

Dave Asprey ([00:00:00](#)):

Guess what's on the counter at 40 years of that Ketone iq. Ketone iq, you can only do so much meditation before you hit the wall metabolically. And then no matter how much you want to go into deeper states, you just can't do it. There's no more gas in the tank. And when people hit the wall, take a shot of Ketone iq and my data says you can go about two and a half times longer in deep meditation if you have ketones present in the blood. That is so cool. You are listening to The Human Upgrade with Dave Asprey.

([00:00:33](#)):

You are listening to The Human Upgrade with Dave Asprey. Today's a really fun interview about a topic that is near and dear to my heart, and it is about ketones and what they are and why they're important. Now, before you say, oh God, I don't need to hear anything else about ketones, there's a lot you don't know. And I met someone recently like, oh, Dave, you invented the keto diet. I'm like, no, I didn't. Robert Atkins invented the keto diet the year I was born. And this is something that we've learned more and more and more about over the years. I even had a guy on the show who's probably the most preeminent or was the most preeminent ketone chemist on earth named Dr. Vich, who studied with Hans Krebs. It was the last interview he did before he passed in his eighties. So ketones are not new, but our knowledge about ketones is exploding.

([00:01:29](#)):

You also know a little bit about MCT oil because I turned that into a billion dollar industry category by talking about what it does for cognitive function. I've had interviews with multiple doctors about ketones and MCTs in particular about what they do for cognitive function, what they do for Alzheimer's disease prevention for longevity, but there's so much more, and we're going to go really deep on this show, including the best way to get ketones. And I can tell you, MCT oil is always supportive, but there are new powerful ways that are safe. I've had concerns for a long time. Number one, I don't think you should always be in on a ketosis based diet because over time you probably want to get some fiber in your diet, not roughage, but soluble fiber for your gut bacteria. But what if there was a way to raise ketones?

([00:02:24](#)):

There is a safe way. In fact, it's something that I do every single time I fly. I use a product called Ketone iq, and our guest today is the CEO and Co-founder of HBMN, the company that makes Ketone iq. And I take it every time I fly and I take it when I'm going to be on stage for very specific mitochondrial reasons. But I'm going to teach you in this episode, and Michael's going to teach you the pros and cons of the different forms of getting ketones. Then Michael's interesting. He was on Forbes 30 under 30. He's a triathlete. His record on the marathon is two 40, which means he's basically a masochist. Just kidding. Michael, welcome to the show.

Michael Brandt ([00:03:08](#)):

Good to be here. Looking forward to a fun conversation. Dave,

Dave Asprey ([00:03:10](#)):

Have you ever been called a masochist in your interview before?

Michael Brandt ([00:03:13](#)):

Yeah, I do have a pension for pain. There's definitely a point of just enjoying it. I don't know who hurt me when I was a kid or what I'm punching at. I know a lot of

Dave Asprey ([00:03:36](#)):

Wow. But it turns out my next book, I go really deep on the subject of pain. This is coming out in 2025 because there is actually a really good biological reason where you might choose to do that. Even a cold plunge will do it, but anything that's going to just reset your dopamine receptors, but we won't go too deep on that, but I'm always intrigued when you have a CEO of a successful company, M-H-B-M-N, the makers of Ketone iq, you're actually backed by Mark Andreessen or Andreessen Horowitz and Mark Andreess and I go way back to Silicon Valley days when he was at a company called LoudCloud that became Op source, which was just one of the early cloud computing companies. So we were partnered with him back when he had just come out of Netscape. So very, very successful venture investor and I love it that you're one of the first biohacking companies to go out there and get Silicon Valley VC funding. Same thing I did with Bulletproof to get real venture capital money, which is part of just moving our industry forward. And by the way, are you going to be at the business of biohacking conference I'm putting on in September in Austin?

Michael Brandt ([00:04:43](#)):

Yes. Silicon forward to that. It was just catching up beforehand on everything going on there and it sounds like the who's who. So yeah, very much looking forward to that.

Dave Asprey ([00:04:51](#)):

So guys, if you're interested in learning how to grow, a real biohacking company got more than a hundred executives planning to come, and all the people who got me past a hundred million at Bulletproof, I'm bringing them together to teach you and I'll be teaching you what did I do? What does it take in order to grow a business that can change the world? Because it's one thing to say, I have a cool biohacking product, I don't really care because if no one uses it, you failed. So you have to make something different and you have to get it out there and that's winning. And what you've done with Ketone IQ is interesting to me because I've been a skeptic on the ketone front and long term. Listen, like Dave, you wrote one of the preeminent books on how to use ketosis for performance like the Bulletproof Diet, intermittent fasting and ketones.

([00:05:38](#)):

But the point of that book was ketones are something you want to raise for a period of time, and then you want to go out of ketosis. So you have metabolic flexibility, but if you can have ketones and glucose present at the same time, you can actually call on two power sources, which is great if you're running a marathon, if you are up 18 hours on camera and just doing all the hard things to do. We need brains and focus and muscle activation, so they're powerful. But the old way was just don't eat for a while or eat a diet that's mostly fat. What are the downsides of doing that?

Michael Brandt ([00:06:16](#)):

The first downside is that it's difficult to adhere to. It's hard to do. A lot of lifestyle factors come up. You're out to dinner with friends or your significant other is on a different diet. It is hard to adhere to. And a lot of people, that's not a good enough excuse. They'll still do it anyway, but that is a real friction point. It's hard to actually do it. And then as far as long-term health benefits something very well, and I think a lot of your audience knows well, that your point on fiber, you want to have more soluble fiber. You might not be getting a lot of that on a ketogenic diet. There's certain types of training that you're doing. For me, I am big on running VO two max maxing a big athlete, and there's a place that carbohydrates play in terms of peak performance in that sport and athletics in general.

([00:07:11](#)):

But there's also a spot where fasted exercise plays a role. So you really hit the nail on the head with the metabolic flexibility. The goal is not to constantly, I don't think, be in a ketogenic state or constantly be in a fully carbohydrate replete stages, overdoing it on carbs all the time, like standard American diet. You want that flexibility. And so there's some nuance. I think a lot of people want to paint with black and white like, oh, go full keto or keto is trash. There's definitely nuance in between that it's not lost on you and your audience

Dave Asprey ([00:07:44](#)):

Cycling in and out of ketosis makes sense. And if you're on a high fat diet all the time, one of the problems is that the types of bacteria that you need in your gut that are good for you, they can be bad for you if there's never any food for them because then they'll eat you as they're food. So you can get leaky gut if you go on a zero carb diet for long periods of time. That said, there are some people who do carnivore. I actually tested what we now call carnivore when I was writing the Bulletproof Diet, which it can be a ketosis diet if it's not too high in protein, but the difficulty there was it's great for a month or two, but then I found I developed some new allergies that got leaky gut reduction of sleep. So that's a way to do it.

([00:08:26](#)):

And a high fat diet, especially without soluble fiber, it increases the permeability of the gut so that lipopolysaccharides are gut bacterial toxins that are major causes of aging inflammation, they actually can go into the body better. This is why cycling and nuance is important. So that's like step one, don't eat carbs. Step two, add MCT oil. And that for me, I found I could eat a pound of sushi with rice the next morning. I'm zero ketones. I could drink MCT oil and I got myself up to 0.5 on a blood meter for ketones. And that's good because that's the entry level for ketosis, but it's maybe not as high as you'd want to be. So then a bunch of companies came out and said, oh, we have these ketones, salts and ketone salts take basically the precursor for ketones. They add them to a magnesium or a sodium or something like that and you take them, but they have insane amounts of minerals and they're probably rough on the kidneys and they're actually bad for mitochondria according to the researcher that I think has the most knowledge about this.

([00:09:30](#)):

So I've never been a fan of ketone salts. I actually don't feel good on 'em. And so these BHB salts are another way. I said I'm not going to do that. But then what you did with Ketone IQ is you came out with a new form, it's a liquid form, little package, little bottles. I throw a couple in my luggage, literally every flight. If it's a long flight, I'll do two. If it's a short flight, I'll do one that was little bottles and I work with my assistants when I'm packing, I actually meter them out. How many hours in the air am I going to be and how many bottles of ketone IQ am I going to have? And I do that for mitochondrial protection from ionizing radiation because you feel better when you land. So what do you do different with this? It's not ketone salt and it's not even a ketone ester and ketone ester are really rough on the liver. I synthesize some in 2014, they were like \$40,000 a kilo. They tasted like crap and they uncontrollably raised ketone. So I don't think those are what you want to do. So what do you have here? Why is this different? Why does it work?

Michael Brandt ([00:10:27](#)):

What we've created is something called a ketone dial, which is the immediate precursor to blood BHB. You convert it on first pass metabolism in your liver into beta hydroxybutyrate. So when you're measuring your ketones, if you're measuring 0.5 or 1.0, you're measuring that BHB level and ketone dial converts into that directly. So there's a couple of features of that. One is it's first pass metabolism. It's

one step, it happens, one-to-one. So everything that in the ketone dial converts and it also converts very quickly. And also because there is a convergence step, your body's able to regulate it. So you get this smooth curve, you're creating these ketones as you need it. You're not, as you said, you don't have this runaway dropping a bolus of ketones into your system. You have it titrated by your liver actually controlling that conversion process. So it's nice because a lot of people know c I'm a big fan of MCTs as well. Medium chain triglycerides, I think a lot of everyone knows, just to explain to anyone who's catching up is medium chain triglycerides converts very easily into ketones, but it's still a couple more steps. What we figured out with the ketone dial is much closer to that end product of blood ketones, blood BHB.

Dave Asprey ([00:11:45](#)):

This is something that is just a way to think about biohacking. So you'll see people say, well, your body can convert as say protein into carbs by gluconeogenesis. Yes, it can. Your body can also, and so that's what you'll see from the carnivore side on the vegan side. Well, if you just have these plant-based omega threes, your body can convert them into EP and DHA. Well, yeah, but it converts at a ratio of 45 to one only if you have all the right co-factors present and it's metabolically difficult, so the body doesn't want to do it. And if you have one thing wrong, it just won't work. Anytime you can get closer to the state that your body will use something, you're relying less on your body to do stuff and more on the substance to do it. So what you're doing is you're taking a step beyond MCT oil and you're moving into this thing where it's just one step away from ketones.

[\(00:12:38\)](#):

And the benefit of that is that because it's one step away, my body still can convert it or not to control the amount in the blood. If I was to do the really bad tasting ketone esters that I was experimenting with years ago, there's no rate limiting. So you get ketone levels in the blood of 10, and there's kind of a contest among low carb people sometimes like well buy ketone levels are higher than yours. My perspective on that, that's the same as thing. My blood sugar levels are higher than yours. There's no benefit to having more of them. It means your body didn't use them. So artificially spiking ketones into insane levels probably isn't good for you. And certainly I don't see any benefit to it. What I like about ketone iq, the reason I use it is that it's much more affordable than ketone nesters and ketone salts, but it actually raises levels in a way that my body controls. But it's like I'm fasting and I could eat a donut if I ate donuts and I could take a packet or a pouch or a little bottle. By the way, I love the new packets. I know they're not commercially available yet, but thank you. That made travel so much better. I can take one of those and my ketone levels will be up and then that's protective. So this is just a new way, a ketone diol and ketone iq. I think you're the only guys who make one of these at this point, right?

Michael Brandt ([00:13:55](#)):

Yeah, and a big part of how we've brought the cost down is we make it be a fermentation process. It's actually super cool. It's like a high tech kombucha factory or you basically take this very targeted type of bacteria yeast and you feed it plant biomass, and then it creates the output, in our case, the ketone dial. It's super cutting edge. What's really cool about it, Dave, is that it's metabolism all the way down. It's like you have these little bacteria that are metabolizing coconut, but they're into this dial. So they're doing a lot of the steps that you would be doing in your body, but you just have these really friendly bacteria in our lab that are already doing that for you, and then it ends up at that and ketone dial state, and then that's what makes it into our product and that process, that was a big breakthrough for us to be able to bring the cost curve down.

Dave Asprey ([00:14:45](#)):

That's huge. I mean, you and I have both been in the ketone business for more than 10, and I love it also that you're a computer science guy like me. So we're both nerds here and it's really hard to work with these things and to be able to do it by fermentation. That's true, innovative creation of new tech, which is just amazing. And also, I got to say, it tastes reasonably good. It's not the most amazing thing I've ever had, but earlier versions of keto nesters, it was like drinking gasoline. You were sad that you did it, but then you liked how you felt afterwards. I got my 15-year-old to take these and he doesn't ask for them, but when I toss someone on a flight, he's like, all right, I'll do this. And then you get those benefits. And let's talk about benefits of raising ketone levels. Do they actually cause mitochondria to work better or do you grow new mitochondria? What do they do?

Michael Brandt ([00:15:41](#)):

We're seeing both that we see increased mitochondrial efficiency and a few different ways to measure that. There's one is the conversion of substrate into a TP, the energy currency of the cell. Ketones convert into a TP in your mitochondria using less oxygen than other metabolites. So you're basically able to get energy for easier. And the first customer that we had, and my company had was in 2019, we got a \$6 million contract with the United States Department of Defense Special Operations Command. And they were specifically interested in fatigue states and fatigue states at hypoxia. So at altitude or deep sea where you have less oxygen availability, you have less oxygen availability when you're at altitude, you also just have less oxygen availability when you're training really hard when you're out of breath, when you're not able to get enough oxygen to feed the needs of your muscles and your neurons and all the cells in your body.

([00:16:41](#)):

And the ability of ketones to turn into a TP more efficiently ends up recovering significant performance across muscle cells and especially cognition markers because of that ease of conversion into a TP, again, requiring less oxygen. And the same holds true at sea level as well. When you're not in a hypoxic state, you just have easier creation of energy. It costs less energy to deliver energy to your cells. And then there's other factors too that we've seen where too, which is that ketones clean, clean up, reactive oxygen species, they reduce oxidative stress, which oxidative stress is the gunk. If your body is an engine, then you're creating engine gunk as you age. And oxidative stress is one of the key biomarkers of aging. And ketones actually clean that up. That's not something you're necessarily going to feel right away. What you will feel is like your brain is able to function more clearly, but also what's going on in the background is you're cleaning up oxidative stress and you're doing just cleaner metabolism.

Dave Asprey ([00:17:46](#)):

That's what the preeminent researchers are finding. Certainly that's been my experience and a lot of people just feel so much better, even on something very basic like MCT oil, which itself was inspired by the Tibetans. Their yak butter tea drink is also a ketosis beverage and they don't always take it without carbs, but what they're doing there is they're taking the processing the body would've done to turn the water in, yak butter tea into the kind of water we use to make a TP. They're actually doing that outside the body. So you drive efficiencies in the body by doing as much processing outside the body. The preeminent way we do this as humans is called cooking. So we can process our food in the kitchen to make it so it's more bioavailable for us. We can do it in a good way or a bad way for our biology.

([00:18:36](#)):

You're using a fermentation process to make this stuff so that my body doesn't have to do all that and I don't have to create the low carb conditions to do it. And it comes in and you're seeing an improvement

in mitochondrial biogenesis and an improvement in mitochondrial function because ketones actually have more electrons than carbs. So this is the direct mechanistic way. And there are lots of studies now that support that ketones have all these benefits including the anti Alzheimer's effect. In fact, even MCT oil, which is the very weak donor since the nineties, it's been available as a medical food at very high costs with lots of studies supporting that improves Alzheimer's. So you look at something like Ketone iq, which is much stronger. The effects on brain function are crazy.

[\(00:19:24\):](#)

You mentioned working with special operators. I had a chance to meet my friends over at Black Rifle Coffee and these guys are all former CIA and special operator guys, and they're saying, Dave, when we were in the CIA out of special forces, we all had brain damage from all the concussed blast. It's real common in veterans and our brains were fried, so we were drinking bulletproof coffee all the time because it was the only thing that would turn our brains on. It was an inspiration for us to get into the coffee business. Such a powerful thing. And so you find these things where people's brains are stressed or they aren't working as well. And that's always true in a special operations thing because even if you haven't had any traumatic brain injuries, you're still in a high stress situations circadian disruption doing really dangerous things.

[\(00:20:14\):](#)

So more electrons in the brain reduction, oxidative stress equals even if you do get a brain injury, which can happen in the field, you're much less likely to have long-term problems from it. Same thing guys like Nick Foles who just retired yesterday when he won the Super Bowl, he was on MCT oil and coffee and he wrote about it in his memoir because, well, if you're quarterback and your brain doesn't work, you're in trouble. You're going to get hit. Should you have ketones present? Yes. Should you have Ketone IQ present? Yes. So if I was in MMA or I was in any kind of a situation where I'm likely to hit my head, I am always going to be on ketone IQ in those situations because well, I had better functioning brain and I have more energy to deal with any type of injuries that happen. So I think this is a pretty profound way to do it.

Michael Brandt [\(00:21:01\):](#)

That's huge. And that's a big area of continued research that we have. We have a project going with the Navy Health Research Center looking specifically at TBI concussions and how ketone IQ can mitigate the symptoms of acute TBI as well as chronic TBI and rescue brain energy in those contexts. Because in addition to everything that you're saying is also that your ketones in your brain are not mediated by insulin. It's a different pathway to metabolism than carbohydrate glucose metabolism. And so when you have that impairment, when you have blunt trauma to your head, you have this damage done that there's damage on in the moment, but then there's this continued damage done if you continue starving your neurons and if you're able to provide additional substrate via ketones, then you're able to rescue a lot of the what would be follow on damage from the starving neurons.

[\(00:22:02\):](#)

And then we also see people, someone who had a concussion a year ago and they just have foggy brain sometime they feel like we do a lot of work with a special operator's, the general military community, veteran community, and people say, there's one guy I was talking to, he was talking about how it felt like the rust was coming off the chains the first time he tried ketone iq. He's like, wow, feel like the rust is coming off my chain. I feel like I'm thinking the way that I used to think 15 years ago. And I mean that's what motivates me every day. I think someone like you and me, I think a lot of the listeners in, there's a lot of ways to make money. You can make money. I don't know, a lot flipping real estate, a lot of successful business people, but why do we do what we do in particular?

[\(00:22:38\)](#):

It's for that exact moment of someone who's served the country and they have paid a price with their body and we're able to help bring them back to another level. That's cool. Money can't pay. I hope everyone on the team here, I hope all our investors, I hope we make my job, is to make it a good financial outcome for everyone. And that's all tracking. But what really excites me, I think what really excites this whole mission here, ketone IQ, is being able to help people in a deeper way is very mission driven. And I know that's something has always inspired me about our conversations as well, Dave, just like, yeah, you could have made a bajillion dollars in software if you really wanted to, and instead you went into making humanity better. And it's inspiring honestly. It's cool and glad to be part of, I feel like the same mission that you started all these years ago, excited to be continuing and helping carry that torch

Dave Asprey [\(00:23:34\)](#):

Forward. Thank you. I genuinely appreciate that. And I mean both of us, if you're in Silicon Valley and working for VCs and tech companies, you can make a lot of money, but if it's not improving lives, it doesn't feel good. I tell this story sometimes I feel like lately I haven't talked about that much, but having hit 300 pounds and arthritis and chronic fatigue syndrome and fibromyalgia before I was 30 and literally going to the doctor going, I feel like I've been poisoned. I don't know if I can keep doing my job that I love because my brain is just cooked. And just that feeling of helplessness and just realizing no one's going to come for me. No one seems to understand this and just say, I'll hack it. That's been my motivation here. And I feel like you're on that same path where you're just saying this is more impactful in the world than another social media metric or something.

[\(00:24:25\)](#):

So you have to like what you do. So kudos to you for doing this amount of time. And the biggest thing that impressed me is ketones. MCT oil is not very expensive, but it doesn't raise ketones that much. It's like just barely enough to get in effect, but it's cheap and easy to throw under your coffee or your smoothie or whatever. But it's supportive. We'll put it that way. But it used to be like \$30 a dose. It was way expensive. So if you were going to, not for MCT, but for the powerful ketone things like this, and so for you to just use real science to cut the cost by two thirds actually more than that at this point on a per dose basis and to make something that works better, I just love that that's how it's supposed to be. So I respect just the innovation and I think a lot of people don't know that that stuff's happening.

Michael Brandt [\(00:25:19\)](#):

Yeah, I appreciate you saying that. Just look behind the curtain as an entrepreneur where we've been jamming on ketones for some time now. Our very first ketone product we brought out in 2017 got this big contract with special operations command in 2019. It wasn't until actually 2022 where we figured out that full fermentation stack and a way to get this out to market at under \$5 for a shot and that entrepreneurial journey, I don't regret any step of it. Everything had to happen in the order that it happened in where you have to have, I always think about those pictures of the computers from the 1970s and it's like here was a kilobyte of ram and it's the size of a U-Haul, and you have got eight dudes full on deadlifting this kilobyte of RAM into this U-Haul truck. I always think about how, okay, now we have a terabyte in our pocket that's connected to the cloud.

[\(00:26:15\)](#):

You always have to start there. And I think a lot of times that story is lost in the entrepreneurship journey where we had to make the \$35 tastes like battery acid and the only people in the world using it are Navy seals and Tour de France riders. And that was a necessary part of our journey. But you know

what? There was a thousand of 'em. We had our thousand true fans, and then we had some flywheel that was going. It's like, okay, well if this works in really extreme conditions where Tour de France riders are riding the equivalent of a marathon a day for three weeks, like high metabolic demands, special operators, high, high metabolic demands as you were describing, if you're able to solve something for those people, that's really interesting. Okay, now you can fundraise a story on it around the story on it.

[\(00:27:01\)](#):

You can recruit a killer team. You can start investing into, okay, well how could I scale this up if I could solve this same problem, but much cheaper and lower friction. Everyone's doing metabolism all the time, 8 billion people, that's the tam. That's the total addressable market. If we could figure out how to scale this down from there. But it always starts, I think when you're doing something really novel, you always have the U-Haul sized truck of a kilobyte of ram and whatever that analogy is into anything you're doing. Like Uber, when it first started, you were texting a number and some guy would come pick you up in a cart. Everything starts out a little bit expensive or clunky or niche or weird. And I think it's the job, the entrepreneur to battle through those early stages and make sure, I mean, you always have to connect the dots into making sure that it doesn't stay niche. You want it to connect into a generalizable human need that you could get to provided that you bring down the cost and increase all the other factors of scalability on it.

Dave Asprey [\(00:28:00\)](#):

You sound like such a tech guy. There's two criticisms of biohacking that just come up routinely. One of them is people say, oh, it's only for men. Or I'm like 60% of biohackers have been women since day one. Literally, that's what the traffic levels look like. You go to an event, it's men and women and there's dozens of preeminent women biohackers. And so that's just not data. That's not what the data says. And the other one is that biohacking is only for rich people and all of the biohacks, including ketones, it's a principle. And the definition of bio can change the environment around. You have an inside, you'd have control of your biology, you can get ketones for free, don't eat that will do it, right? It's less comfortable. And then there's the low cost stuff like MCTs, right? And then there's what the, I call the crazy billionaire level, which used to be \$30 for a dose of gross tasting stuff.

[\(00:28:58\)](#):

And if you're like, okay, \$30 a day, and if I do just one a day, I'm spending a thousand dollars a month on the stone's going to do that unless you have money to burn. So what the very wealthier doing is they're burning their money to figure out how to do it. So the rest of us get access. And it's the same thing with mobile phones. It was \$20 a minute and 40 grand in the trunk of your Mercedes thing in the eighties, and it barely worked. So they funded what's now a dollar a month for phone service in Africa. And what happened in the Keone space is exactly that. You had this very high end, high performance, we might die if we don't have this. I'll spend \$30 on that. I'm the Department of Defense. And then now you're taking the cost down by more than two thirds and you're making it more and more accessible.

[\(00:29:48\)](#):

And if people keep seeing these results and you keep scaling it someday, it'll probably be a dollar a day. You'll say, well, should I go to McDonald's or should I have a shot of ketones IQ for breakfast? And you go, I think I want that more than a McMuffin, and this is how innovation in biohacking happens. And so I'm really stoked because you really did that. You cut the cost dramatically so it becomes more and more accessible. And that's all these technologies. Red light therapy used to be really expensive and now it's quite affordable. So coming down for everyone, and I just think you've done something pretty magical with this because you didn't actually cut efficacy. You increased efficacy and cut costs, which is what we do in chips and technology, not necessarily always biohacking.

Michael Brandt ([00:30:31](#)):

I love it. I love the tech optimism. Yes, yes,

Dave Asprey ([00:30:34](#)):

Yes. And by the way, if you're listening going, all right, Dave, I know you're going to drop a code because anytime someone comes on with a product, I ask them to do that. So go to [ketone.com/dave](#) and I'll give you 30% off a subscription. And this makes this really affordable, and you don't have to use it every day. You might want to use it when you need to focus, use it if you're going to write a book or go on stage or do a heavy workout, or very specifically if you've got crappy sleep or if you're going to be traveling a lot. It's really, really effective. And I want to go through some questions from the upgrade collective. One of the questions, and if you're listening and you're new, the upgrade collective is my mentorship group and it's highly affordable. You go to our [upgrade collective.com](#), and then you get to be live in the podcasts and ask questions that I'm not asking. So one of the questions here from Leah is can you take it with black coffee? I recommend danger, by the way, danger Coffee, but can you take it with creatine and aminos as a pre-workout or do you need to have it on empty stomachs? How does it work?

Michael Brandt ([00:31:40](#)):

Yeah, you can stack it with all of those things. It doesn't interfere. It's complimentary. Really standard to stack it with caffeine, creatine, whatever's in your typical morning starter pack to start the day. Yeah, it stacks well with all those things. Does it have any interactions or anything like that? It's strictly additives.

Dave Asprey ([00:32:04](#)):

I actually ran a test, so in the last three weeks, I was in mostly remote parts of Turkey visiting the oldest ruins on the planet called Goble Tepe with my son, and then we were in Rome seeing just really old technology history stuff. It was really magical. But in Europe, I don't respond nearly as poorly to gluten. So I'm like, all right, I'm going to be eating some gluten here. So I actually tested eating five baklava, which is my favorite dessert ever. And then having a ketone IQ and can tell you they go well together either way, so you can take it with whatever you want. I don't even think activated charcoal would stop it from working. Like this is just going to go in. It's innocuous.

Michael Brandt ([00:32:50](#)):

Yeah. What's really cool about it is you can think of it as energy. It's this nitro source of energy. You're getting very pure ketones into your system and it stacks on top of whatever you're doing. So if you're fasting, cool, you're now fasting, plus you have added ketones available. If you eat five baklavas and you have ketone iq, you're now just stacked ketones on top. So it's this form of fuel. Again, it has calories in it, which it may be surprising to people or not that there's calories and ketones and you were just stacking those on top of what you're already eating. Now they're very special calories for all the reasons that we discussed. And another reason that we didn't discuss is that it's been shown there's not a lot of literature around how when you elevate your blood ketones, you actually also increase, sorry, you suppress ghrelin, which is the hunger hormone. And so not all calories are the same, and we know that, right? That a very sugary calorie makes you not very satiated. You're very hungry. Steak and eggs is very satiating. Ketones are on that end of the spectrum where when you have ketones present in your system, yes, there's calories, but they're a very appetite suppressing type of calorie, which opens up a lot of interesting use cases.

Dave Asprey ([00:34:02](#)):

They also can't be stored as fat.

Michael Brandt ([00:34:04](#)):

They can't go backwards. Yeah, they can't. Your body will just use them.

Dave Asprey ([00:34:08](#)):

It's really funny because there's still some of those really angry 23-year-old fitness influencers who were saying, I had a Diet Coke and a Snickers bar, and they canceled each other out because calories. I've seen those guys for years, and then when they're about 28 or 38, they're like, my whole biology's broken. My brain doesn't work, and I gained 20 pounds and I have so joints, and I'm like, welcome to biohacking. And then all of a sudden they realize that it matters where the calories come from and ketones will not store as fat. And you can take ketone IQ at the beginning of a fast, so the fast doesn't hurt, and you're still fasted even though you had calories because what your body was doing was making you feel like crap for three days as it was working to turn on its ketone production. So since you already gave it ketones, it's like, thank God. But here's a question from one of our listeners. If I take Ketone iq, is it going to suppress my own production of ketones?

Michael Brandt ([00:35:03](#)):

Anything that you eat is going to suppress your production of ketones. If you work backwards from max ketone, production is when you're fasted, you are burning energy, you have an energy need, you have no new calories coming in, and you need to produce energy. And especially for your brain, you're going to make ketones. Any calories that you add to your system are going to slow that down. To a degree, if you eat an avocado, if you eat an egg, if you eat MCT, any new calories into your system are going to reduce your body's energy need deficit from which you're pulling on your own body fat stores. Now, within that, there's just different quality of types of calories where if 70 calories of Ketone IQ helps you feel satiated and able to push through another 12, 24 hours of your fast, that's a really effective use of those calories. And on the net, you're going to be in a calorie deficit from that. If you're operating your life for 24 hours and all you've had is a couple of shots of ketone iq, you're going to be in a net calorie deficit, well, you'll be slightly less of a deficit than if you'd eat nothing. If you just did a fast. Again, that's the best way to maximize. I don't

Dave Asprey ([00:36:15](#)):

Agree.

Michael Brandt ([00:36:16](#)):

Oh, okay.

Dave Asprey ([00:36:18](#)):

Why?

Michael Brandt ([00:36:19](#)):

What's your take? Yeah, there

Dave Asprey ([00:36:20](#)):

Are studies that show that if you have a standing desk or a treadmill desk, you automatically eat more and then sit more later to cancel it out. So what's going to happen if you take ketone IQ during a fast, even though it has 70 calories, your body will consume 70 calories or more because you feel better. So we're only looking at calories in, but your calories out are higher when your metabolism works better and your body will naturally use those. So I am so tired of these, I would just call them like fasting bullies. And you see vegan bullies, fasting bullies and keto bullies, and the fasting bullies are like, well, in the studies, mice only had water. I'm like, mice didn't have keto IQ and espresso machines. But here's all the reasons. You're still fasted when you do that, and it works better and it creates less human suffering.

[\(00:37:11\)](#):

So I would just say you're crazy if you're doing your first fast and you're just going to say, I'm going to go hardcore. Now, you might do that to prove to yourself that you can handle suffering, in which case, yes, but if you're saying, I actually, I'm a parent, I've got to take care of my kids. I need to just not deal with all these distractions from going and feeling keto flu and all that. So you take a keto and iq, right? And then you didn't have any hunger that day and you did your first 24 hour fast ever. I would say that that works better than what I used to have people do, which is you could take a teaspoon of butter and a table spoon of MCT oil and put it in black coffee and yes calories, but you're still fasted because your insulin levels don't change.

[\(00:37:56\)](#):

And more importantly, your mTOR levels don't change. And there's third parties who validated that. So it's eating a small amount of calories, but you suffered less and you were still in a fasted state metabolically. You can also do that with soluble fiber. There's certain forms of soluble fiber that only raise fatty acids when they're fermented. So you have that, you feel more full, but you're still getting the metabolic benefits of a fast. So it's very nuanced, but I'll just say, if you're new to fasting, number one, read fast this way and then try some black coffee danger coffee's better and try a ketone iq. You don't mix them. That would taste gross. You just take a of the ketone iq, it's like in a shot glass kind of thing, and then drink some coffee good and has caffeine, and then like, oh my God, I went 24 hours without eating and I didn't notice. That's when you're winning. And we're like, I suffered greatly today. If you're a masochist, as we were talking about before, or you're like wanted to show yourself that you could stand up to the food demon in your head, cool, man. But if you have a family in a job and a mission, get it done. And this is the kind of tech once you do that.

Michael Brandt [\(00:39:05\)](#):

Yeah, I think that's a really good nuance on this, the pragmatic approach to it. There's an easier way to do it versus less easy. And then also just on the fact that we're always in an energy balance. If you're standing up, you're probably going to burn more later. And if you have a little bit more calories, your body's going to maintain this energy balance to it. So it's not so simple as your body just must burn 2000 calories a day. There's nothing written in stone about it. It depends on what you're doing and what you're eating. And yeah, I think the nuance there is super well said,

Dave Asprey [\(00:39:39\)](#):

If only we could make things more simple than they were, except there's a level of simplicity. And after that, it stops working. And this whole idea of here's how many calories your body burns every day, it's like, what was the atmospheric pressure that day? Oh, you didn't track that. What was the temperature of your bedroom? You didn't track that. How much water and electrolytes did? All of those are meaningful variables. You have no idea how many calories your body burned today. None. 50% of them are not from exercise. How hard did you think today? Because that's up to 20% of your calories. So

people in calories and calories out, you can't measure your calories out. It is completely made up number. And it's the same thing as in Rome. You cross yourself a certain way when you go in because you believe it does something, and maybe it does, but this belief in you knowing how many calories you burn is absolutely a religious belief that is not backed by any science.

Michael Brandt ([00:40:33](#)):

That's such a good point. I would love to know what the exact setup rig you could build to accurately measure that if you had a perfect bubble around you that measured every single,

Dave Asprey ([00:40:44](#)):

Oh, that's why they do it in a real calorie chamber. When they do these studies, they're fascinating. They measure everything. You breathe in and out because then you're telling exactly the amount of CO2 and oxygen, but they're measuring temperature of the room and everything is measured. And then you can really tell on that day, under those conditions, how many calories did you burn?

Michael Brandt ([00:41:06](#)):

But if you solve a really hard math problem in your head versus you're just like Shanti the whole time, one might burn calories, one might burn more calories.

Dave Asprey ([00:41:15](#)):

It's really funny. But it turns out the Shanti stuff is as intense as hard thinking. And I know this because 40 years of then my neuroscience company, guess what's on the counter at 40 years of that

Michael Brandt ([00:41:28](#)):

Ketone iq?

Dave Asprey ([00:41:30](#)):

Ketone iq. And what I found out years ago, I've been training entrepreneurs and celebrities and pro-athletes, brain's a five day intensive program. And it's one of the reasons I could do what I do. And I've been doing this for more than a decade, and you can only do so much meditation before you hit the wall metabolically. And then no matter how much you want to go into deeper states, you just can't do it. There's no more gas on the tank. So I've been for years using MCT and Butter and Decaf Coffee and all the mitochondrial supplements on the planet, and when people hit the wall, take a shot of Ketone iq and yeah, it's expensive, but I have it there most expensive ish. But if you have eight people every week going through this intense brain thing, I'm like, this is worth it. Because every minute of time they can train their brains in advanced meditation. They're trying to do 40 years of meditation in five days. It's like a marathon for your brain in meditation every day. So yeah, I use Key Don IQ for that because it actually lets you meditate harder and longer, and you can measure the improvements in the amplitude in the brain. And my data says you can go about two and a half times longer in deep meditation if you have ketones present in the blood.

Michael Brandt ([00:42:39](#)):

That is so

Dave Asprey ([00:42:39](#)):

Cool. So there's a reason for this, right? So I think Ashanti might be more work than you think it is.

Michael Brandt ([00:42:46](#)):

No, I like that correction. Maybe that's not the right black and white. So shanti's up there with solving the hardest math equation,

Dave Asprey ([00:42:53](#)):

It's a lot of work when you're meditating properly, like manipulating your body's energy fields and expanding your awareness and monitoring all these systems that are normally not monitored. It's big. I would say that the most passive brain thing you could do other than maybe sleeping is watching a video like watching TV or scrolling on TikTok or something. That would be your lowest metabolism.

Michael Brandt ([00:43:16](#)):

That's the right straw man for the other side. Yes, right? Yeah.

Dave Asprey ([00:43:19](#)):

But it's funny though, that data point about ketone IQ and advanced meditation, and now I'm just going to put this out there. I didn't talk about this too much on the show. I've done training with Alberto vto and Shamanism, and I've learned with guru level leaders of multiple lineages just over the years. I feel like grateful and blessed that I've managed to get to know some of these people just kind of through serendipity. And they offer, here's a new way to meditate. Here's a new thing, here's what I do, and here's the kind of upgrade from what I've learned from my lineage. And then I say, okay, that's cool. Here's what I know, and I give them some ketones. Oftentimes it's just all the mitochondrial enhancement stuff. Sometimes it's the true dark glasses. And every single one of them who has increased their ketones or increased mitochondrial function comes back and they say, Dave, my powers are stronger.

([00:44:17](#)):

Every one of them. One friend who's in his eighties who is kind of flagging, he actually called me with tears in his eyes and he's like, Dave, I got my powers back. And it's from ketones. It's that important. It's from mitochondrial and there's so many ways to improve them. And I just know I had terrible mitochondria in my twenties and when I got my mitochondria back, like this is the thing. But I don't talk enough about the energetic and meditative aspects of this, but I know I have listeners here who do a psychedelic journeys. We actually just launched this week actually was our first psychedelic assisted neurofeedback at 40 years of Zen. And if you are doing a medicine journey, and before you do that, let's say an hour before you were to do ketone iq so you have more metabolic energy in your brain for altered states, guess what's going to happen? You're going to go deeper and you're going to have more control and you're going to have a better experience. This is a broad spectrum way to just upregulate your awareness.

Michael Brandt ([00:45:15](#)):

This is huge. And this is not just backed by modern science. This is backed by the fact that for millennia people have done fasting and purging, leading into plant-based medicine journeys. And why do you think that they're doing that? Well? Because in part, you're inducing yourself into a state of ketosis because again, your brain is going to be running more efficiently off of those ketones. And so if what we have with Ketone IQ is a tool that helps enhance that is a very common stack. When you're doing mind

altering substances that increase brain activity, they increase brain energy demand. I learned something new that just meditation, even without plant-based medicine, it makes intuitive sense to me as I learned today, that that also increases brain energy demand. It's not a chill state. It's an active state, and that in any state of increased brain activity, ketones are going to help you out.

Dave Asprey ([00:46:11](#)):

There's a state called Samati that you'll hear about if you're into advanced yoga and things like it's a state of sort of merging into oneness. It's a really, really beautiful state. And the traditional ways of getting you into somebody always involve fasting, but they don't have to. They just have to involve ketones, right? And it's because the brain energy demands, especially if it's the first few times you've done something like that, it's like learning to do a kettlebell swing or learning a new way of moving a new exercise where it's demanding you haven't done it before. So there's the learning side and pushing through and the struggle to feel, oh, that's what I'm supposed to do. If you have enough energy to power that discovery process, the curiosity, the pushing and failing and feeling it out, you get there faster. And then when you get there like, oh, look, I can lift more.

([00:47:04](#)):

It's more energetic, spiritual lifting. But I actually go into some of this. The new book I have that's coming out, I haven't even announced the title yet, comes out in 2025. I'm going into some of that because it's really important. The difference between mental exercise and physical exercise is not as big as people think, and the book is not about ketones, but I just know any way you can have ketones, if you're on a spiritual consciousness awareness path, it will progress faster if you do it. And like I said, there's a freeway, there's a cheap way, and now you have a very affordable way that isn't \$30 a dose and choking it down. So I'm pretty excited about this in general. And I have some more questions for you. Yeah, this is from Todd in the upgrade collective. He wants to know, are there any sort of like, what the heck? Why is my body doing that? Effects that people experience from ketone Ikea or just from the ketone dial, which is the chemical name for it? Do people notice something weird?

Michael Brandt ([00:48:06](#)):

I wouldn't say weird. I would say your body has the infrastructure to make and use ketones. You always have some level of ketones present. This isn't some outside foreign substance. Your body's making ketones all the time and using ketones all the time in different degrees. And especially if you are a metabolically flexible person, if you do some fasting, if you do some low carb dieting, if you exercise, then your body's going to definitely be used to making and using ketones. And so it's not this alien thing, oh my god, shock to the system. I mean, in that sense, caffeine is more alien to the system in the sense that it's an outside substance. Your body's very used to making and using ketones. Now, have you had that feeling of quickly ramping to one millimole plus of blood ketones, getting that spot that it would normally take a day or two of fasting to get to that is novel. So you might feel a little bit of a lift like you're in the elevator and it's kind of feeling that push up, but the feeling itself, it's going to feel very similar to that clarity that you feel when you're on in a good state on a fast, where you just feel very dialed and clear and in the zone, you're just going to get there very quickly and you're going to be like, wow, that was interesting. Got there in 15 minutes.

Dave Asprey ([00:49:24](#)):

I sometimes forget how scary fasting used to be. And so back in 2008 before I started the, I wrote that first definition hacking started the whole bulletproof thing and all that, I realized that I was afraid of being hungry. It's because I'd been tossed since I was a kid. If you don't eat six meals a day, you'll go into

starvation mode, which is total nonsense. And then I also knew that if I was lonely, I would eat. And so I hired a shaman, drop me off in a cave, and I spent four days with no food and no people like, well, I can't cheat. Even if I just lose my mind, at least I won't get hypo gly bitchy. And that was the basis of my this way book about the psychology and biology of fasting. But that experience after four days, I could not believe how good I felt.

[\(00:50:17\):](#)

It didn't even make sense. So at the end of this, the shaman texted me, and your phone is off the whole time, but once and every morning you turn it on just to, I'm not dead, kind of a thing. And the shaman's laughing going, I know you're not dead. I'm watching you with my remote powers. I'm like, okay, whatever. But actually she was so, she says, I'll meet you at your cave. I said, it's okay. I'll walk to the trailhead. I just feel so good. So I throw my sleeping bag and half a bottle of water is all that's left in my backpack. And I'm like, I'll just go walking. I climbed the wrong mountain after four days when I, anything. And I felt so good, Ben, than I felt in years. I literally get up there and go, I'm completely fricking lost. It's four in the afternoon in the desert, and I have no water.

[\(00:50:57\):](#)

I grew up and just like this could be bad, but I was just so happy. I had one bar of battery and one bar of signal. I'm like, I'll beat you somewhere. So I ended up walking probably 10 or 15 miles on new food after four days, not dehydrated, because guess what? When you burn ketones, what does it make as a byproduct? Water. It hydrates your body. And I just was like, I'm on fire. I wouldn't feel like this more often. And it was soon after that that I was really dialing in that first ability to turn on ketosis at Will with just MCTs, which is again, that's 0.5, and you're getting me up to 1.5 with Ketone iq. So that sensation, for the first time of fasting, I was so scared I had to be in a cave by myself to do it. And it is one of the reasons I wrote this psychology book.

[\(00:51:42\):](#)

A lot of people now are not so intimidated by fasting, but if you're listening, go, I've never thought I could do it. Just try this. Say tomorrow, I'm not going to eat. I'm going to wake up. I'll do a shot of Ketone iq. If I feel like I'm going to die, I'll do another one and have some water with electrolytes or salt in it. And the whole day, you just wouldn't even think about food. And that night before bed, you go, oh my God, I didn't eat. You'll go to sleep and you'll wake up and go, I just fasted for 24 hours for the first time in my life and I didn't die. Then all the fear goes away. You feel so different. It's a beautiful thing. And that sense of energy, I dunno how to put words to it other than what I just did, but you know what it's like because you've done it for years. But a lot of listeners haven't gotten there yet. And it's a big deal.

Michael Brandt [\(00:52:22\):](#)

It's a big deal. It's a big breakthrough on a personal level, just seeing your own transformation through that, it's a big confidence builder. Obviously it's good to exercise that specific capacity, being able to fast and then also just knowing that, hey, you're doing things that most people, 95, 90 9% of people are not going to do. They're never going to punch through that wall, they're never going to do, it's going to sound crazy to a lot of friends and relatives and your parents, significant others, all that until you get them on board with you. But that feeling of knowing that you can do something very outside of the norm of what a lot of people are doing in their everyday life, I find it just very confidence building because we should have that attitude on all sorts of things around our diet, but also around the news that we input into our brains and the career choice that we take. And obviously there's a whole rabbit hole here, but that ability to break out of the shackles of oh six meals a day, you must eat it. Don't slow down your metabolism and go to starvation. But breaking out of the unproductive constraints of the

common path or common knowledge that's just wrong or just maybe misinformed is a nice way to put it. It's a superpower to be able to bring that into the other arenas of your life as well.

Dave Asprey ([00:53:38](#)):

It is. Alright, let's talk Olympics. Are Olympic athletes allowed to use Ketone iq?

Michael Brandt ([00:53:46](#)):

Yeah, we actually had a number of athletes using it, including the guy named who won the 1500. It's basically the closest thing the Olympics has to the mile team. USA won that specifically this guy Cole Hawker, and he's been partner with us for some time and a number of other Olympians. And obviously at that level you're fighting for every percent, every fraction of a percent. And your metabolic demands are insane, the race. But I think just so people know, if you're training at that level, you're training to run a mile. You're running many, many, many, many miles. You're running a hundred miles a week to be at that level of fitness, to be able to run one mile at the world champion level of performance. And so there's a lot of metabolic demand just in your training leading up to that. And so this is the first Olympics that we've really been standing on two feet with a fully commercialized product and all that.

([00:54:44](#)):

And it's just been super cool cheering for some of our athletes coming over the finish line and meddling and a lot more to come there. And we also worked with the Tour to France team called, they're called Team Vima. They won two of the last three tours of France. And I actually got to go out there this year for a couple of the stages and it is been very cool to see people who are pushing their body to these kinds of limits and really proving out a lot of what we're talking about that works in anyone's body, but seeing it at the fringes, you really see how your metabolism works and how for us, how ketone IQ as a tool helps and those extreme, these are just super athletes, it's really cool. It gets me fired up and I started the company, I'm already fired up. These people fire me up.

Dave Asprey ([00:55:32](#)):

Does that seem fair to you? I mean, some athletes have access to keep count iq and some of them the losers don't. It

Michael Brandt ([00:55:39](#)):

Seems fair to me because there's always this leapfrogging of technology and what's available, right? If someone, the next lane over might have a unique blend of carbohydrates that it's multi dextrin and fructose and glucose in a specific blend that for them gets metabolized quicker. Someone else might have a personalized electrolyte mixture that matches to their exact sweat portfolio and not even someone, the next lane over might have a special shoe that Nike custom molded to their feet. We're always making these upgrades to human performance. The difference where things get crazy is like, okay, you have these federating bodies like world Anti-Doping Agency, which to be clear, we're fully on the white side. We're fully WA compliant. What these governing bodies consider bad is when you're doing something to improve performance, but at the cost of your longevity. So if I don't,

Dave Asprey ([00:56:33](#)):

Don't make excuses for Wata, why does a bunch of Luddites, they literally just come in and say, you can do this, you can do that. And it's not about the health of the athletes. If it was about the health of the athletes, middle aged men and women would be allowed to use bioidentical testosterone and other

hormones to stay young. They actually caused these athletes to age more quickly and to not be able to recover by restricting access to technologies of biohacking. So what I do, if I'm looking for a new biohack to see what works, I go straight to the WADA list of banned substances and that's where all the gold is. That's so good. Literally half the biohacks that everybody uses except pro athletes are the ones banned by these people who hate humans. So I am a fan of the Olympics, but mostly because in the pistol shooting thing, you got the guy from Turkey who just walks up and takes a shot, and then you got the guy from South Korea with special optics, all this cool tech who won gold.

[\(00:57:29\)](#):

But I'm like, let's just take the gloves off, tell us what you're doing so we can all learn from it and don't harm yourself. So the deal is you have to share but that you're free because let's face it, every Olympic sport you might get injured. So if the goal was safety, we should ban the Olympics. So clearly they're choosing danger, see what I did there? But they're choosing danger under this artificial set of rules. So I am sad that you're WADA compliant because it's a sign that your stuff might not work, but I know it works. So there we go.

Michael Brandt [\(00:57:59\)](#):

Yeah, I mean, look, protein powder is water compliant. MCT is water compliant. I know tongue in cheek comment that drinking water on the sidelines is water compliant. But that is a very interesting take, provocative take for sure that a lot of taking testosterone in your middle age probably is going to help your overall longevity and health span. And to be against that under the guise of that you're helping health outcomes doesn't exactly line up. That is a very prerogative point. I mean, what they're trying to avoid, I'm not here to stand for water or anything. What they're trying to go against is your doping blood, young blood or something that's going to help you perform better. But you're going to end up with blood clots like 20% chance you have a heart attack overnight. They're trying to remove the perverse incentive to do something performance enhancing. But that comes at this cost. I think you're correct in raising a lot of objections to how well they're actually embodying that or is that even consistent or hypocritical that the games themselves are just,

Dave Asprey [\(00:59:07\)](#):

It's a bit of a thought experiment, but I mean, let's talk about marathons. The number of marathon runners who have permanent cardiac damage from chronic cardio. It's not trivial.

Michael Brandt [\(00:59:18\)](#):

Yeah, yeah. You don't want to overdo it for sure. I mean, it's this balance because VO two max is one of the largest indicators of overall health span. Your body's ability to use oxygen, it just correlates with a lot of other things, correlates with cardiovascular health. If you have more muscle mass, then you'll be more adapt that turning oxygen into usable cellular energy. So VO two max, I think doctors should measure your VO two max. I think it's silly that you just sit still and they measure some seeded blood biomarkers. I think they should measure more measures of physiology. And if I was to pick one, I would say VO two max. But there is that line of too much of a good thing. If you exercise too hard and you can overdo it, you can stress out your heart.

Dave Asprey [\(01:00:04\)](#):

Like the Peter Atia effect of all you have to do to live forever is just exercise for two hours a day. I'm like, I don't think that's what it takes. He doesn't say You can live forever.

Michael Brandt ([01:00:12](#)):

Yeah, there's a way to do it that is, you can do it without overdoing it. But I do think exercise, it's the good old thing that works really well if you could. It's

Dave Asprey ([01:00:24](#)):

The right dose

Michael Brandt ([01:00:25](#)):

And the right dose.

Dave Asprey ([01:00:26](#)):

And to be really clear, if you are metabolically healthy or if you're running ketones and glucose at the same time, you can handle more exercise without damaging the body that works. And so I totally support that. I kind of laugh when WADA, who clearly supports sports that are dangerous like skiing, and they say, well, we can't do anything dangerous. I'm like, hypocrite. So that leads us to the PED Olympics or the enhanced games for 2025. What do you think about that?

Michael Brandt ([01:00:58](#)):

Yeah, yeah. I saw you making that prediction. I think it's interesting that there could be a PED Olympics. I think about things like, okay, what if there was actually World War III? I want all the PEDs, or what if we're actually trying to go to Mars? Someone's got to survive on a spaceship for decades. If that's me or someone, I want all the PEDs for that person as well. There is a case to be made for these contexts where you actually just want the best absolute human performance out of it. And it would be interesting to see that short of we don't want World War III to happen, and short of people going to space and really having to PED their way to Mars. It could be interesting to see an Olympics games where people are, hey, no holds barred and anything goes. And let's see. Let's see how hard you can take it. And I think that'd be very interesting. I think that would get a lot of viewership. It might get more popular than the actual Olympics.

Dave Asprey ([01:01:53](#)):

Well, it is happening. So the first one is in 2025. Peter Thiel is a backer of it from what I understand. And Peter's an interesting guy. Way back in the early days of Bulletproof, he was the first guy to offer to fund it. He said, Dave, if you'll build a bulletproof coffee shop near my office or my home, I'll write you a check for half a million dollars. And I said, Peter, there's no foot traffic near your home or your office. A coffee shop would die. There he goes, yeah, that's a good point. So he never invested, but I was impressed with that one meeting and just he's sort of like, all right, let's allow some freedom here. So I'm a fan of it, and I will tell you that everyone in the enhanced games, I'll bet you will be on Ketone IQ because if you just look at the data, this is what you can do.

([01:02:41](#)):

And I think we're going to see some incredible barriers that we thought were real barriers, just completely smashed. And when we get to things like the space program, got a chance to ask the president of SpaceX. I'm like, you've done a lot to harden computer chips and spacecraft for space. What are you doing to harden astronauts? And she looked at me and she goes, in 17 years, no one's ever asked that we're not, well, I'm pretty sure that if we're going to make it to Mars, it's not as much about

the spaceship as it is about the people in the spaceship getting there and still being functional. And that's going to take some serious work.

Michael Brandt ([01:03:19](#)):

That's so cool. I mean, we just submitted a grant application for the International Space Station lab to look at some of these factors because when you're in space, I mean, it's a more magnified version of what you see when you're flying. Right? When you're flying, there's less atmosphere protecting you. You're exposed to more oxidative stress. And when you're outside of the Earth's atmosphere, when you're in literal space, there's a lot of cosmic radiation that you are exposed to. And if you can be eating, drinking, consuming a diet, including ketone IQ that cleans up reactive oxygen species, that reduces oxidative stress. It's like you have to do that. To me, it's not even like, oh, that would be a good idea. I have the same attitude in the NFL. It's like, yo, if all your employees of the NFL are getting a concussion as a normal line of business, that's the job requirement. It's a dereliction of moral responsibility to not have them drinking ketone iq. And the same thing with space. You're going to send people to space, and you're not going to give them everything within control to reduce the damage of space travel. When you put it that way, it is crazy. Yeah, we're hardening all the space ships and all that harden the people too.

Dave Asprey ([01:04:39](#)):

Dr. Veatch, the guy who studied with Hans Krebs, the guy who figured out the citric acid Krebs cycle for mitochondria. In that last interview with me, he said that he thought ketone enhancement was critically important for humans going to space because of ionizing radiation and its effect on mitochondrial DNA and it causes mutations in it. And mitochondrial DNA mutations are linked to cancer and all sorts of bad things, and you get a lot of that when you fly. So I mentioned at the beginning of the interview, I use Ketone IQ when I fly because I'm planning to live to at least 180 and like my life. And that means that when I'm doing things that increase my exposure that I want to have ketones present in the body. So I would say if I was an astronaut, I would be insisting on this stuff instead of astronaut ice cream or whatever nonsense they're trying to feed them.

Michael Brandt ([01:05:27](#)):

I completely agree.

Dave Asprey ([01:05:29](#)):

What else should people know about ketones that they don't know?

Michael Brandt ([01:05:32](#)):

We're doing some stuff at the edge with some of our pro athletes. We have a study going on in Europe and Belgium at KU Luin looking at just some specific biomarkers for athletes where ketones help with EPO production. EPO is what your red blood cells need in order to carry more oxygen to your cells. So ketones have these signaling effects above and beyond just the fact that they're a source of fuel. They have these signaling effects that help trigger other positive responses in your body. Stimulating natural EPO production is super interesting. EPO is one of those things that that's actually just squarely on that list. If you were looking at the wata list, EPO seems like it's really good for you and it's so good for you that WADA has decided to ban it. So this is why people do altitude training. One of the big benefits that you get when you train at altitude, which is seen as the best thing you could do as an athlete, you go to Boulder, Colorado, whatever you train at altitude, guess what's going on? You're making more EPO.

You're inducing your body to make more of this substance that is really good for you, but it's illegal to take directly anyway. Yeah, only

Dave Asprey ([01:06:40](#)):

Rich athletes who can afford to go do that, get that kind of EPO, but the rest of us who could inject it for 20 bucks a month or whatever it costs, we can't do that because of bureaucrats said no. I don't know if that's fair, but here's the hack for all these pro-athletes who don't want to violate any wider rules. There is an amazing substance called xenon gas. It's one of the noble gases, xe, NON, and it is the best surgical anesthetic you'll ever find. Problem is it's three times more expensive than the crap they use that poisons your mitochondria. So most doctors don't use it. It's not available, but you can get xenon and at the right doses, by the way, if you breathe pure xenon for several breaths, you probably will die. So don't do that. But when you're getting the right mix of oxygen and xenon, not only do you trip balls, it radically upregulates your own production in A BPO.

([01:07:30](#)):

So if you wanted to turn up BPO without an oxygen tent and all that stuff, you could take a couple healths of xenon gas. And since you just talked about it, you could probably have some ketone IQ present. No, I've never tried this, but it stands to reason that you might have more red blood cells to be able to deliver oxygen more effectively if you just had the right natural gases from the atmosphere. Just highly concentrated. And you had some ketones that you didn't have to fast for three days to get. So there's all kinds of, it's a substrate for biohacking, and I'm pretty stoked on it, guys. It's [ketone.com/dave](#). They'll give you 30% off. And Michael, I got one final question for you in our interview. If you could be as healthy or healthier as you are right now, how long would you want to live

Michael Brandt ([01:08:15](#)):

Forever? There's no upper limit. No. Life is amazing. It's exciting. We're living in a movie here. If I could be this healthy forever, why would I ever want it to end?

Dave Asprey ([01:08:27](#)):

Yeah, it's funny. I am with you there. I would only want to quit if I was done, if I'm bored and I can't find anything else worth doing. But so many people say, oh, I would never want to do that. I only want to live to 87. And you get some people who are like, well, there's no scientific evidence we could extend human life. I just wrote a book that had 20 different substances that extend human lifespan in different studies. So I think there's some evidence, but there's people who say they're naysayers. Some people who say, I don't want to, and I'm not surprised just given your kind of visionary tech perspective, like, well, why would I not want to do that? Right. So when you're done, you're done. But I like your perspective on that and I share it. So I'll live forever unless I decide not to.

Michael Brandt ([01:09:10](#)):

Yeah, I think it's a fun dance. We're here with all these other humans. It's good to be alive. Once you die, you don't come back in the same form again. So yeah, I don't want the dance to end. I mean, I think most likely case will not live forever. So I am comfortable with inevitability of death and all that. Yeah, I'm not in a hurry to die either.

Dave Asprey ([01:09:38](#)):

Yeah. I've been in the longevity field for 25 years, and I remember James Clements, who's been on the show and just one of these true believer, long-term longevity advocates. The guy who flew around the world and gathered DNA from Supercentenarians to give to George Church to find out the genetic, this is just a great human being. He's been on the show years ago, and when I first met him in Florida 20 something years ago, I said, no, it's inevitable. We're going to die. And he actually got mad at me and he goes, what do you mean? I go, look, man, the universe will eventually collapse in on itself. It's alright. You have to be comfortable with this fact. You're going to die, but you don't want to have a crappy biology before you die and you want to die way, way, way later. But if you're just resisting that and saying, I'm never going to die, you might be drinking your own. And so I'm like, let's not do it at any planned time in the foreseeable future. Seems good enough for me.

Michael Brandt ([01:10:33](#)):

Yeah, well said.

Dave Asprey ([01:10:35](#)):

Michael. Thanks for all the innovation you're doing, and thanks for cutting the cost of this to make this so it's reasonably affordable to use even a couple times a week for a lot of people for those high performance times or for travel and whatever. I think it's a meaningful innovation in the biohacking space. So again, guys [ketone.com/dave](#) save 30%, and you are very likely to see Michael at the business of Biohacking conference. Go to [business of biohacking.com](#). I will teach you, if you're a biohacking entrepreneur, I'll teach you and I bring in all the experts who taught me how to grow a hundred million dollar company from scratch. That is a very rare thing. There's only 17,000, a hundred million dollars plus companies public or private in the us. So if you want the cheat codes for that business of [biohacking.com](#), I'd love to teach you. I will see you all on the next episode. If you've liked this, I love it when you share it. I love comments on YouTube. Make sure you're subscribing to the channel on Apple or Spotify or wherever it is you consume the podcast. I appreciate your time, your attention, your listenership, and I do my best to make these entertaining, but more important to make it way more than worth the hour we just spent together. See you soon. You are listening to The Human Upgrade with Dave Asprey.