

Announcer: Bulletproof Radio, a State of High Performance

Dave Asprey: Today's guest is a fascinating researcher. I connected with her at PaleoFX, one of the big conferences about how we eat and how we move. We connected on stage and we're both part of a highly secretive and confidential WhatsApp group where we talk about the latest anti-aging stuff that all of you people who don't know won't get to take advantage of at least until it comes out into a book.

Dave: Okay, I just now created a huge demand to be in the list. Sorry. It's a very high bar for getting in there. Now, on top of that, she teaches a course at Stanford University on strategies for extending health span for greater lifespan, which is totally motherhood and apple pie to me, it makes me happy.

Dave: In her concierge medical practice, she's focused on providing health optimization and personalized medicine to San Francisco and Silicon Valley investors, executives, entrepreneurs.

Dave: Pretty much my people, at least before I turned to Canada and became an organic farmer, but I still hang. She's also a passionate evangelist and advocate and just a visionary futurist about pioneering new health technologies.

Dave: So it's going to be a fascinating interview because you get inside the brain of a doctor who's also teaching courses at Stanford about this kind of stuff. I'm talking about none other than Dr. Molly Maloof. Molly, welcome to the show.

Molly Maloof: Thanks for having me.

Dave: Now, I didn't mention this too, but you've advised some food and nutrition companies in your career like Mars, Quaker, Red Bull. Wow. You sound like an anti-aging guru there. Wow, are you going to give me wings?

Molly: I mean, I've just been ... I've been invited to participate in some product development here and there and it's just common to big companies and tell them what I know. It's kind of fun.

Dave: What's notable about that, I was kind of pushing your buttons there. What's notable about that is that big companies are interested in talking to doctors about what their food is going to do to people, they didn't used to give a crap.

Molly: True.

Dave: So I think there's a sea change happening and I've seen it happen from even big soft drink companies and because I get to meet the CEOs of these companies because of being the Bulletproof guy.

Dave: They're starting to care in a way I don't think they did in the 1950s better living through chemistry which is pretty cool. So I just wanted to say, "It's okay that you do that."

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Molly: Well, here's the thing though. I've always believed that big corporations are just giant bureaucratic machines that move extremely slowly and are largely unable to innovate effectively.

Molly: And so it's really important to get in there and to say, "Look guys, you don't know what the future looks like. This is what's happening and you better prepare for it."

Dave: So how do you know what the future looks like?

Molly: I have to admit that this is kind of ... It's kind of come off arrogant to say this, but I've always kind of had the ability to see what's coming next and to be ahead of the curve on a lot of things.

Molly: And so fun fact about me, even though I teach at Stanford, I actually left my residency. I dropped out and started my own medical practice because I basically saw the tech scene was going to completely transform medicine and I said, "I'm going to be part of that sea change because innovation in technology is going to shift the way healthcare has done."

Molly: And we're going to see Apple, Google, we're going to see Facebook, we're going to see all these big tech companies that are getting ... They're all going to get into health and that's happening.

Molly: I mean, look at Google invariably. I mean all of these predictions that I had when I was in my residency seeing what was happening in San Francisco and Silicon Valley, a lot of these have come true and so I've just had the ability to kind of take advantage of that foresight.

Dave: It doesn't sound arrogant to me at all. There are a few people out there who have a better grasp of the future than others. I'm also one of those, I'm the first guy who's sold anything over the internet.

Dave: Somehow I had to know that was going to matter. So yeah, it can sound arrogant, but it's not and the world recognizes that. They call them futurists and they end up becoming consultants and advisors because no one really knows how our brains do that sort of thing.

Dave: It's just a rare skill, but you're probably really terrible at something else because you're good at this. What are you really terrible at?

Molly: Oh yeah. Oh man, what am I really terrible at? I'm trying to think of ... I'm certainly a thinker and I've had to become a feeler. I've had to learn to feel my feelings and that has been through like deep work and meditation.

Molly: I'm not naturally like a peripheral nervous system person. I'm more of a central nervous system person and then I've learned and you can train your body to feel all the things. So even if you're naturally a thinker and an intellectual, you can learn to be a feeler.

Dave: We do have that in common and I don't know if that's true for future people. I just realized that would be an interesting thing to ask you because I recognize you have that pattern about seeing if this is going to matter.

Dave: And you talk about Google and their health stuff. I hired one of the four people who worked at Google Health when I was CTO of the wristband company called Basis and this was the first company to get heart rate from the wrist.

Dave: It's the same tech that Apple uses today and the watch and so this was like such a big deal, but there was only four people at Google back then, but at the same time, all of the quantified self-people like you and me would recognize measuring, it's useful, but hacking it is even greater and you could see it coming if you know how to read the tea leaves. So you're a good tea leaf writer.

Molly: Totally.

Dave: Now speaking of tea, coffee or tea, which one's better for you?

Molly: I like both. I like both of them so much.

Dave: I do too, shocking.

Molly: How can you choose? How can you possibly choose treating two children?

Dave: That is a really powerful quote right there. Now, if you had to choose between a child and coffee, which would it be?

Molly: Oh my God, I don't have children yet, but I think I would ... I'd probably choose a child. I'm worried about this. I'm worried that caffeine may not be optimal for fertility and so I worry that when I want to get pregnant someday, that I'll have to give up coffee. So that's one of my concerns.

Dave: All right, you have to read The Better Baby Book.

Molly: Yes.

Dave: So this was my very first book, did five years of research and I looked into it and there's all sorts of data out there and even green tea, "Oh, you can drink green tea, it has less caffeine."

Dave: Green tea depletes folic acid. So you have to take your methylated folic acid if you drink your green tea and the bottom line is, all the evidence I could find is said if you want to have a cup of coffee when you're pregnant, it doesn't appear to be harmful unless there are mutagenic mycotoxins present at which point you should minimize all of those especially in the first trimester in the three months leading up to pregnancy.

Dave: So I think you're okay, just don't just don't the 24 shots of espresso a day that typical doctors do and you'll be fine.

Molly: No. No, I gave that up ... I gave that kind of drinking coffee up in medical school. I used to drink cups of espresso when I was a medical student. It was insane.

Dave: Yeah, I think it's what we do when we're studying hard. I get you there.

Molly: Yeah.

Dave: Now, let's talk about your practice now that we know you see the future. You focus on something that's been missing from the anti-aging world and the real benefits of an anti-aging practice for any person are you feel better right now and it doesn't matter if you're 22 when you start doing it like, "Whoa, I could stay up later and drink water and still feel good." If that's what you wanted to do.

Dave: When I was 22, that would've been what I wanted to do. So your quality of life kind of goes up quickly and so that's what we're calling health span. But it seems like the messaging has just been off for decades on that. Why do you think the messaging is broken?

Molly: Yeah. Okay, so I think people need to get down to the right terminology effectively around all this stuff. So anti-aging was sort of the first term for, "I don't want to die. I want to live a long life." Great. That's wonderful, but a lot of people also want to live a long life with quality of life, right?

Molly: And so they want to be healthy and live a long life and that's what health span is. It's a number of years you have healthy without disease or disability.

Molly: But then there's the question is what is health, right? And so this is what I've been kind of trying to figure out for the last 10 years because health is just a morphous term and it used to be the complete absence of disease or infirmity according to the World Health Organization.

Molly: But that's kind of pie in the sky. Everybody's going to get hit with something here and there, whether it's a cold or you break a bone. The real measure of health is how quickly you bounce back up to your hit by some sort of challenge.

Molly: And so really fundamentally underneath health is this concept of capacity. And so I got really obsessed with mitochondria because they're fundamentally power plants that make and store charge as capacitors.

Molly: And so these incredible organelles are fundamentally responsible for our ability to be healthy and adapt and self-manage in the face of adversity, which is the definition I like to use.

Dave: It's amazing what happens in mitochondria and the idea of being a capacitor for engineers who are listening, a capacitor basically can store a certain charge and then deliver it very quickly, whereas a battery doesn't deliver things quickly.

Dave: A battery delivers a constant flow of energy so that mitochondria can provide a big quick hit, almost like a car that can accelerate really quickly versus a car that can accelerate slowly, but then hold a constant speed and the nature and abilities of mitochondria are fascinating. And so you got into those. Was that from medical school where you first got interested in those?

Molly: No. I got interested in them in the last few years, actually, the last couple of years and the last year in particular, I got really obsessed with glucose metabolism and the first people in San Francisco to put a glucose monitor on as a healthy person and say, "Hey, I went to a quantified self-meetup."

Molly: And I said, "Hey guys, it turns out that my blood sugar isn't normal, and I thought I was super healthy." And so I was like, "Well, what is the regulator of blood sugar?" And it's actually the mitochondria because they're the ones that are metabolized in the fuel and then using the fuel and dictating where it goes.

Molly: So they're signal transducers, they're all nodes in this giant system in our body that's taking information from our outside world and deciding what to do with it.

Molly: And so evolutionary fitness is kind of what they're here to do. They're trying to keep you alive and then they're trying to help you reproduce. Your body really wants to do those two things and the mitochondria are the ones dictating those actions.

Dave: Do you know what cells in the body have the highest concentration of mitochondria?

Molly: Adrenals I believe.

Dave: No.

Molly: Or the brain.

Dave: No.

Molly: No? What am I missing?

Dave: I was wondering, the way you explained that, I loved it because a Head Strong was my mitochondria book so I went really deep on mitochondria in this book and like how do you hack them and what I found was that in the heart and the brain, you have about 15,000 mitochondria per cell, capacitors, you need these energy for neurons, specifically neurons in the brain, not glial cells, but only in women, cells in the ovaries have 100,000 mitochondria per cell.

Molly: Whoa.

Dave: And when you said right there mitochondria are sensing the world around us and deciding what to do, who do you think decides which egg is going to drop? Those little bastards are the ones deciding which egg is going to be your baby, right?

Molly: Wow.

Dave: That's how in control of our survival they are. There's no other explanation I can think of for why we'd have 100,000 there other than that they're environmental sensors and capacitors and power producers, right? Isn't that cool?

Molly: That is the coolest thing I've heard in a long time. You've blown my mind.

Dave: Well, that's hard to do. Well, thank you.

Molly: Yeah.

Dave: I'm sending you Head Strong by the way, it's going to be like ...

Molly: Oh please do. I'll read all of it.

Dave: It will make you happy. I used to weigh 300 pounds and I was pre-diabetic before I was 30 and had all these other health things that really came down to making mitochondria work better and when I managed them using the stuff that I make for Bulletproof and lifestyle and all that, magically, it's almost like I'm young again, but I had all these ...

Molly: Isn't that incredible?

Dave: Yeah, I had all the old people diseases in my 30's.

Molly: Which people don't realize is that the mitochondrial theory of aging basically presupposes that a lot of these chronic lifestyle-related diseases all have the same origins and its inactivity, it's too much stress and it's eating the wrong food and eating too much of the right ... Too much food and then never fasting, right?

Dave: Yeah.

Molly: So it's metabolism, it's movement and it's our stress response.

Dave: It really is and there's nothing as enlightening as actually looking at what your blood sugar does. So for me, I went to a doctor at the Palo Alto Medical Foundation.

Dave: This has got to be I don't know, 20 years ago and like, I've started gaining weight again. I feel like I'm hung over all the time. I feel like someone poisoned me. I'm just so tired and I don't know what's wrong, but I can tell you, something's not right and it turns out I was living in a house that had toxic mold *Stachybotrys* which directly poisons mitochondrial functions, go figure.

Dave: But we didn't know it at the time. So he looks at me and says, "Oh, maybe you should try to lose weight." I'm like, "Maybe you should kiss my ass. I've worked out an hour and a half a day, six days a week. I've tried everything and it doesn't work."

Dave: And he said, "Well, maybe you have high blood sugar." So every day, 20, 30 times a day, I was pricking my fingers back then and I came back with a chart that I made by hand and he's like, "You're not supposed to be pricking your fingers. You don't have diabetes."

Dave: "Like you told me it was high blood sugar, but it's not. My blood sugar, it varies, but it's not crazy high. I don't have diabetes." And he just shook his head like, "What sane person would do that?" And had nothing to say other than that Vitamin C would kill me and so I fired him.

Dave: But I remember that experience and I really didn't like it and it gave me compassion for diabetics, but about three years ago, I bought a continuous glucose monitor and I tried it for a month or two until I ran out of sensors.

Dave: I worked on The Dr. Oz Show and they're like, "What's that weird thing on your arm?" And I'm like, "I don't think I can tuck it under my shirt. Sorry. But I'm actually wearing one right now."

Molly: Yeah.

Dave: So I started again maybe three months ago and I'm just going to wear them for a year and it's crazy what the lack of sleep does for blood sugar regulation.

Molly: It's incredible. Well, it makes so much sense, right? Your body is responding to stress and stress releases cortisol and cortisol contributes to insulin resistance because your body is trying to help you maintain blood sugar for your brain to function to get you out of danger.

Molly: So it's the adaptive stress response in real-time and like people don't realize this, the stress response is an adaptive response. It's actually when it becomes chronically activated, that it becomes disease and that's just modern life.

Dave: And it's there to help you. It really is.

Molly: Yeah.

Dave: Are you wearing a continuous glucose monitor right now?

Molly: I literally just took two of them off today because I had them on for the last two weeks. I was comparing the pro with the one that you can get as a prescription.

Molly: I actually worked for two different ... Actually, three now, three companies that are working in CGM, and I spent a good two years just poring through every single research

paper I could find on the topic and so I really look at CGM and the curve as like the ultimate lifestyle biomarker and it's like you're a video game.

Molly: You literally are in the video game of your life and this is how much power energy you have ... Basically how much energy you have and what's happening in your body and how it's being spent is it reflects all of that.

Dave: It does, and if you want to really just be aware of how real or false your hunger response is, if your blood sugar is still adequate and you're getting a hunger signal, it's not a real hunger signal.

Dave: Something is not right. So you can literally say, "Oh, my stomach says I'm hungry, but my data says I've got plenty of energy in there. So until my body used the energy, I'm not going to eat."

Molly: A lot of people don't realize what they're eating is causing blood sugar spike. So they're eating a lot of refined carbs, packaged, processed foods, refined sugar ...

Dave: Or just a vegan diet let's say.

Molly: Or just a vegan bowl, right? And one of my friends recently ate some Mexican food. She had some rice and beans and a vegan taco and it was all carbs and she had this massive blood sugar spike and then right afterwards, it dropped and she was hungry again.

Molly: And she was like, "Well, I don't understand why this is happening." And I'm like, "Well, you just had a huge glycemic load and then your body had to pump out a bunch of extra insulin and then it dropped."

Molly: And the problem with this condition is that people don't realize that these blood sugar spikes are damaging blood vessels and they're also taxing the pancreas and they're also contributing to high insulin levels which can raise your risk of cancer.

Molly: And unfortunately, you can't see this information as you're wearing a blood sugar monitor or you're pricking your finger a million times a day. So there's actually now I think six companies that I know of that are building software for CGM and what we're going to see is this entire ecosystem emerge of companies just like what happened in genetics. We're going to see a whole world of CGM companies just like we see genetic interpretation companies.

Dave: The problem we have now though is they're just not stylish. I've got this white dot on the back of my arm here.

Molly: Yeah, no, the thing is that these aren't cool right now, but soon, they're going to be implantable and they already are implantable if you're a diabetic and I'm actually kind of interested in going and learning how to implant them in myself because I don't want to look at it.

Molly: I just want it to be there for three months and so like what's wrong with that? That sounds like a great idea.

Dave: Well, there's a couple of questions I got for you there because you're a medical doctor. Okay, EMFs.

Molly: Oh yeah. So we actually don't ... So EMFs, right? We're electromagnetic beings, right?

Dave: Yes.

Molly: Our bodies are electromagnetic and let's get that straight and mitochondria literally resonate through electromagnetic frequencies with each other so we know that they fundamentally act this way.

Molly: So the real question is what are we going to do about the fact that society is covered in EMF now like you ... Where do you live now?

Dave: I live on an organic farm on 32 acres on Vancouver Island where there's almost no EMFs at all and my office is Faraday cage and I'm wearing a tinfoil hat. Okay, I'm just kidding. I don't have a tinfoil hat ...

Molly: I'm actually moving to Maui, I'm moving to Maui for three months because I feel like San Francisco, I am concerned that our level of EMF here, and we talked about this in the WhatsApp group, it's very possible that this is damaging our health. Everybody is walking around like zombies. It's insane.

Dave: It's pretty sad how it's changed just from a public health perspective with the homelessness problem there.

Molly: It's a blade runner.

Dave: It is a little bit blade runner, but there is something going on with really high dose EMFs I believe and we ... The reason is there's hundreds of studies that support that and they're also ... We understand the mechanism ... The voltage-gated calcium channels which I've covered on previous issues of the previous episodes of the show.

Dave: Do you think that's the mechanism? Is this voltage-gated calcium channel, the voltage changes on the mitochondrial membrane from EMFs and that causes a calcium influx or what is it?

Molly: I think it's a good hypothesis, but I think that there's a bunch of different hypothesis, right? And so like the problem is is that nobody wants to admit that this is ... I know 10 people who are less than 40 who've had cancer and two have died and this is not acceptable, right?

Molly: It is not acceptable that we are getting so sick so young and we need to ask ourselves what are all the possible causes and I think a lot of it does have to do with how we eat, how we live, how we breathe.

Molly: I mean, the air pollution, the water. We are living in a super toxic world and I think people are kind of leaving San Francisco and big cities and starting to realize that the quality of life is better outside of these environments that aren't conducive to health and flourishing.

Dave: That's one of the reasons I live where I do and it's a sacrifice because I travel more than I otherwise would and I don't have access to certain services, but I do get to ... Right now, the only meat that I eat when I'm at home, I fed it.

Dave: I know exactly where it came from. Pigs, sheep and turkeys and the cows come from the neighbors. Right? And I don't feel bad about it. In fact, I feel really good about it because I know the animals lived a good life. They contributed to the soil that's growing my vegetables, it's all good.

Molly: Totally. You're living the example.

Dave: Most people though aren't in a position to do that. I know how lucky I am to do it. I also know that property values here are about 10% of what they are in the Bay Area so there's that, but ...

Molly: I mean, the real thing we need to ... So here's what's fascinating. Switzerland adopted 5G and then there's a massive protest and it gets no attention in our news, but like people are pissed that this stuff is coming and I don't think enough people think deeply about this and care enough to question it unfortunately.

Molly: And so it's kind of just happening without enough regulation and obviously, the government is not the experts in all these things. I wouldn't say that. So I'm concerned, but I'm also taking action and deciding to spend some time away from the city of San Francisco and literally take three months and work remotely from Maui because the last time I was there I was just like, "I feel alive. I feel well. I feel healthy and vibrant."

Molly: And a lot of it was the sunlight, the air quality, the water quality, the plant life, and just the fact that it doesn't feel like it's covered in the kind of EMF and mold that San Francisco is covered in.

Dave: Oh, the mold is a whole other issue in San Francisco. It is hyper aggressive there and I've come to believe just from studying mold, I did a documentary on mold and it really affected my health is that when we genetically engineer mold to make some like citric acid which is a common food additive.

Dave: So we use mold, aspergillus specifically, and aspergillus niger, the black mold is and black mold, there's multiple species that are toxic, but to increase the toxin yield, and

this is modified, so the toxin is actually citric acid, it's not really a toxin, but we've sort of had these things.

Dave: What they do is they increase EMF exposure in the culturing environment to increase toxin formation. I'm pretty sure that might work in the world around us too, but all I know is when you're in areas ... San Diego is a big problem, San Francisco is a big problem.

Dave: There's a lot of really hyper aggressive mold there and I feel it. I walk in, "Oh man, something kind of messed with my mitochondria and I'm way more resilient."

Dave: And you can fight the mold with bacteria. I started a company Homebiotic that is a probiotic you spray around that eats mold [inaudible 00:25:12] so the mold can't reproduce even if it wants to, but it's taken years of work for me to become as resilient as I am in those environments and I think EMFs might be a part of it.

Molly: Yeah, possibly.

Dave: So you've decided for your health span, like I'm getting out of dodge basically.

Molly: Sure. I mean, I have to come back and teach in the Spring so I'll probably return to Palo Alto for a few months just to be at Stanford, but then the real question is where do I really want to live because I don't want to be in a city like San Francisco right now.

Molly: It's just lost a lot of its magic and it's just energetically; everyone says the same thing. Energetically, it feels like a massive, boulder drop when you enter. It's not the vibrant innovative city it once was a few years ago. Even seven years ago when I first moved here.

Dave: I spent a long time in the Bay Area. My career in tech was there and yeah, something has changed. I can't tell you exactly what it is. The vibe is different.

Molly: The vibe is different.

Dave: Now, are you going to put a continuous glucose monitor on before you go to Hawaii and wear it while you're there and then see what happens when you come back?

Molly: I have done that. I have done that. Yeah. In fact, I've worn them ... I've worn a glucose monitor for like three years straight so I almost always have one on. I'm in the process ... Sadly I'm throwing out a whole like bunches of boxes of Abbott Libre Pro because they do expire which is super lame and they actually do when they expire, they don't work as well because I've done a bunch of comparison testing.

Molly: The thing that I've noticed ... I went on two different meditation retreats recently and my first meditation retreat was so ... It was like Zen and Ecstasy and Bliss and it was massively just enlightening.

- Molly: The second meditation retreat was like stressful and all this stuff was coming up I didn't want to deal with and I literally saw this emotional reaction in both situations.
- Molly: I saw it in the CGM. One of them was like super even-keeled, a little blip for food despite eating a vegetarian diet for two weeks, it was like pretty consistent and then my variability went way up during the really challenging emotional experience.
- Molly: So I thought it was going to be nice to even-keeled in Maui, but it was actually the internal stress that I was experiencing that was causing it to change and what people don't realize is that a lot of stress is not necessarily outside of you.
- Molly: It's the stuff that's running on the inside that you're not addressing and like the ... A lot of people have unresolved traumas that are just almost like an energetic ... It's like malware and the brain and energy leak in the back.
- Molly: It's like constantly draining your energy and so I am a big proponent of telling my clients to like, "If you have trauma, go get some EMDR, go deal with your trauma therapy, go to get psychedelic medicine." Because unresolved trauma is a massive stress in the body and it just, it's like malware on the background.
- Dave: It's amazing. I look at it from a mitochondrial perspective, they're trying to keep you alive. Your pattern matching system decided that something in the environment was a potential threat even though it's all just a story in your head and so it's going to change your blood sugar stance.
- Dave: I felt the same thing. I went through some real stressful negotiating stuff about a month ago and I was like, "Man, what is going on with my blood sugar? It is totally wacky."
- Dave: We're talking 15 points higher than it normally is and my ability to maintain just a short blip after a meal, even a properly composed meal, it was not as good and that's emotional stress affecting the very energy fuel substrate of your body.
- Dave: It's there, but I looked at heart rate variability since I really started blogging about this and from running a nonprofit before that as one of the big quantified self-ways of measuring stress.
- Dave: Like you though, the continuous glucose monitoring, if you have both of those signals, I use my Oura ring to track my heart rate variability at night, my blood sugar throughout the day, I can tell you pretty good how well is the system working based on fuel availability and then efficiency of how it's running and trauma will suck fuel and cause it to take squirt at the wrong time and it will drop your system ... What I want to call system coherence from the heart rate.
- Molly: Yeah. Yeah. Someday we're going to have devices that are going to be real-time HRB and real-time CGM that are going to be so invisible and embedded and whatever wearable that they're going to come out on and we're going to have these incredible

feedback systems and then eventually, we're all going to not need them anymore because we're going to know what it feels like to be stressed out.

Molly: We're going to know what it feels like to have high blood sugar. I know my blood sugar right now is probably, if I were to go measure it in like the 80s, probably the low 80s because I haven't had breakfast, but I'm kind of worked up a little bit so maybe it's like upper 80s.

Molly: I'm on a podcast, I'm communicating. I kind of know what it feels like to be at different levels because I've just worn these long enough.

Dave: What's your favorite CGM?

Molly: Well, this is a really interesting question because I would say that right now because of cost and convenience, the Abbott is really winning, but the Dexcom ...

Dave: That's the Freestyle, right?

Molly: Yeah, The freestyle Libre is good, but then Dexcom is coming out with a new one soon that's going to probably out-compete the Abbott and the real thing that I want to see is I want to see direct consumer of CGM because I don't think there should be a prescription device.

Molly: I think the information about your body should not be behind a pharmacist's desk. I think it's absurd that you have to ask your doctor for information about yourself.

Dave: Isn't it also absurd then that I have to ask a doctor for thyroid medication if I want it?

Molly: Totally. I mean, this is the whole crux of what biohacking is about, right? Like having to hack a system because it won't give you what you want. People should be able to do what they want with their bodies. People are allowed to drink, people are allowed to smoke. Why can't people learn about their bodies? What's wrong with that?

Dave: I get into this argument with my wife who's also a medical doctor and I'm like, "I think it's a crime against humanity that I'm not allowed to order any substance I want to modulate what my body does."

Dave: I'm talking antibiotics, hormones, any medication or chemical that's available on the planet, it's my body, my biology, hands off. Are you supporting that?

Molly: Yeah, I actually do support that. The reason why I support that is because doctors are practicing ancient medicine that's out of date. I'm sorry, but the fact that doctors are still prescribing statins across the board for high cholesterol without actually asking why is the cholesterol high in the first place like, "Okay."

Molly: A cholesterol's job is to repair damaged blood vessels. So why are blood vessels becoming damaged? Okay? So maybe it has to do with hypertension. Maybe it has to do

with too much stress, maybe it has to do with the fact that they're living in polluted cities. That's all the oxidative stress coming from that or maybe it's the blood sugar.

Molly: I mean, a large percentage of diseases, a large percentage of heart disease actually is caused by high blood sugar and that's not really talked about enough in heart health I would say. So we give people statins.

Molly: Statins actually increase your risk of diabetes. Okay, so you have this vicious cycle of we're giving people drugs that are causing the exact ... It's basically causing the cause of heart disease.

Molly: It doesn't make sense to me. Statins are not preventing heart disease. They're treating the marker and they're not really looking at the source.

Dave: They're also causing harm to mitochondria directly which you kind of need healthy if you're going to live a long time. Right?

Molly: Yes. I think we've really screwed up the management of heart disease in this country and we've kind of ... We're doing people a disservice by practicing old medicine.

Molly: And so if you go to your doctor today, they're just going to be doing what they were taught which was like 15 to 20 years ago what they were taught and that's in my opinion, that's silly.

Molly: So like you have to be responsible for your own health, you have to have your own agency and autonomy over your body so that you are responsible for your health because your doctor is not going to manage your health. Your doctor is going to manage your care and there's a difference.

Dave: You're on the very fringe of what most medical doctors would say on that and I have to thank you for that. I 100% support your perspective there and I find it really frustrating when I want to buy something that I've used before that I know would be useful for my condition whether it's to improve it or because something's off and I have to go wait in line with a bunch of sick people to get someone to look at me for five minutes to write a piece of paper so I can go wait in line at another place.

Dave: So a bunch of people can make money, but they aren't working for me and that's just not okay. And so I think we're ... That system will fall down under its own weight and it is in the US and so ...

Molly: Exactly.

Dave: But to be an MD ...

Molly: It's not working.

Dave: An MD who's saying, "All right, I'll let you ... Only come to me when you want to and you can still go to the pharmacist without having to pay me a tax." That's progressive, really progressive. Thanks Molly.

Molly: Well, I'm also pretty weird, right? I'm literally like, "How do I make people healthier so that they don't need me eventually?" My goal is for you to become completely resilient and capable of managing your own health and coming to me eventually for something that you really need to help for.

Molly: But, this is not, this is a total paradigm shift of the way we think about medicine and I don't think I really completely finished the thought around managed care versus managing health.

Molly: The system wants you to not actually care that much so that they can give you drugs and surgery and keep you in the system. They don't want you to be fully autonomous unfortunately because then you wouldn't need their help, right? You would need the system as much. So my goal is that people get so healthy that they don't need all the drugs and surgery.

Dave: I've heard from a few people that they think we should pass a law that you have to get a prescription from your doctor before you can practice fasting. Wouldn't you support that from a revenue perspective?

Molly: I think, I mean, that's a cool idea, but that's more like practicing extended fasting I'd say because people do bonk.

Dave: Extended fasting is different, but it's one of those things where, "Okay, that has probably stronger effects than a lot of medication." But you can do it without a doctor's thing, but there's probably someone out there saying, "We have to regulate this and we can make money from it."

Molly: Well, I mean I think that if doctors could learn to prescribe behavioral medicine, that will be phenomenal. I think like, look, exercise is literally the best anti-aging drug on the market and fasting is what we're designed to do. Our absolute primitive genetics is designed to fast. That's why eating all the ... What?

Dave: Exercise is the biggest anti-aging thing? Not food?

Molly: No, so exercise fundamentally, if you look at the hallmarks of aging, exercise reverses all of them. We've studied this, we've actually studied, there's papers on how every single hallmark of aging is reversed by exercise.

Molly: Now, I would say lack of food is better for you. I think most people don't understand this, but like we're designed to be fasting most of the time. We're not designed to be eating all the time.

Molly: We have the genetics of scarcity and so abundance is actually damaging to health. So food is fundamental to health. If your food is wrong, your fuel is wrong, you're screwed.

Dave: Yup, and it will make you old faster if you eat French fries as your primary fuel source, right?

Molly: 100%. I would say that if you don't look at your food first, actually I would say looking at sleep is pretty paramount. Just even make good food decisions, if you're not sleeping well and you don't have enough energy to exercise if you don't sleep well.

Molly: So you really got to look at your sleep, but then you've got to look at your food because it's basically what nurtures the microbiome, but it also provides you with your fuel supply.

Molly: So if you don't have any gas in the tank, you're obviously not going to run. But most people have literally hundreds of thousands of calories on their body that they're not burning because they're not metabolically flexible enough to tap into it.

Dave: All right. I want to ask you some fasting specific things about what you're recommending, but this is a real specific thing that I don't know the answer to. I asked Siim Land on the show who wrote a book on Metabolic Autophagy about ... Okay, the Bulletproof Coffee or Bulletproof fasting was from the Bulletproof Diet in 2014 where for breakfast you have coffee, but you put some Brain Octane and some butter in there.

Dave: So you get no insulin change whatsoever, third-parties are validated. It's a breakfast with the least insulin change because they found none from doing that, but you have some energies.

Dave: You actually feel good because you're metabolizing the fat and his perspective on autophagy as his mind is that given what we understand about it, you're still maintaining autophagy which is the breaking down of old cells and excreting toxins.

Molly: That's a really good question because as far as I can tell, even the sight of food could stimulate insulin, right? So there's got to be some minor bump in insulin by just the act of consuming something.

Dave: Other than compared to black coffee which I suppose might be some minor cortisol thing, I don't get a bump in my blood sugar at all other than just from waking up when you get a small cortisol spike.

Molly: Yeah. I do see a little bit of my blood sugar go up when I drink coffee just from the catecholamine release.

Dave: Yeah, I can see that.

Molly: Yeah, I mean, here's the thing, a true fast is no food, right? And a true fast is ... I mean the real question, I don't really subscribe to the snake fast concept of no water because I think water is part of how we run this hydrogen turbine in ourselves.

Molly: So water's pretty darn important. You need it. So, but I do think that like there is this big question as to whether or not you can get the same effect of autophagy or not.

Molly: We'd have to be measuring it. That is the biggest problem with mitochondrial research is we don't have good tools for measuring phenomenon that are like incredibly hard to measure.

Molly: The devices that you need to measure ATP and mitochondrial function are like hundred ... They're like thousands and thousands of dollars in their research labs. We don't have great tests for these things right now.

Dave: Would you believe that at Upgrade Labs, there's two locations in LA for Upgrade Labs and soon one up where I live in Canada. We have exclusive access to a technology that allows you to measure your actual mitochondrial function using special algorithms around oxygen consumption under exercise.

Molly: Interesting. Interesting. I'm interested when I have to go ... I'm going to have to go visit that.

Dave: Yeah, it's pretty cool and I think it's necessary.

Molly: Indirect. It's still somewhat indirect isn't it?

Dave: It's indirect, but it's ...

Molly: [crosstalk 00:39:44] is one of the better tools as well.

Dave: VO2 max, the algorithms are wrong for measuring essentially mitochondrial heteroplasmy, like how effective are your mitochondria at turning blood sugar or fat into energy and so you can measure how efficient our mitochondria which is a measure of how they're working, but they're not going to tell you, "Oh, you're losing an electron at step three in the Krebs cycle." You can't do that.

Molly: Yeah. Well, one of the things that I like doing, if you really want to geek out on this is you just get a blood sugar monitor and you get a ketone monitor and you start measuring as you fast what's happening in your body.

Molly: So I did this for two months. I did every other day fasting which is kind of crazy as a woman to do that because everyone is like, "Oh my God, you're going to damage your health." But I felt awesome. I looked awesome. It was ...

Dave: So 24 hour fast every other day?

Molly: 36 hour every other day.

Dave: Wow.

Molly: Yeah. It was some serious metabolic Olympics, but I was measuring my glucose ketone index and I was literally over the course of a few weeks watching my body become more metabolically flexible.

Molly: So you can see if your body is dropping into ketosis and how fast it's dropping into ketosis and you can see how whether or not your blood sugar is shifting and if your blood sugar is not dropping as your ketones are rising, then tip ... You're usually under some sort of stress and if your blood sugar is dropping and your ketones are rising, then you know that you're tapping into ketosis, right?

Molly: You're actually in ketosis, but then if your blood sugar is dropping and your ketones are dropping and you're ... That's basically you're bonking and this is what happens to carb-addicted athletes when they run races and they don't have any gels.

Dave: Right.

Molly: Right? Or they like, "You shouldn't have to use those. Those aren't good for you."

Dave: No.

Molly: And if you are using those in a race, it's because you're not metabolically flexible enough to tap into your own fat supply. And so basically, this is the way that you can see how metabolically flexible you are is just measuring these two markers.

Dave: I have not found an implantable or stick on ketone sensor, but I believe ...

Molly: Nope, not yet.

Dave: You and I aren't the only ones fantasizing about that. It's coming.

Molly: Oh my God, that plus cortisol and it's like holy grail. The clouds will open up and the light will shine down on all of the geeks in there.

Dave: It's getting to the point with these sensors where I could slap one of these on my mom or dad and be like, "Hey, go monitor this." And it's really empowering to see what your last meal did.

Dave: So you say, "Oh, I have to have two cups of rice or potatoes or whatever." And you realize, "Wow, that meal didn't serve me the way I thought it did." So it, actually changes your desire for certain foods when you just realize every time I do that, I get a bad score. So it's like using gamification for good.

Molly: Yeah, there's two things that can happen or three really. So if you're like you and I, you love data, you love information and you're like, "Empower me with more." But if you're like my parents, they're like, "I don't even want to see this anymore."

Molly: They're in denial about the reality of what their lifestyle is doing and then there's like the third person which is kind of like hesitant and wants to know more, but like doesn't really know what it means and that's where I'm really excited that there's a bunch of software companies coming out that are going to interpret all this. So there will definitely be a whole world of technology that's going to arise from just glucose monitoring.

Dave: Yeah, we talked about having, just fad, the Bulletproof Coffee, the traditional recipe. What I've been doing for the past while, and I wrote about this in Super Human is I'm concerned about gut bacteria.

Dave: When I went on a three month zero carb, essentially, one serving of broccoli a day, no other carbs at all. It really messed up my biology and I ruined my sleep quality, dropped my testosterone, increased cortisol, not a good diet.

Molly: So carnivore?

Dave: It was almost carnivore, except I ate some broccoli, right? And I did this as I was just running through tests before I published The Bulletproof Diet to sort of see do we really need carbs? And what I ended up with was cyclical ketosis because you have to feed your gut bacteria.

Dave: What I've been doing lately, I launched ... I found out I had 48 species of bacteria in my gut from the volume test which is a little bit low for what I wanted.

Dave: So I made a prebiotic called Inner Fuel. We ended up launching it as a product and I use that now. I put that in my Bulletproof Coffee in the morning on some mornings, and it is keto and it is made out of carbs, but it's indigestible carbs that get turned into propionic acid and butyric acid by gut bacteria.

Dave: So you get these really happy, healthy gut bacteria and it doesn't raise blood sugar for me and who knows if it does for someone else. I mean, there can be individual things.

Dave: So I put that in there and now it's like, "Okay, I'm certainly incredibly full when I do that." I'm talking 75 calories, but not calories that my mitochondria are getting unless they've been transformed by gut bacteria. And I basically tripled the number of species in my gut which is good for aging.

Molly: What's in this? What are the kinds of fiber in this?

Dave: It's acacia gum fiber plus hydrolyzed guar gum plus Larch Arabinogalactan. So these are tree saps basically.

Molly: Oh yeah, I'm loving those right now. I've got to try this because I actually prescribed acacia fiber and ... Is it Arabinogalactan? Is that how you say it?

Dave: Yeah. Yeah.

Molly: I prescribe those for sure.

Dave: Okay. So I put all three together and I mean, but for me, it took three months. I just put it in my coffee in the morning, my Bulletproof Coffee and my species went through the roof and I published the data and what I don't know though is, am I still fasting if I do that?

Dave: And people have asked me that because gut bacteria makes something called FIAF, Fasting-Induced Adipose Factor. They'll amplify what your liver makes to tell your body to store more fat or to burn more fat based on what the gut bacteria want instead of what your mitochondria want.

Dave: So do you have any data or thoughts on if you feed just your gut bacteria with something that doesn't raise your blood sugar? Are you still fasting or are you not?

Molly: I've thought a lot about fasting the microbiome because I've done so many different kinds of fasting in the last two years. I've done extended fast, like three day fast. I've done 20 ... I mean, when I first started passing I just started like gradually adding days and I definitely noticed after a prolonged fast, that I would have almost a dumping type syndrome where I'd reintroduce food and it would just go right through me.

Molly: And part of that was because I had killed off a lot of my microbiome and I've been watching people in the fasting world develop depression and so I know that there's a relationship between too much fasting and killing off the microbiome because I've seen this happen in more than one person who's like a serious faster and they, they're like super ... Some of them have companies around fasting, some of them are like super arrogant about how they fast for two weeks at a time.

Dave: I know.

Molly: And I'm like ... And I've always told them, "Look, you've got to tend to the microbiome because it's like a garden. If you don't till a garden ..." It's like if you had, if someone, let's say you just completely like left town for two weeks Dave and then fired all your staff ... I don't know if you have staff who run your farm, but like if your farmers are left to ... Farms are not going to grow effectively if there's not someone that's tending to it, right?

Molly: You have to actually grow a microbiome and you have to tend to the microbiome like a garden of your body. And so it will not thrive if you don't feed it appropriately.

Molly: I kind of try to imagine like a primitive human what they would be doing as they'd be looking for fuel and looking for food and they'd probably be picking up a few nuts and

berries here and there or picking up a few leaves here and there and probably still consuming, even though they're at a low level of blood sugar because that's kind of the whole ... If you think of anyone who's ever gone mushroom hunting, you bring trail mix with you, right?

Molly: You're kind of going to be looking for some food in your environment. So I don't necessarily know if humans are designed to just not have any food at all except for an occasional meal or if we're meant to be kind of grazing or gathering slowly over time.

Molly: So I think it makes sense. I mean, if you look at wild animals, they're nibbling on food here and there and then they're looking for their big meal.

Dave: Yeah, I guess it depends on you look at a tiger or something, if they're going to eat their big meal, they don't eat for a while and maybe they'll use a mouse or something or a coyote would, but if you look at my sheep, they never stop.

Dave: They're basically, they're pooping as they walk along eating and they're just like a little lawnmower that's mulching as they go and the soil is happy for that.

Molly: Yeah.

Dave: I feel like most of the time, we probably didn't have regular snacking because if we are out hunting, you're not going to have snacks and if your gathering, you might eat a berry along the way, but everyone's bringing it back home and I feel like most of the time we weren't snacking.

Molly: Sure. And by snacking, I'm always ... I'm talking about more like wild foraged food, right?

Dave: Yeah.

Molly: So like the stuff that you'd be eating out there is mostly fiber. It's like fiber and phytonutrient. It's almost got like no carbs in it, right? Think about nettle or you can't eat at all, but you have to like prepare nettle.

Molly: But if you think about just like gathering green leaves from a forest floor that you might want to nibble on, it's mostly fiber and some phytonutrients.

Dave: Yeah, it's the polyphenols. Even berries. I mean, we know these sweet plump things. I have the native species growing on my property. They're wild. They're half the size of my little fingernail.

Dave: It would take you six hours to get a thousand calories of those if you were lucky and your back would be sore. I mean, and they would only be in season for three weeks.

Dave: So it's not like that was a real serious fuel source, but they're just full of anthocyanins and all these other polyphenols that we know feed your gut bacteria. So it might've just been they had tea, right?

Molly: And then you were also in an environment where you're touching soil and soil is getting inside your body and so that's contributing to the microbiome as well. So speaking of the microbiome, have you heard of this company called Sun Genomics?

Dave: No. S-U-N genomics?

Molly: They're pretty cool. Yeah. So what they're doing is they're ... I love seeing companies come along that are doing what I've been doing in my practice, but that are systematizing it and scaling it.

Molly: That's one less thing for me to have to do with my brain and so what this company is doing is measuring your microbiome and then they interview you and they ask you questions about what's going on in your gut, any symptoms you have with gut dysfunction, anything you really want to work on with your health and then they create a custom compounded supplement of species that are designed to optimize your gut health.

Molly: And so I've had some clients on this that have had some gut dysfunction and they just, they love it. They think it's great. I might even ... I'm not promoting the company, I'm not affiliated with them, but I think it's interesting that we're now getting into the designer probiotic space.

Molly: It's actually happening because I used to actually take the Genova Diagnostics GI Effects and I would literally create custom gut healing programs for people that would replace specific bacteria that would really ... I mean you've talked about histamine producers versus system integrators forever. Giving people custom probiotic regimens that optimize their systems. That's totally coming and it's pretty exciting.

Dave: I'm maybe a little more skeptical than you are on that front. There's so much data about prebiotics and just changing what you eat to stop smacking the good guys that you'll actually grow what you need and I've taken at least a hundred thousand dollar's worth of probiotics over the course of losing my hundred pounds and fixing my health and just anti-aging and not seeing a lot of results from a lot of them.

Dave: Some I've gotten results from, but I'll tell you when I got the prebiotic load up, so I'm getting 60 grams of soluble fiber that feed the good gut bacteria, I also continued taking my probiotics, but I feel like the prebiotics trump the probiotics, but you probably want both and my vitamin data supported that for me. I'm not seeing the probiotics that I take come out in the poop. So a lot of them aren't growing for whatever reason.

Molly: Yeah.

Dave: But the combination is probably best.

Molly: I mean, a lot of these have to be refrigerated, right? And like there's another company that's coming out of San Francisco called Whole Biome and they're creating a specific

probiotic symbiotic blend that's going to be refrigerated and it's literally an intervention for lowering blood sugar.

Molly: So we know that if you have a healthier gut, you're going to have a healthier metabolism and so there's just going to be a whole bunch of companies that are going to capitalize on this specific facet of health.

Dave: Check this out. I was talking with Naveen at Viome because they have a 100,000 plus samples or something like that. It's got to be that many now. They ran it through an AI algorithm.

Dave: They can tell you with some kind of high degree of certainty. I don't know if I can say what the number is, I'd want to check with them first, but they can tell you what your blood sugar will look like from eating a specific food based on the composition of your gut bacteria.

Molly: I heard this and I had a chat with the other co-founder, the scientist, I can't remember his name. I met him at the transformational technology conference. I spoke right after him and he was just saying ... He was telling me this exact thing that they can without fail predict what foods are going to do to you.

Molly: But the problem I told him is that, "Well, we don't eat foods in isolation. We eat foods in combination." And so I would argue that ... The other question like blood sugar is not just about what you're eating, it's about how much you're eating.

Molly: It's about when you're eating it, it's about what are you eating it with. It's about have you have you ... What did you do before you started eating? What are you planning to do after you ate?

Molly: And then like how did you sleep and what's your stress like? So let alone like the pollution levels in your environment and the other issues like Vitamin D. So there's so many things that affect blood sugar that besides just what we eat that I think it's a little bit overconfident to say that we are now eliminating CGM as a tool. That's what he told me.

Molly: He's like, "We don't think we need CGM anymore." And I'm like, "No, you still ... It's still changes based." I mean I've seen a blood sugar spike in myself and I went and I've done ... I've worked out for 30 minutes right afterwards and I've dropped it in like 10 minutes. I've got my blood sugar.

Dave: Yeah. I think there's a market, I think you'll be able to say that you can choose foods that don't spike your blood sugar without a CGM, but I mean, I ran ... I have some very high quality electrical stimulation stuff from that I'm trialing for Upgrade Labs and I've been using this for ... I can take my blood sugar down into the 70's in 30 minutes.

Dave: I mean, I could be running on myself right now, but I mean, I'm sore for seven days afterwards. It's like doing 10,000 squats while I'm sitting and watching TV.

Molly: Oh, is like that machine I heard about? Yeah. So someone from Upgrade Labs contacted me and I started looking at all your stuff and I saw this thing that you guys have that's apparently like a week's worth of working out in like an hour or something.

Dave: Oh, that's, we call that Cold HIITs. So that gives you two and a half hours of cardio equivalent in 21 minutes, but it's doing that by with compression to manipulate lactic acid levels and temperature changes to keep oxygen blood inside your brain and your organs. A different thing. This is one that isn't commercially available yet at the labs.

Molly: Okay.

Dave: But I've been using these waveforms for 15 years now, and you can put on muscle like crazy, but what I'm essentially doing is a heavy duty power lifting workout without ... It's an intense experience. I'm not going to say, but it's ...

Molly: Cool.

Dave: It's less likely to injure you and you can literally do something else while it's happening.

Molly: Cool.

Dave: What I saw in my CGM was, "Wow." I went really low to ... I'm going to lay down if I need to eat something, I actually got hypoglycemic from it which isn't normal, but without CGM, I wouldn't know that and I'm sorry, my gut bacteria just didn't care that I did that. So there's something going on.

Molly: Yeah, yeah. Well, here's the thing that's kind of interesting about mitochondria and blood sugar metabolism. There's really two really good ways to damage mitochondria and the first one is just eating too much, right?

Molly: Over fueling your body damages complex one, but the second one is not using up the fuel you have. The benefit of exercise is that it's essentially using your fuel, right? It's like it's basically flipping the switch, you're going from carb to fat metabolism if you run out of your fuel, that's actually a good thing.

Molly: That's a way to train your metabolism, so that's some way to become more metabolically flexible is to use the fuel you have during exercise, so fast and exercise is fabulous for doing this.

Dave: Yeah, I would share that recommendation for people who have the flexibility in their day. Skip breakfast, workout at the end of your fast around one or two in the afternoon and then go eat and wow, magic will happen.

Dave: It's a really powerful practice and you don't have to do it every day. You probably need to do it twice a week and you're going to see crazy benefits from it.

Molly: I also bet that you had higher ketones when your blood sugar went low. I bet when you went "hypoglycemic", you were still producing ketones.

Dave: I probably was. It wouldn't surprise me and because, I mean, I am the guy behind Brain Octane Oil. I always have some ketones because I have tablespoon to that stuff in the morning.

Dave: My ketone levels usually go to 0.5 so I have got background ketones available whenever I want them. Now, I've got one more question from you Molly, and I'm just loving all the cool stuff we talked about, but how long do you think you're going to live?

Dave: I mean, you're into anti-aging, you're managing all this stuff. You talked about health span, but like just pick a number. What's your number?

Molly: Well, I think that the question is is like do you really want to live that long? I want to live as long as possible without a disease. And so if that ... If I hit past 100, great, but if I'm in a nursing home, no, I'm sorry, I'm not doing that. That's not happening.

Dave: Those are different questions, right? And if it was like, "Oh, I'm going to cut off both your arms and both your legs, how long do you want to live?" Well, you might say, "I still want to live." Or you might say, "You know what? I'm done." Right?

Molly: Yeah.

Dave: But let's assume that your health is functional and like that you move around under your own power and your brain works and that you have health span. So given that as a presupposed notion, what do you think is possible?

Molly: I would be stoked to get to 120. I think that'd be rad.

Dave: Okay.

Molly: But I don't think that we're going to see ... I mean, here's the thing, I've thought a lot about this and I think that if we all want to get past 100, then we all have to be taking way better care of our lifestyles, but the other issue that we're not really accepting, which is that our environment, if we don't get our environment to a state of more balance and harmony, we're kind of in trouble. And so I would argue that it's not just what I do with my lifestyle, it's also how we take care of the world.

Dave: Molly, thanks for being on Bulletproof Radio. It was a fascinating discussion. We talked about all sorts of cool stuff I didn't think we'd talk about. I feel like we could talk for a lot longer and your website is drmmolly.co, that's D-R-Molly.co and despite you talking about your psychedelic trip and living to your late 90's, that's not the kind of Molly we're talking about because ...

Molly: Nope.

Dave: But it's memorable. It's at drmolloy.co and are you taking on more clients or you're spending time ...

Molly: I am taking on a few more clients. I don't take that many at a time on purpose because I go really deep with everybody, but I am going to develop an online course as well soon and I'm working on a book so and expect a lot more media for me in the next year because I think people, I think health media is really a good way to educate large, large swaths of people. So thanks for doing what you do, Dave.

Dave: You got it. If you liked today's episode, you know what to do, go fast or do something like that or get a continuous glucose monitor. If you want, I don't think you can get a little Dave face sticker unless you meet me and I have one and I'll stick it on for you.

Dave: But you can actually use a hot melt glue gun to put bling on your glucose monitor if it's not pretty enough for you, but I can tell you, if you wear one, it is going to make you cool and it will make you aware of what your food is doing to your actual energy levels versus what you think it's doing.

Dave: It's totally worth doing and if you haven't read Super Human, you haven't read Head Strong, you're not read up on some of the topics we'd talked about. They're accessible, readable books that are well, well worth your time.

Dave: And if you don't like reading and you like podcast instead, I actually recorded Super Human for you even in my own voice. So it will be just like this episode, but even more packed with info. Have an awesome day.