can use code Dave on the Viome site, and they do something nice. I don't even know what it is, but Naveen's a friend, I'm an investor and an advisor in biome, like one of their first advisor site. I went really deep on the tech there. That stuff's real.

Dave: So all of a sudden you're like, "Okay, my gut bacteria want one thing, I got this from my mom, I get this from my environment, my genes, which I got from both parents want something else." Right? And then you take that, and you catalyze it all with enzymes, and you make sure you're eating the right foods, you're getting enough of the other nutrients but any enzymes usually require metals too, like little bits of zinc or copper or things like that. Or magnesium, which is really common in them. So you have all those things present, all of a sudden, your ability to make yourselves do what they want to do with less energy seems like it can manifest itself.

Matt: Yeah, I agree. Actually we're releasing what I think is going to be the best magnesium product yet at the market in the fall. So we're huge fans of magnesium medicine, and as a protocol this is a little tangent here. I think everybody should do a massive 90 day magnesium loading protocol.

Dave: How massive is massive?

Matt: You're going to go to the bathroom quite a bit, like four to five grams. Yes, the disaster pants protocol. But if you spread the dose like four or five times, you really minimize that, and certain magnesium's will not pull the water as much as others. So we've designed ours to minimize that effect, but it has a huge effect on the nervous system. And I'll give you a story. I fried myself on coffee. Okay. Going back to the slow caffeine metabolizer.

Dave: It can be done.

Matt: And actually I remember messaging you about it, "Hey Dave, is there anything I can do about it?" You just said, "Don't drink it." Well, what I did about it [crosstalk 00:43:38].

Dave: [crosstalk 00:43:39] take a break.

Matt: It was, but what I did that allowed me to start drinking coffee again is I did that magnesium loading protocol, took four to five grams for 69-90 days, improved my sleep, it calmed my whole nervous system down. And now I can drink coffee again.

Dave: Now did you take potassium with it?

Matt: I do. I take a cream of tartar, so I kind of make a huge water blend in the morning with cream of tartar, and a lot of salt. And I drink that throughout the day because on Keto that's the other issue, we need to hold our water in because we'll just lose the water because we're not having to glycogen holding it.

Dave: That's when you burn fat it makes water and you pee it out, anyways.

Matt: Right. Yeah.

Dave: All right. I would just caution people listening. If you're on medications, or you have any electrolyte imbalance, taking five grams of magnesium a day could cause massive problems, especially if there's a potassium deficiency. So like actual what point... Like get a blood test first, get a urine test, talk to your doctor.

Matt: Yeah, always talk to a doctor before doing any protocol including that. But I know we'd had very positive results as well.

Dave: I mean, I do about 1,802 grams of magnesium a day and I have for 20 years. And at least 800 is what I've talked about on the website. I guess that maybe there's some days where I do slightly less than that, but that's about where I go.

Matt: By the way, and I've done 40 years of Zen four times, which has been-

Dave: You're up to four now, I only knew about three. Cool.

Matt: Yeah, which has been one of the best investments of my life.

Dave: That's the neurofeedback program that I started.

Matt: Well, one of the things that gets taxed quite a bit is the Mitochondria and the nervous system. So that's when I really, really push it. Then of course one of the things you can do to load more magnesium in your is to go float because you're floating in basically magnesium soup. And that was a huge game changer for recovery, for day to day recovery from the training. So yeah, I mean when you're really pushing your body and your nervous system, you get to really see the effects of these types of things, and yeah Magnesium is, to me, one of my top five supplements that's improved my health.

Dave: It's on the Bulletproof top 10 supplements you should take list. In fact, it's probably number two or three on the list.

Matt: And then one more thing on genetics, some people have genetics for fasting and other people don't. And there's actually a PPARalpha gene, which they call the coastal adaptation gene. So think about the Mediterranean and just the abundance of food, all of those and berries and all these different fruits that are in abundance year long. They didn't need to fast, unlike us Canadians that were chasing animals in January and February. So they don't fast as well, so a good friend of mine who is in Panama. Hey, Jay, if you're listening, when he fast, his HRV drops, his heart rate goes up. Like he has the exact opposite stress response.

Dave: That's a stressor.

Matt: So it's another thing to look at. I'm a huge fan of fasting, I just fast in 60 hours, usually fast about 60 hours a week. Plus, I only eat one meal a day. And for me, my HRV improves, my heart rate goes down like it's a very positive thing, but for him he has the exact opposite response.

Dave: So there's this old notion from the 90s, like you have to eat six meals a day, otherwise your body would go into starvation mode and then you'll die. And I haven't really thought of it like that, but maybe there's a functional genomic type of person who actually is settled with that burden. I've always just figured, and I think it's that case where if you're hungry two hours after you ate, it's because you ate wrong. Like for God's sake, put some butter on it already. You'll be full, right. So I feel like most of the time when people do that, it's because they're eating the wrong foods or eating way too many carbs.

Wade: It's funny you bring this up. That's interesting because I was just sharing with Matt on the ride over here. I'm actually working on a concept that I learned from coaching all these people and my own life is that, the old bodybuilding diet which was, eating five to six times a day. And if you look at that, it makes sense because that's not a very high satiety diet and there's a massive amount of exercise component involved in that. Then you maybe people go to the zone diet, which would be more of a balance between aerobic and cardio. Then you get to a Keto which was very suitable in today's world where people are more sedentary, you eat less, higher satiety factors and then you have the fasting component. And I think those are really great, particularly with people who are suffering from maybe health conditions under guidance.

Wade: So I'm actually building a whole theory around that, about cycling or based on what's your lifestyle, what's your genetic type and what type of dietary practice that you can keep. And I call it the high Satiety Diet. What keeps you saturated is what's going to determine your long-term success anyways just because it's those food cravings at 10 o'clock at night because you don't have the right diet, you're not breaking it down and then you're over to the 711 God's, or Ben and Jerry or whoever it is that you're praying at that moment. And you can't hack your way out of a bad diet. You've got to hack your way into the right diet for you and then optimize from there. You know?

Dave: Yeah, that idea, you're going to exercise away that pizza and beer, it just doesn't work. It is stupid.

Wade: It doesn't work.

Matt: Yeah.

Dave: You make a good point and I think this is something that I discovered in my own learning as a bodybuilder and that was the difference between a health producing diet, and it performance-based diet. A performance-based diet may be at the cost of your health and particularly for the last, maybe up till the last five or 10 years people actually considered, what is a healthy high performance diet as opposed to a performance diet? Because most athletes were doing things like, we used to do a calorie cycling where we'd have one day where you would take, you'd be on like 1500 calories at say 200 pounds, training, three hours a day, and then you'd have one day where you're boosting 10-12,000 which would give you a metabolic response, and it would take you a boat four to five days for the inflammation to come down.

Dave: Now, did you get leaner and more ripped? Yes you did. But the cost of that, there was certain significant factors involved and so then you had to come up with ways of, well, how do you alleviate the inflammation? Right?

Wade: How do you avoid becoming a type one diabetic?

Dave: Well, it's how do you hack the hack? Right.

Matt: Well, let me get into that because it's something that I do on a weekly basis. I do carb load. First of all, one important thing is to reframe it from a cheat day to a re-feed day.

Dave: Yes.

Matt: Like I don't feel I'm cheating, it's actually part of the game plan.

Dave: Yeah, it's necessary, and you can be done, right.

Matt: Yeah, exactly.

Dave: Tell me what you do.

Matt: So here's what I avoid and you nailed, the keyword is inflammation. So for me, like the most inflammatory thing for me is A1 protein, which is the protein from cow.

Dave: Like casein protein, and for so many people it's an [crosstalk 00:50:39].

Matt: Actually if I-

Dave: By the way those people copying Bulletproof, putting milk protein isolate from non-organic cows into it and going, "It's good for your coffee." I'm like, "Come on guys, do the research." And I'm sorry.

Matt: Well, but if I would... let's say I'm on a fat loss cycle, right? So that's one of my goal is to lose fat. It would actually stop the fat loss, even if I was in a calorie deficit. If I had A1 protein on Sundays, it would stop.

Dave: Thank you for saying that, right? So there was a food that even if you're eating less calories than you're supposed to in order to lose weight, you just can't lose weight. I was still 300 pounds after low calorie for 18 months because of that thing and they'd said it was impossible. So for you its casein and for a lot of people as casein.

Matt: Yeah, that's a one. So again, bad fats, I mean, and you do a great job talking about what are bad fats on your Bulletproof guide map. I mean avoiding bad fats because bad fats are extremely inflammatory and some vegetable oils. And maybe you can elaborate on that.

Dave: Sure. Vegetables oil, soybean oil, corn oil, canola oil and anything fried even if it's fried in coconut oil and butter and things like that, it's still fried. It's still not going to work.

Matt: Yeah, so sugar, I mean the surprising thing is sugar isn't that inflammatory. Again, if it's not coming with A1 protein and the bad fats, so if you're just eating... I'll wake up, I'll eat mango and pineapple.

Dave: There's [inaudible 00:51:59] it's pretty substantial.

Matt: Yeah, well what I like to do is make my own clean desserts. They're high calorie, I'll use maple syrup, honey. You know what I mean? There is a lot of carbs because I don't want to re-feed the muscle because let's talk about the benefits of eating carbs like that for a day. One is you get a big insulin spike, which insulin has got a bad rap but only if it's chronically elevated. If you elevate it for a very short period of time it's very anabolic.

Dave: It's the Anabolic Hormone [crosstalk 00:52:32].

Matt: Yeah, bodybuilders inject insulin because insulin it's that anabolic, now don't do that.

Dave: Now check this out, in Superhuman my new book on Amazon for pre-order now.

Matt: Exciting.

Dave: I actually write about low insulin as well, and I tell you, low insulin is something that causes a higher risk of all caused mortality than high insulin. Like insulin is important, but it has to be in the right range. And you're saying spiking it briefly is okay and crushing your briefly is okay. Chronically high, trash you, chronically low, trash you. So how do you keep it in the right range?

Matt: Well I think the best move is to wear a constant glucose monitor, it is a very smart thing to do for maybe 30 days, 60 days.

Dave: Yeah, I do that.

Matt: Yeah, I mean it gives you great insights as far as what's moving your blood sugar up and down. And of course there's no... I'm excited and maybe in a couple years we'll have an insulin version of that because that'll be some interesting data.

Dave: It's going to be way more than that, and a couple of years we'll have ketones, glucose, insulin, and...

Matt: I want inflammatory markers, I want everything. Please produce that, whoever's listening. But anyways, the point is that, looking at your blood glucose is one of the ways. But going back to the benefits, another one of the big benefits is resetting your Leptin because one of the biggest mistakes you can make if you're trying to lose weight is not to do re-feeds. And when I was a trainer, I'd get clients that had destroyed their metabolism. And how did they do that? They followed extremely low calorie diet for too long, and they'd come in and where do you go? Like if a woman is eating 800 calories and you're not losing weight because your body will adapt. You can't go lower. It's not like you can go from 700 to 600.

Matt: So what you have to do at that point is actually a reverse diet where for weeks and months you're systematically increasing the calories bit by bit trying to stimulate the metabolism, anyways it's a problem that you want to avoid. There was a great study that was done last year, it took two groups. One group dieted non-stop for three months, the other group would go two weeks on and then for two weeks eat at maintenance. And the group that cycled back and forth after this experiment, their metabolism had not dropped very much. And the group that of course dieted non-stop their metabolism dropped. So the re-feeds allow you to keep your metabolism humming along, which is really, really important if you want to lose fat.

Dave: Okay, that's interesting.

Matt: So the other thing too about Capex, I want to manage expectations. It will slightly enhance fat loss and there's several different mechanisms. One is the InnoSlim, which increases AMPK, ATP in the liver, Adiponectin and GLUT-4. So GLUT-4 was made popular from the Four Hour Body by our friend Tim Ferris. And his recommendation was go to the bathroom in the restaurant for 40 air squats before you eat your meal to increase your GLUT-4.

Dave: I love the commitment.

Matt: Which if you can eat Capex, you don't need to do that.

Dave: So there's your marketing. I mean, if you really want to replace 40 air squats in the bathroom with this supplement, I'd put that on the front of the label. What do you think?

Matt: Yeah, I like that. And it increases adiponectin in the cells by 103% and in insulin resistance cells by 248%. And adiponectin is a hormone produced by your fat cells that can lower inflammation, increase your metabolism and overall fat loss.

Dave: Now, have you done... these are all studies you've done on Capex or each ingredient has a study supporting that?

Matt: Correct. Yeah, we have like almost a 100 studies supporting the science in Capex.

Dave: Okay. Got it.

Matt: And then it actually improves glucose absorption by 50% and the fat cells by 68%. So that that helps because when you're eating carbs, what you want to do is actually drive that glucose into the muscle and not you turn it into fat. Because the thing is when we're eating very little carbs like we do on Bulletproof or Keto, our bodies get very low in glycogen and then when we eat carbs, the first place it should go is in the muscle. Our muscles just suck that glycogen in. And actually we look better going back to the bodybuilding.

Dave: Well, it's part of the cosmetic effect, there's a whole science around it and you could actually see the visual differences when people get into lower body fat levels, particularly, that's more for people who work out, who would notice the differences. As guys would say, or girls, you'd be fuller or your skin would get thinner and tighter. You can only do it for a short window and then you got to get back on the horse again or they call that a spill over, and you just get bloated [crosstalk 00:57:19].

Matt: Like I'll actually be put on about half an inch on my arms from Sunday morning to Sunday night, and that's just all glycogen and water.

Dave: Yeah, because every molecule of glycogen has what? Three molecules of water associated with it? So yeah, you get that nice watery pump but-

Matt: Yeah, and what's cool too is on Monday, Tuesday, and Wednesday your dual fuel. So what happens, I'll measure my ketones on Monday. I'm still like at 0.5 which is-

Dave: The magic number, right?

Matt: Yeah. So 0.5 but I have glycogen. So I go to the gym on Mondays and Tuesdays and then sometimes Wednesday, they're just ferocious workouts. I mean, because I have the glycogen and the ketones, which is awesome.

Dave: Let's talk a little bit about probiotics. Last time we talked about P3OM, the stuff you guys make and how you do this Batman enema where you actually put your probiotics

well in the reverse entry here and hang upside down in order to get these throughout and how they flush stuff out. But what is the correlation between Ketosis and probiotics?

Matt: I don't know if there's a correlation, I think the big thing that happens on Keto, so there's some really interesting doubt on probiotics that Doctor Rhonda Patrick mentioned a couple months ago, which is, colonies and strains will actually start to die after 24 hours of not being fed. And I haven't done this experiment yet, but I want to do it with Viome. So I want to try, doing a re-feed day, doing a gut biome test, doing a few days of Keto, doing a gut biome test, and then you eating a huge salad and the next day doing a good biome test. All within the same week to see how the data changes. So that's something I'm going to do very soon because my theory is we're going to see radical differences from test to test because I think our gut biome is changing that much on a daily, weekly basis.

Dave: The data is 48 hours, I haven't seen Rhonda stuff there. She always says she's too busy to come on the show. Something to do with [inaudible 00:59:21] I think. But that's all good. What I do know though is the data I've seen is 48 hours, and I believe that the, I forgot who I talked with, Naveen about this on the Viome test that most of the species survived for a while and different species have different rates of die off, and we know that it'll shift. But I think if you are looking about once a quarter, unless you radically change your diet, you're probably going to see maybe shifts in amounts and abundance, but the species ought to be present.

Matt: Yeah, I think also, and we know that because P3OM when we freeze dry, but then as soon as the water hits it, it comes back to life. So I think even though the numbers might drop, I think they're still there. And as soon as you feed them again, they spring back to life, because a lot of strains multiply very rapidly. So like P3OM will actually double every 20 minutes.

Wade: There's another piece to that. I mean, that's what they discovered about the appendix is actually a storage reservoir to repopulate your bacteria in case of a disaster. And of course a lot of people have this out and I do believe we're looking at 12% of the emergency hospital visits today are now gastrointestinal related. I mean, that's a crazy number.

Dave: Pretty much beans, rice, and nightshades we'll do that.

Wade: Yeah. And so when you look at these compounding factors of people not taking care of their microbiome, all the processed foods, all that sort of stuff, all these things stacked on top of each other. The wide use of herbicides, pesticides, fungicides, it's just the perfect storm and now we're actually seeing that in medical emergencies not just, "Hey, I'm bloated," but 10, 20, 30 years of that you're taking a ride to the ambulance and it's not a pleasant trip.

Dave: Yeah, if you always have bad bacteria in your gut, your appendix is eventually going to say, "Why don't I store some of these?" And then you eat something that stimulates them and boom, you're not in good shape.

Wade: Correct.

Matt: I think what P3OM does exceptionally well is to get rid of bad bacteria, it's also proteolytic, so really good [crosstalk 01:01:26].

Wade: It pushes them out basically, out I'll competes them.

Matt: Actually it out competes them, and we know because we've had food poisoning. It's never, let me just say this way, it's never failed to stop food poisoning within 30 minutes.

Wade: Ever.

Dave: What about like Amoebic food poisoning, JRDS stuff like that? Or are you talking about just bacterial food poisoning?

Matt: Bacterial.

Dave: Okay, good deal. So if you could push him, he was out. You'd be kind of a bad ass.

Matt: They had not tried to Amoeba.

Dave: And the good news is, with a patent, it's a patented probiotic, with a patent, you actually have legitimate proof.

Matt: Yeah.

Dave: And that's one of my statements that I say, "Well, no patent, no proof." I think we're in the golden age of probiotic. I think, you guys are leading the way in some of the stuff that you're doing and demonstrating people is that this is a really important area for people to figure out if they want to really live long and strong.

Dave: Now I've got a final question, and I'm going to ask each of you guys separately. I think I'll start Matt with you. And last time you were on the show, you answered the three things, question that formed the game changers and three things to perform better as a human being. But now Superhuman, my new book is all about anti-aging. I'm very serious about living to at least 180.

Matt: I'm with you.

Dave: All right. So what's your number? How long are you going to live?

Matt: I'm really, I feel like 150 is very, very probable.

Dave: Okay, why?

Matt: First of all, your understanding of, again, all Sophie talked about your nutrigenomics optimizing the diet for our body, doing blood work. Again, being biologically optimized, that's one, right? So we have more data, more information, more insights, more tools in order to do that. Two, I know you're a big fan of it. I think stem cells, and there's no longitudinal studies yet on aging, but I think, theoretically and intuitively in my opinion it's a game changer. Because stem cells, if you inject them intravenously, we'll go and repair things that we might not know are broken that might not even be detected in a test, but the stem cells will go and fix.

Matt: So I think if you look at it from that, because ultimately what kills us is what we cannot see, right? There's could be systems in our bodies, different organs that are having issues that might not be detected in a test. So if the stem cells go in there and help repair and rejuvenate those things, that's huge. I think the next big frontier is genetic engineering. That's going to be a huge game changer. There's already been some really interesting experiments, for an example with rats, they changed a couple of genes in the rats. These were old rats and all the wrinkles went away.

Dave: Sign me up.

Matt: Yeah, exactly. I mean, I'm in. And I actually met a guy, in Seattle who runs a company funded by Peter Teal and he showed me his right calf that he injected with the genetic manipulator and his was significantly bigger than his left one. It was, he called it exercise in a bottle. So again, like our ability... because I really feel like for an example, the fat loss epidemic that's global, the only way to solve that for the masses is going to be genetic engineering. Like there's a lot of genes because our genes are designed to eat food, eat a lot of it. Again the corner stores and just this abundance of process food, our bodies aren't designed to do that. So if we can manipulate our genes in order to not crave those things and not tell us to eat every two or three hours, I mean there's so many things, right?

Matt: An example, could we hack our genes that where we cut our calories, our metabolic rate wouldn't dropped, that would be a huge game changer.

Dave: Wow, imagine this, what if we created gut bacteria and enzymes, God forbid, that allows us to eat things that aren't food today, and allowed us to survive on a lot less water than-

Matt: So we chew wood and break it down.

Dave: And then there's cities, yeah, exactly. There's cities in India that are not running out of food, they're running out of water and like there just isn't any water and people are going to start migrating in mass over this. So maybe that genetic engineering thing is going to allow us to be far more resilient and to live in the world we created more effectively because our genes are all set up for the world of 10,000 plus years ago and-

Matt: Yeah, or even millions of years.

Dave: Yeah, it's fascinating.

Matt: So that's one and of course, I won't be the first guy in line, and I want to grow horns, but I'll let the pioneers do their experiments and then I'm excited for it. And I think the next, next frontier that is probably more like 10-15 years away, it's going to be Nano boss, Nano technologies where we inject ourselves with these tiny little robots that'll go and clean house and identify stuff that-

Dave: You really think this is going to happen?

Matt: I do.

Dave: I think you're smoking crack. I think we already have them. That's called genetic engineering.

Matt: Yeah.

Dave: Like the little bacteria that we engineered who we want, those are nano robots but the idea that we're going to have little electrical ones, I think honey, I shrunk the kids it's kind of fiction.

Matt: All right, that's my prediction as far as what's coming and what's going to allow us to live to 150 going by your question.

Dave: Beautiful. Wade, what's your number?

Wade: I feel same way, 150.

Dave: 150.

Wade: I feel good. Maybe I'm not into that M field that you're at 180. But on the same way, I think, right now the Biohacking community is, first is breaking the M field of what's possible. I think that's the first state, you've got to be able to put your mind in a place that you can legitimately believe and see happening. Second thing, I think the testing data is providing us way more insight years before we run into problems. And I think that's one of the most critical factors is that, most people assume that they're healthy if they're not in a hospital. And that's just wrong, if you look at the average person in North America is what? High 70s is the average. So if I take a guy like me that's in my mid 40s, if I'm assuming that I'm healthy, then that means I've just cut off my limit.

Wade: So it's a psychic thing first. It's a mental from-

Dave: Why do you want to be average? Are you average?

Wade: Yeah. And I don't think anybody listening to this podcast is interested in that.

Dave: Well, are half of us are above average.

Wade: So, I think that's the first thing. I do believe that the genetic data is providing us, first, what nutrients might be missing that can have a cascade effect overall, the ability to nip disease in the bud or dysfunctional components. I think the next thing, I don't know which one is going to go to, is it going to be biotech or is it going to be digital tech? And there're some arguments that, I believe that Homo Sapiens as they are, it's over for us. I think that we are going to evolve into two separate species and there's an economic factor, there's a health factor and I believe that just like there was multiple species on the planet before we get to Homo Sapien, I think the current Homo Sapien is going to be upgraded into a new space. It's called homo unit, his homo spiritless, homo evolution or whatever you want to call it.

Dave: Or Homo Kit Casitas?

Wade: Yeah, that could be it.

Dave: I like that.

Wade: And you look at one of the biggest determining factors right now for longevity is finances.

Dave: Unfortunately that's true. But it's our job to change that.

Matt: I agree.

Dave: Yeah.

Matt: It's really... to make incredibly healthy solutions, cheaper, more available, and congrats on getting your brand out in Walmart and Target. Because I think that's a big part of it, right? I mean the masses shop in those places.

Dave: Correct.

Matt: They can get healthy.

Dave: And we have the advantages over many cultures right now just because of the development of engineering, technology, infrastructure and all that sort of stuff. And even the fact we see these explosions that now we're not caught in these linear channels we have access to listen to what you've broke through on and maybe you've paid that high price, but because of that, more people do it and that drives the price down and that's the beauty of it. So I do believe that, and of course, I think the whole, either whether it's going to be nanobots, or it's going to be genetic engineering or growing new organs or new bodies or whatever. I think that science is as dicey or as ethical that it brings the ethics side that it brings up around that. I think that the genie's already out of the...

Wade: So you're looking for the altered carbon future?

Matt: I'm in.

Dave: Yeah, I believe that's...

Matt: Also that's another thing.

Wade: Yeah, you need a new sleeve.

Dave: I mean, look how digitally integrated society is. I think there's an argument that we're almost borg now and that's a scary thought that makes us question, but what is it really to be a human and I think there's arguments on both sides, but I don't think we're going to stop that trend.

Wade: The bad news is that if you're listening to the show, you've already been assimilated. They just had the tents wrong in starting.

Matt: Resistance is futile.

Dave: All right. On that note, I really appreciate you guys coming in. The new BiOptimizers is called Capex.

Matt: Yeah. And we have a special deal for every listener.

Dave: No, I didn't even know about that.

Matt: Yes. So at kenergize.com/dave. So K energize is spelled K energize, E-N-E-R-G-I-Z-E.com/dave.

Dave: If you say Zed Canadians, Zee my friend.

Matt: Zed, Zed, Zed. So kenergize.com/dave you can get 20% off.

Dave: Oh, nice. Okay. That's a good savings and thanks. I think we covered all sorts of cool stuff. We are outside just Capex, but there is a neat new product. It's well designed. It plugs right into Bulletproof, plugs right in maybe to make your dirty Keto a bit more clean, and I appreciate the discount for listeners.

Matt: Yeah, and I mean it's a real game changer in terms of just stimulant free energy as well as better digestion and again, slightly enhanced fat loss. So those are the three main things it does.

Dave: All right. If you liked his episode, do you know what to do, go to kenergize.com/dave pick up some of this new stuff and what you're going to find is that amazingly, when you can better break down your food, your mitochondria can use it better, and it can

amplify whatever kind of Diet you've found works for you except for the Vegan Diet, in which case you're kind of screwed eating butter already. Love you guys, catch you later.