Introduction to Dave Asprey and Biohacking

So we have with us today the godfather, the guru, the pioneer of biohacking. In fact, that word today, you know it because of this man. You know, if you went back five, six years ago, what does that even mean?

That would have been the answer. The reason, you know, what it means is because of Dave's advocacy and saying that, you know, you can take control. You can take charge if you understand how this thing works, that we all walk around and there's a lot more going on than what people do, I think. Right.

And that's been Dave's mission. He's brought it to us. And what we're going to do today is hack to the sort of deepest level we can and try to understand the building, block the cell.

Where does it all start? And, you know, I've I've listened to Dave speak before. The things that he said mind blowing us as a biotech company that studying DNA.

You know what? Where it all starts. And we're cellular instruction starts. I'm hearing things from him that I've never heard before from the science team, and it's blowing our mind.

So we have to share this with you. Dave, first of all, thanks for joining us. It's awesome for you to be here. Cash. I'm always happy to support the work you're doing out there.

I'm a big fan of the DNA company and just all the stuff you're working on, so it's my pleasure to be here to help. Thanks, man. That's awesome. So we, you know, when we talk about that, that building block, you know, literally break it right down to the cell.

The thing that we're starting to hear now, I'm sure you probably been hearing it or talking about it for years, but to the general public, where it's all about mitochondria, mitochondria, what's going on at the cellular level?

We've been doing this for some time in terms of oxidative stress. And you know what is leading to that? Inflammatory insult and inflammation being the root cause of disease.

And clinicians agreeing with that, but then not understanding why does the inflammation happen. They don't dig past. This is the source of the disease.

But let's just deal with the disease right? So you, on the other hand, have gone way, way past that. The onions been sort of unpeeled right down to the core.

And you understand from the so much more than we've, you know, sort of other science literature level, what we talk about, what is it at the bottom that the mitochondria level that we're not understanding that we haven't talked about? Yeah.

What's that new information that everyone needs to eat. Think about the definition of biohacking. It's the art and science of changing the environment around you and inside of you, so that you have full control of your own biology.

And it's like, oh, wait, you mean there's such a thing as epigenetics, which is flipping the switches on and off in your DNA? Yeah, there is, but you can only flip a switch that is present.

And what does the flipping of the switch, in my first book, which was on fertility, that came out in 2011, and it was, you know, how my wife and I had two kids, above age 40, without IVF, even though she was infertile, before we changed the environment to encourage fertility.

Mitochondria as the Cellu2019s Environmental Sensor

I wrote about what Bruce Lipton calls a regulatory protein sleeve, which is a way of envisioning, like a firewall around your DNA that gets read by RNA so you can replicate, make a protein.

You can basically follow the instructions that are written in the DNA. The problem we have, though is what's reading the environment? What's the sensor for the environment around you?

It's not your eyes, it's not your brain. It's actually inside the cell. It's the mitochondria. Because mitochondria. Most people have heard of these in seventh grade biology.

They're the power plant of the cell. But that's kind of nonsense. They are the environmental sensor of the cell. And there's anywhere from a few hundred, up to 15,000 mitochondria, depending on whether it's a heart cell or a brain cell, which have tons of these factories in them, whether it's maybe a skin cell with a couple hundred.

But what the mitochondria do is they sense the environment and then they decide what to do. They can make energy, they can make inflammation, they can make hormones.

They can decide to suicide themselves. If they're weak, they can decide to make new mitochondria. And they are in charge. They're ancient bacteria that we collaborated with and subsumed 2 billion years ago in the ocean some time.

But they're still in charge because they see the environment, they decide what to do. And when trillions of cells in your body decide what to do, you get cancer.

You get abundantly good health, you get willpower, you get love, you get hate. All of this rolls up from these things. They're an extension of your brain, an extension of you into the world around you.

So the connection between mitochondria and inflammation is that if the mitochondria are stressed or they're getting the wrong things, or they're weak or they're poisoned, or you don't have genes that code for a certain protein that makes mitochondria do something well, you can account for that by changing your environment.

But if you don't know that your mitochondria get to go about their business and over time they get weaker and weaker, which means the four pillars of aging from anti-aging.

But it means that, sorry, these are the four big killers that keep you from getting old. These would be diabetes, cancer, cardiovascular disease, and Alzheimer's.

And if you can avoid those four things, which are all mitochondrial conditions, then you can probably live a long time. So it's all connected together and it's all these ancient bacteria.

They're not just power plants, they're sensors and they're the epigenetic things that what's it smell like today? What is the system of the world around me?

How should this meat envelope react? That's what they do. So you you opened my eyes to this when you said this at the your last virtual conference. It wasn't your live conference that we were at.

And we mentioned the biohacking company, the biohacking conference. Yeah. And I was listening to you. I was like, wait a second, wait a second, PowerPoint.

What are you talking about? Right. Because this is how scientifically we look at the mitochondria. And when we look at the genetics of, you know, clearing oxidation and the sawtooth gene, which I know you're familiar with and the ability to, you know, get rid of that oxidative stress at the cellular level.

We didn't dive deeper in terms of, okay, what is this, thing. So simple example. You talked about the four big killers,

right. Cardiovascular being one of them.

We don't hear about why the why of Condra leads to that condition. You're saying that's the source. So what's that connection as an example for everybody with heart disease?

Yeah. Well, it turns out that inflammation is behind many, many of the things that make us old. Something called inflammation. In the case of heart disease.

Well, if your heart can't make enough energy to pump effectively, then you end up getting heart disease, if you will say, but what about the plaque in your arteries?

That's what causes heart disease. Know the plaque in your arteries is 98% composed of fats made by bad gut bacteria. This is provable in two different isotope studies.

Everything they told you about eating eggs causing heart disease is absolute nonsense. In fact, even the American Heart Association says I would. They said cholesterol is a nutrient of non concern.

So we were wrong when we told you that stuff. So we have all these beliefs we do and then we have actual science. And when we measure what's what do you have in your DNA that you're capable of.

And then we say, what are the inputs to your body to make the DNA do what's very best for you? You end up not getting heart disease, but inflammation is at the root of it.

Because if the cells in your heart work well, they take 30 pounds of air and some kind of energy substrate like fat or protein or carbs. And it takes those, it combines them with the air and it makes electrons.

And if it does that really well, you have a healthy cardiovascular system, and if it does it very poorly, it pumps out inflammation. And when it pumps out inflammation, it's the electron goes either into energy or it goes somewhere else.

When it goes somewhere else, it's a free electron. It's oxidative stress. And then if your mitochondria are working well they recognize the oxidative stress.

They make antioxidant onboard things like things like glue with iron. Those things capture the free electrons. And then you don't have inflammation. But when that doesn't work well because you have more leaking electrons, then you should.

Then you start down that path of inflammation, which inevitably leads to that trifecta of things that oftentimes run together. Diabetes usually precedes heart disease, by the way, because your body started to suck at taking sugar and air and making energy.

And because of that, it's the amount of suckage equals the amount of inflammation. Yeah. And the funny thing is, just like I think it was three days ago, a friend sent me an article from Harvard saying, eat three eggs a week, you know, so it was a scientific study that was saying, you know, that whole debate over, you know, whether the cholesterol in the egg is going to cause you a heart disease problem.

So we'll just limited to three eggs and you got no problem. That was the answer. So you know, and that was a Harvard publication. So it's really funny too because if you have and a type of gut bacteria called a TMA.

Inflammation, Heart Disease, and Gut Bacteria

Oh, former or GMO forming gut bacteria, if you give them animal protein, if you give them fish in particular, and eggs are particularly bad or any plant based substance called lecithin, you give them any of those things.

It's going to make stuff that's bad for your cardiovascular system, but you could take the same person who doesn't

have those bad bacteria, and they can eat all of those substances without creating this risk factor for heart disease.

This is why the animal rights activists will tell you you should never eat meat. Because tomorrow, even though something like 40% of people don't have that bacteria, and what's going to give you that risk?

Eating industrial meat that's full of antibiotic residues. So balance your gut bacteria. That works. And it works in part because ancient mitochondria are bacteria embedded in our cells.

But they still run a bacterial operating system. They still communicate the way bacteria do in a petri dish or in yogurt, or in any other kind of ferment where you're forming a biofilm.

They talk to each other and they talk to the bacteria in your gut. So there is crosstalk, there's chemical crosstalk, and there's probably light based crosstalk with photons between what's happening with your gut bacteria and your mitochondria.

So they're chatting to each other going, hey, what's the world like out there? Like, are you a friend or foe? Right? Yeah. Which we spoke about via photons a couple of weeks ago.

And that, that instantaneous communication, like you tap yourself here, every cell in your body knows what's going on right. And that's so what you're saying is that the mitochondria as part of that communication flow with that flow chart.

If you see here's what my body talked to from one end to the other, it's way beyond the energy production. It's tap mitochondria and sends a message. You go, what do I do about this. What's the next step?

That's probably not bio photon based. That kind of communication. That's probably electricity based. Right. So it's interesting. We can talk with electricity.

We can talk with magnetic fields. There's some evidence that our brain and our heart are doing that independent of, electrons flowing over nerves. We can talk information over our fascia.

Independent of our nerves are connective tissue. Collagen rich tissues communicate information. And there are other signaling methods like inflammatory cytokines made by mitochondria when they're in a state of stress.

And then mitochondria also have a language for talking to each other, to vote, to decide what they should do. As a group. The same way, actually, that thing like in cryptocurrency.

How do you decide whether enough things have voted for the blockchain to be reliable? It's probably the same algorithm that the body uses. In fact, I was an advisor to one of the crypto companies, that uses that same algorithm.

So our bodies are very smart when you have trillions of these ancient, you're saying, how do we talk? And sometimes they'll make photons, but we know our gut bacteria make about 400 times more bio photons than our mitochondria normally do, but they are light sensitive. In fact, you can use light to hack them.

One of my companies does that called ultra light. So since mitochondria read light and they use light to tell themselves what to do, they also use light to talk to each other.

It's just not the primary way of communicating. So the reason the body is very hard to hack is that we don't understand which communication is made via electricity, via chemistry, or via light, or maybe via magnetic fields, and possibly be a vibration.

So these are all happening all simultaneously, kind of like you and me right now. You wouldn't know it. But part of this is going over a copper wire, and part of this is going over fiber optics and unlikely, but maybe there's some wireless in there.

So depending on all of that, we would never know. But if there was a problem with wireless and it screwed this up, like why is it not working? It's because of things like that inside the body that makes sense.

And then so all of what you're saying, you know, there's some people listening that have heard bits and pieces of this before and they're saying you're making a lot more clear.

There's some people for whom this is completely new, like, how do I know this is real? Where's this all coming from? You know, and that's kind of the questions we get when we speak genetically.

We can point to published literature. We we just interpreted better. What you're talking about is research beyond, you know what, you can't go to your doctor and hear this.

Well, cause I'll be real honest, way back in the day, in the 90s, I was, I played a small part in the team at a company called Double Twist. That held there was a whole floor of a data center, and that was how much compute, power and storage it took to calculate the first human genome.

Back when we were getting Craig Venter's $100 million effort to just sequence his own genome. It was a groundbreaking change the world stuff. So I looked at that and said, this is not going to be very useful.

It's amazing. Like like going to the moon. Amazing. But in terms of regular humans, I'm not sure it's going to crack the code for all of us. And then you fast forward ten years and you could get your genome done for 5 or 10 grand.

And I did is probably one of the first, you know, whatever, first few thousand people to do it. And what did I learn? I learned that I have a Neanderthal gene for less back hair, and it changed my life to know that I had less back hair than most people.

Right? It turns out I was. I became very disillusioned with genetic testing because most of it was you have a 10% higher risk of Alzheimer's. So I'm like, well, that's funny because my risk of Alzheimer's is already vanishingly low because I know how to eat.

Yeah. So because of that, like, you know, or, you know, 1% less risk of something that you have a tiny percentage of risk for. Like if there was something that 99 point something percent of people survived, your risk is low whether or not you cut your risk in half because it was already low. Right.

So you could, you know, maybe roll out something globally to reduce risk of something that wasn't a high enough risk to be worth it. And there are some things, like approaches to cancer where people thought about that because they're kind of losing their minds over relative risk.

And that's why genetic testing was kind of useless. And then you came along with a DNA company and did the functional genomics thing and said, okay, if you have these genes, it doesn't matter how hard you push the accelerator, you don't have the equipment to do that.

Like you may be a dump truck, not an F1 car. So you should fuel yourself and treat yourself like a dump truck. And what comes out of this is that your body has an energy blueprint defined by your mitochondrial DNA.

This came from your mother's lineage. Your mitochondria don't change much over time. There's a book called The Seven Daughters of Eve, or nine daughters of.

I forget how many, but it's either 7 or 9. Women are pretty much the ancestors of all of us from our mitochondrial DNA, and it's just separate from our nuclear DNA, which is what you typically look at.

And the nuclear DNA is sort of like the building plans for a house, but the mitochondrial DNA is the wiring plans for a house. And so if you have wiring that looks like this and you have physical walls look like this, let's hope that you're not I don't know, you don't have the wiring everywhere. Refrigeration plant. Right.

And a small condo worth of physical walls. So what you're doing though is saying, here's your layout, here's what's possible with your DNA. And then we look at your mitochondrial system and say, how do we make it?

So it makes enough energy to power the structure of you.

Functional Genomics and Personalized Health

And they're just different things. So you I think, brought that together. So now I know what to do lifestyle wise based on my DNA. And also half the advice it's for people that don't have my DNA.

So it's bad advice for me. So customizing it, that's where it happens. And I'm really excited about functional genomics because it provides the bridge between the mitochondrial reception of the world around us and energy production.

And then what we do with the DNA, because if there's a break in that communication or we do the wrong thing, well, our DNA is not going to behave right.

And when the DNA doesn't behave right, guess you get stressed. The mitochondria and they get stressed inflammatory cytokines. And all of a sudden you're moving in the direction of diabetes, cancer, heart disease and Alzheimer's.

But if we do the right stuff for our DNA, it keeps our mitochondria happy. And that's where this happy medium comes. There is there is no chicken or egg here.

We have to balance the DNA of what's capable and what will happen. You put this in the DNA means you can only do A or B and if you want and C it's not on the menu.

But for your neighbor CNB might be on the menu, but not a. So you guys have done a lot of data work there. That has me actually now a fan of genetic testing when I wouldn't have been ten years ago.

Yeah, you remind me of the early days work when we were still learning and we knew where we were going. It hadn't been vetted out, meaning enough evidence.

We hadn't seen it enough times where we started to say, well, this is this is getting pretty real. No. Right. And in those days, we had actually approached a doctor's group, to invest with us and said, hey, we need funding.

We're doing research, and it's not cheap. You know, we're we're studying a lot of people, right? It's a lot of science, sort of bandwidth. And they said, well, this is all, you know, hocus pocus.

It's smoke and mirrors. Genetics doesn't work, is not actionable unless you're diagnosing a rare condition. Can't do much with it. And so we literally our due diligence was of you guys that are here who sick.

And there was a guy that had a cholesterol problem. Right. He was 38 years old and had an ongoing cholesterol increase that it just kept going. And he was on Lipitor wasn't really helping much.

For the most part. It does help people for whom it didn't work. As we said, work with us, give us a few weeks. We're going to work with you. We actually reversed his cholesterol and it was rooted in mitochondrial health.

Right. So this this man doesn't take Lipitor anymore. He no longer takes a pill. So it came down to exactly what you said, that the ability of his mitochondria, which we can determine genetically, you know, the ability for it to clear that oxidation, for it to stay healthy.

Right. Wasn't there for him. Then you look at, okay, now that we know that there's these oxidants in the blood and that your it's going to lead to that inflammatory insult that you're talking about, how well do you deal with that?

He was missing some of the key detox genes that sort of like you mentioned, saw glutathione and all that. He wasn't doing well. So now all of a sudden, that inflammatory load is so much more aggressive.

Then we looked at his environment, nutrition, lifestyle, one of the things he was doing those inputs. So there's one thing capacity. Like you said, what are you, a truck?

Are you a race car? Right. So he was a bit of a dump truck. And then all of a sudden his load was just horrible. And so he was sick. And that thing that was being treated, that was being masked was his body screaming to him that you've been doing something wrong for years, and now I can't take it anymore.

And I poking my head out, saying, I, I have cholesterol here, but there's layers before that in terms of what caused it. Right. And it was rooted in the mitochondria.

That's that's how we healed him. He has not taken a pill since this has been two and a half years ago. Right. It it's amazing how much can happen. What inspired me to get started to make the biohacking movement?

I used to weigh 300 pounds. And if you can tell in the video I'm around 1,112% body fat. The New York Times as I'm almost muscular. So there's plenty of guys who are more ripped than me.

But, as a 49 year old chronologically in about a 44, 45 year old biologically, and now there's I'm younger in my cells than I am in my actual physical age, because this anti-aging works.

But with all of that and this terrible background of inflammation and prediabetes and high risk of stroke and heart attack all before I was 30, even the cognitive dysfunction stuff a lot of it was rooted in my mitochondria.

But when I started doing this research and trying to hack myself, mitochondria and even neuroplasticity were not very commonly believed in as contributing factors.

But I just knew every time I improved mitochondrial function, doing some weird thing that had one study behind it, I felt better and I worked better. And that's why it's been at the root of my anti-aging work and at my energy improvement work, even for perfectly healthy people.

And what I find, people have lost way more than 1 million pounds using my diet. I wrote a book called The Bulletproof Diet. And people can go too fast with Dave.

Or probably eat with dave.com and I'll tell you all about how to do stuff. But the point there is when people go on that diet, most people will lose weight, increase energy, and their HDL, their protective cholesterol goes up, their LDL may go up or down, doesn't really matter very much.

And their triglycerides, which are bad for you, go down. So the protective factor goes up. The bad stuff goes down. And the other thing that can be good or bad, depending on your genetics, can do whatever it does.

But there are some set of people and they either don't lose weight or they don't feel better. And I go, that's weird. And then you look at their genetics and you look at their mitochondria, just like you do with the DNA company, and you go, oh, that's funny.

This person has an MD for deficiency, which means the inflammatory marker called homocysteine or B high. Yes, I had that. I had to deal with it. This this person has leaky gut.

Oh. That's funny. Genetically, your, your study says. Hey, Dave, you have a problem with barrier proteins throughout your body. You probably have leaky arteries.

You probably have leaky gut. You have leaky lungs. And that's my genetic hand of cards that are delts. So that means I focus more on this. I also learned I made the highest 7% or 7% risk of cardiovascular disease, which means I look at markers like LPL two more often than I otherwise would.

Right? But that said, I am an abundantly healthy, powerful, strong guy and I am younger than most of my friends. Quantitate and energy wise. And that's awesome.

And it's not accidental. It's data driven, it's intentional. And yeah, it takes work. I have my company, the Upgrade Labs. We have all sorts of mitochondrial interventions where franchises going around the country because I think everyone deserves to know, oh, this is the least amount of effort and time, the least amount of supplements, the least amount of paying attention to food necessary for your genetics, for you to get the result that is your goal, and cash.

Maybe you don't want to live to at least 180 like I do. You know, maybe you just want to be, you know, even more of the smartest guy in the world, but that's your goal.

So you're going to tweak what you do. Genetic epigenetics, biohacking to give you what your goal is. And I think everyone listening to this conference, they all have different goals.

You want to be swole. You want to be fast. You want to be healthy. You want energy for your kids. It's all over the place and that's okay. But it all comes down to what switches you have and what power do you have to flip the switches?

You make the right decisions. You get abundant energy back. You get more willpower. And funny enough, when you have enough energy, at the end of the day for willpower, you're automatically nicer to other people, but it's the leftover extra energy that goes into regeneration and restoration.

And if you're low on energy all day long because your mitochondria suck, or because you do the wrong thing for your genetics, there's not enough energy left to fix the cells at the end of the day.

And the body says there was too much yesterday, didn't have enough energy. I am not fixing myself today. I'll do it later. And then you look at yourself when you're 65 years old and you can't walk, and you say, I wish I would have not done that later.

Yeah, okay.

Practical Biohacks: Fasting, Sleep, and Recovery

And I'm sure by now everyone's like now wandering on on their toes like, well, so what do I do? Like what's the next step? Of course, for those of you that have your genome and ham that have other personalization tools, have access to resources like they have books, you may know a little bit, but for the most part, this is new to people.

And unlike I know what's underneath you right now. I've been to your place in Victoria. You have your own biohacking lab, literally right below where you're sitting, where you can stimulate mitochondrial recovery and you can do all these things.

Upgrade labs is going to be rolling out sort of now, I would say North America wide, Canada and US, right. Canada and US, we're looking to have north of 100 locations over the next couple of years.

So we're doing a rapid rollout in, in countries all over the franchised model or in states all over via a franchise model. Yeah. So soon people will be able to do what you do for themselves.

Right? In terms of the what you've curated. But what does somebody do kind of today? What are those 2 or 3 hacks that they should be working on when it comes to regardless of you know, yourself on a personal level, here's some stuff you should start right away.

I look at every intervention you can do in terms of return on investment, but what you invest is not dollars. What you're investing is energy. So it's how much work is it to do it?

How much energy do you get back. So I want things that are low cost financially low effort to do. And if you can combines or in low time, you know it shouldn't take a lot of time if you can do those things.

Those are things that, you should focus on first because they just have such a good payback. The easiest one that I can possibly recommend is go to fast this way.com, and for free.

I don't want money. I will teach you like I've taught 75,000 other people how to do intermittent fasting. It's simple and it's easy and intermittent fasting is the highest ROI activity you can do in the world of biohacking, other than maybe sleep, because we're going to sleep anyway.

But you can also go to sleep with dave.com and I'll teach you how to do sleep more effectively in less time. The whole point around intermittent fasting, though, is that every morning you wake up, you spend some amount of time and some amount of money and some amount of energy making breakfast, and that sets your body up to want more food.

And all the energy that should have gone into thinking in the morning goes into breaking down food to make more energy for later, which means you're low energy, right? When you wanted to be high energy.

So then you want the donut and it puts you on a vicious cycle. So you save energy, money, and time in the morning by skipping breakfast. You have more energy all morning long because you have enough energy to go to your brain.

And then when you eat lunch and you eat dinner, you get plenty of good quality food and you do it again. So that is something that if you do it at the right time of day, you don't eat dinner too late.

It can. And it has reverse type two diabetes. For many people, that's a big deal. It doesn't cost anything. You don't have to come to upgrade labs. You don't have to do anything.

That's about between a minimum of 12 and 18 hours of fasting a day for at least three days a week is where the benefits start. And you can go more than that up to a certain point at which too much is not good for you.

And one thing I can say about that is that I. I have your book right, and I've been to the site you're talking about. I thought I was intermittent fasting, right.

I knew I wanted to do it and I knew how important it was. But there's nuances that people don't realize that are, you know, that really take you, that bind you on that threshold of, like you said, where you start to get the benefit skyrockets all of a sudden.

So I would have anyone that's listening if you're thinking, yeah, you got to go check because there's things you just not eating is not enough, you know.

What do you then need? When how much do you eat when there's a lot more to it. So people should go check that out. And that's one of those things that if you look at your DNA company report, it'll tell you how tolerant of hunger or stress you are, which may determine how long you want to fast.

And the reason that that the book that I wrote about fasting is called Fast this Way is that it's not the same for everyone. It's different for men and women.

And we have this unfortunate habit, and we all do it because we're people. If something is bad, you should do none of it. And if something is good, you should do more of it, right?

There's less like a general way of solving things. Here's the problem. You know, cortisol is bad for you, right? Well, except that if you have low cortisol, you get infections all the time.

You don't have enough blood pressure. You have higher risk of dementia and Alzheimer's disease. Well, what you

mean also hold on. Cortisol is good for me.

Then I want high cortisol all the time. Yes. Then you have cardiovascular. So there's a proper zone for these things. And that zone moves around. And cortisol is actually a signal to your mitochondria to what should we do.

Should we be in the aggressive state. Should we be in fight or flight, or should we be repairing the system right now? And based on that, mitochondria change what proteins they make.

They change what hormones they make. And the whole system shifts based on this. So if you think cortisol is good or cortisol is bad, or you think fasting is good or fasting is bad, you will break.

So what you want to do is learn the signs to be right in the perfect zone for your genetics and for the environment you live in right now. So if you're in a bad relationship, you're about to get fired.

You have to wear 16 masks and you haven't seen anyone smile at you in ten years. You might maybe take a little bit less fasting, but still do it sometimes, but not just push yourself over the limit.

So this is about kindness to yourself and your combination of your environment, your mitochondria, and your genetic DNA determines how much stress and what type of stress is going to be hermetic or beneficial for you, versus chronic or harmful for you.

And this is why I think functional genomic testing combined with mitochondria testing, combined with biome testing, combined with knowing your vitamin and mineral levels, all of these things, they add up and you end up going, wait a minute, I didn't know, but if I do more of this and less of this, I have twice as much energy and it stops hurting.

Whatever it is, that is where we're going. That's awesome. And I remember I was hurting when I first went to upgrade labs. I literally had broken my arm, on a squat rack.

Somebody whose body we saw somebody walk by in yoga pants and forgot to spot me. Your hands are dangerous, man. For years. Yeah. And I remember, getting onto your mitochondria recovery bed.

It was literally like this LED bed. And I felt it like I got up feeling different. Yeah. Yeah, it was incredible. So what? What's going on there when you're on that?

I think it's funny. Cash. I just had an elective surgery on my foot three weeks ago. A doctor went in and cut the bone in half that runs down the middle of the foot because I had an old yoga injury.

That didn't heal right. So they basically are putting more space in the joint, but there's a small screw in my foot. It was a major surgery with a four inch incision down to the bone, and I was awake for the entire procedure because I didn't want the mitochondrial effects of sedatives.

They mess you up usually for several days, and I don't need that. So we just did a local lidocaine in the foot. Couldn't feel anything. And I talked to the surgeon.

I only did it. I didn't watch it because he said that was a bad thing. But I heard the sore and it sounds like a dentistry I was supposed to go and it goes on and he goes, I'm having a hard time getting through the bone.

I have not seen bone density like this before. And afterwards he's like Dave, are you human? Because I operated on a patient 20 years younger than you.

And the sore goes right through their bone. But your bone is unlike what I see. Bone density is a sign of metabolic health, right? Why is my bone density like that?

Because of the interventions that upgrade labs. And because I've learned how to eat, and because I take my supplements and I also know how to sleep, I know how to do intermittent fasting, all of which contributed.

So for my healing, I stayed at the Beverly Hilton, where we have an upgrade labs where we took over the spa a couple years ago. So I went down and I did the red charger, which is, our red light in-house technology.

And this is something that uses red infrared and amber waves, inks very specific targeted wavelengths that can target a couple centimeters inside your skin.

And some of those wavelengths change the viscosity or the surface tension of water, so that your cells can more easily make ATP, which is part of making electrons.

And so that makes a huge difference. That was part of why you felt different. And some of the other frequencies, red light frequencies, they stimulate the mitochondria to make more of certain kinds of proteins, including more collagen, which is a matrix for your bone.

And you can get about 10% of the electrons your body uses from light. Believe it or not, most people don't know this. We are not plants, but you can actually use some electrons from sunlight or from red light, which actually adds electrons to the electron chain transport in the body.

Light, Cold, Heat, and Mitochondrial Support

So your mitochondria, they were getting a signal from the light that said here's some extra energy, make more energy, heal faster. And they were getting a signal from the other light that said, hey, I just transformed the water in the cells so that you can more easily move Mr.

Mitochondria. And the third signal that only true light has, which is the brand of bed at Upgrade Labs, is an amber frequency of light that talks to small blood vessels and tells them to grow faster.

So what you felt when you were on there was, I feel different. And this creates a wave of a signaling molecule called nitric oxide, which causes all the little capillaries throughout the body to open up.

Nitric oxide is famous because it's what Viagra raises when you take it. So if you want blood vessels to have more blood, you need nitric oxide. So it's an anti-aging molecule.

It's also a pro aging molecule if you use it wrong. So in my experience the red light beds increase nitric oxide in a good way. But some some beet supplements may overstimulate nitric oxide which is bad for mitochondria.

So they need some but not too much. And what about supplements. So you would recommend for the mitochondria. There's some I know there's a lot of guys I remember even at your conference, seeing some pretty awesome technology in terms of new supplement formulations.

Is there anything that's sort of good enough that you would recommend? You know, the number one mitochondrial supplement that I'm going to recommend is a very old plant medicine.

It's called coffee. Wow. I'm sorry. Or tea or chocolate. And it's because your mitochondria rely on polyphenols. These are the colored compounds in plants.

And the number one source of colored compounds in plants. In the US diet is by far coffee. So it's basically coffee, tea, chocolate and herbs and spices you need.

Those have functioning mitochondria. Those are way more important than eating the rainbow, half of which is probably pro-inflammatory anyway, depending on your unique biochemistry.

So not all plants that we think are healthy are healthy for all people. In fact, a lot of plants are better than starving, but not a healthy food, not by a long shot. Right?

And if you don't know genetically or from a gut bacteria perspective with including food allergies, you could be

shoveling something in your mouth every day that you think is a health food that tastes bad, like kale, and thinking you're doing yourself a favor but actually doing your self harm.

And this is an important part of that coming together of genetic information and gut bacteria information. If you're seeing systemic inflammation, what are you putting in your mouth?

What are you putting in your eyes in terms of light? And what are you putting on your skin in terms of skincare products? So those are major variables.

How are you breathing? Those are things that influence it and it matters greatly. Turns out lights one of those big things. And have you is there any sort of science on temperature.

Because there's a clinic that opened up here in Toronto that's really pushing sort of the ice baths? Yeah. Yeah. So I don't know if there's any science there in terms of specific for the mitochondria.

There's great science around mitochondria and heat and cold. And I've written about this since the very first posts in the biohacking world going back to 2010, 2011.

And it's been in all my books. The emerging data is that you need to do 57 minutes of heat exposure per week. Ideally in three sessions, and you need about 11 minutes of cold therapy, ideally in three sessions.

So basically this is three, 3 or 4 minute sitting in really cold water or a really cold shower and maybe a little longer, but you don't need a lot longer.

And you need three sauna sessions or hot tub sessions. You can do more. And the recommendations that have been on my side for ten years before this latest research from Susan, Susan Soderberg, I believe Andrew Huberman was talking about it, recently.

It's that it with my recommendations have been 20 minutes, three times a week, which is pretty darn close to 57 minutes a week. And from a cold exposure to, I have done extreme cold exposure, 20 minute deep ice baths, Wim Hof style, and eventually migrated to three minute cryotherapy sessions or just cold showers a few times a week.

Once you're acclimated to cold, that's all it takes people listening. You can do this for free the next time you take a shower at the end of the shower, flip the shower to full cold here yourself in the forehead and in the chest, where the cold receptors are most dense and you'll absolutely not make one minute of that.

You'll hate me. I'll say Dave Asprey is a jerk and you'll jump out and you'll do it again. The next morning. You'll make 20 30s and you'll glare, and the next morning you might make one minute you'll be shivering and you'll just be like, I hate that guy Dave so much.

And the next morning you're going to do it. And magically at the end of one minute, you know what I feel really, I feel better than I did before. This is amazing.

And what's going on there is cold can change levels of cardio lipid, which is a, type of actually, it's mostly fats. It's why it's a lip in that's inside the mitochondrial membrane.

And when you tell your mitochondria, hey, you better be ready to make energy at any time quickly to turn on a lot of heat. The mitochondria go. I guess I'll get rid of the lazy ones, and I'll upgrade the weak ones to make them stronger.

And that's what they show in mice. It's the same in people three days of discomfort for after that, the cold shower just makes you feel like you're gonna have a great day.

Your skin looks better if you're a woman. It actually really is beneficial for the tissues on the chest. It's beneficial for your face. It actually works and it's free.

And you can go and do cryotherapy like you're talking about in the the place there in Toronto, I have a liquid nitrogen cryotherapy thing downstairs. Takes about three minutes and then heat exposure does something similar to what exercise does.

It releases heat shock proteins, which also benefit mitochondria, but they benefit mitochondria in a different way. That also signals some stress. It creates something called half one alpha Hyde hypoxia inducible factor one alpha, which is also why some deep breathing exercises also produce metabolic changes.

And that combination that's now been pretty well quantified of 11 minutes of cold, 57 minutes of heat per week is a very small investment in order to get these benefits.

The studies that come out of better mitochondrial function show that people who do a sauna 3 to 5 times a week, usually in Scandinavia and usually naked for some reason, haven't figured that one out.

They live longer, they die less of all, cause mortality. So either it's the nudity or it's the sauna, and no one's been able to prove which one it is.

But I'm voting on the sauna. That's got to be a little bit of both. And, you know, we've actually looked at, funny thing is that the that region is most likely to have the suboptimal Bdnf brain drive neurotrophic factor.

Right. And that's dark sunlight. Yeah. And and the sauna is what counteracts all the sort of mood and behavior issues you would typically find if you had an entire population that was wired that way.

And it that's literally it is a cultural thing of like, we we do this on it's part of life, right? You don't do lot of what's wrong with you. Right. So I thought it was vodka that did that. It was the song.

Depends on the dose. My wife is Swedish. I I'm allowed to say that. Yeah. And then, you know, when it comes to the cold, I know this is, sort of off topic, but I see a lot of people recommending that for fat loss.

Like, if you're going to take your cold shower, it sort of kicks up metabolism and you end up burning more fat through the day. I don't know if that's true or not, but I've heard people talking about that.

It's true that just that brief cold exposure, if you don't reheat using hot water afterwards, some of the other words you do sauna cold, sauna cold, sauna cold, but you finish cold and then you warm yourself up.

Naturally you will burn hundreds more calories throughout the day. Cold also induces a shift to brown fat from white fat, and there's multiple studies that support this.

Brown fat is studied with mitochondria and is responsible for making body heat. When you're young, you have a lot. As you age, you really only have a little stripe along your upper back.

And it turns out that if you start doing cold therapy, you grow a lot more brown fat instead of white fat. Unless you eat lots of seed oils. These omega six oils that we've saturated our diet with these are harming mitochondria and harming cells.

So we don't talk about, regardless of whether you're doing cold therapy to get more brown fat or you're just doing intermittent fasting, which also helps.

Your cell, your cell membrane, it's not like a piece of plastic. It's a tiny droplet of fat. Actually, it's lots of them all lined up together. So it's a little bubble of fat as a cell membrane.

And inside it there's a bunch of cell stuff. And inside that there's a mitochondria membrane, which is more bubbles of fat. Right. And when I say bubble fat, just the outer layer of the bubble is fat.

The inside is full of machinery, essentially the machinery of life. And the composition of those fats radically changes

what the cell can do. And fat when we eat it is a signaling molecule.

When you eat polyunsaturated fats, all the stuff that's supposed to be healthy. These are what bears and anteaters and squirrels eat in order to go into hibernation.

They eat it to get fat and to stay in slow metabolism rate right when they're asleep. Well, what do they eat? And when they wake up, they eat as much as they can.

Saturated fats during summer. Right. And that's interesting. So what's happening with us is that as we replace the normal fats we eat, which is butter and tallow and animal fats, which are the primary sources of fat in our diets throughout all of human history. And a few nuts, that was it.

And the nuts were usually in winter, which is when you would be slowing down anyway. So we replace that with 24 over seven huge amounts of these artificial corn oils, soybean oil, etc.

Diet, Genetics, and the Future of Personalized Medicine

this goes in. It slows down your metabolism, which is a mitochondrial effect, but it changes the membrane of the cells to be made out of the wrong kinds of fat, which creates more free radicals, creates mitochondrial dysfunction, which is directly linked to diabetes and cancer.

And this is why plant based diets ultimately fail, because they have the wrong kinds of fats. You can be a vegan, just put some butter on it. Like that should be the rule for vegans, right?

It can be grass fed butter. I live in an organic farm. I raise almost all of my own vegetables and I raise all of my own meat. Unless it's a fish from the stream or from the river right down the way.

I mean, I am as local and organic as as you can get. I will tell you straight up, when you switch to a diet like that with more saturated fat, your mitochondria will thank you and you'll make more brown fat if you get exposed to cold.

You and I live in Canada. I haven't worn a jacket yet today because I don't get cold. Yeah, it's because of what I eat. It's. It's the membrane. It's the type of fat. It's really.

I feel the same way. Like shifting that diet again. Reading, learning from you. I just feel entirely different. You know, if I feel like I'm about to get sick, you know, the kids are going to school.

The exposures, they're. They're bringing it home. What used to put me in bed for two weeks is like a tingle in my throat. That's gone in a day. It it's liberating, man.

But here's the thing. You need your genetic data to do this. There's some percentage of the population. The ApoE e4 people, they actually just don't process saturated fats very well.

In fact, they're probably in trouble for a toxin elimination thing as well. So they should be on extra toxin binders. They should support detox pathways.

They probably need more mono and saturated fats, and they may do best on a low fat diet, which most humans don't do well on. But if you have the genes, you have the genes.

And we're getting to the point where we can understand that and hack it better. Yeah, we've learned. So one of the reasons why we've stuck to Toronto as home base is because of the ethnic diversity and what we can learn.

It's so it's you don't have the assimilation here. You have your pockets of people kind of do their thing. Right. And one thing that we didn't know we were going to stumble on is that South Asians, people like myself, Brown, Indian, Pakistani, Afghani, that region, have a insulin response from fat genetically.

So it's kind of like as if they eat a bowl of sugar right then, from fat or from any fatter. From some fat, from saturated fat. Interesting. In response.

That isn't well documented, I know I want to see. It's not even known. It's literally nobody talks about it. So and all of a sudden you wonder why so much more heart disease, diabetes, etc.

I'm told as a brown man that genetically I have heart genetic heart conditions, right? It's coming at the biggest heart center in Canada, as you know, a few minutes drive from my house in Mississauga, which is where all the sort of South Asians live, because of the need.

And meanwhile, there's nothing. Genetically, the hearts are great. You know what happens in the arteries from all the things you talked about that lead to blockages, you know, issues.

Ultimately, like you said, that personalization takes you from here's the one size fits all. What's something so important versus 2 or 3 variables can make a completely different.

Right. And it it's honorable and awesome that you're bringing this up. And I included some of your research cash in my anti-aging book called superhuman.

This is the everything you do to live a long time. And on one hand, it's politically incorrect to say people of this race have this weakness or this strength.

And one of the things that astounded me from my, report from the DNA company was that I have the vitamin D receptors of someone who should probably be living in Polynesia.

Right. And I have the same, the same cardio risk profile as is common in West Africans, which is why cardiovascular disease is so much more prevalent.

Yes, poverty is a major contributor, and poor nutrition, quality and stress and those things, even if you account for all of those things, there's a genetic higher risk of diabetes and specifically cardiovascular disease.

And I share that same genetic stuff, even though I don't appear. If you look at like lineage and ancestry, DNA information, it doesn't look like I have any West African ancestry, but I do have that genetic stuff.

So I share that same risk profile. But saturated fat doesn't do anything bad to me, so it's very complex where we're going to find out for you with this background, with these specific genes.

Even if you're from this background, you might not have them. Right. With this gut bacteria present, living at this altitude, this far from the equator, this is going to be what works best for you.

We are so close. People don't see this happening, but you're one of the people making it happen. We're maybe five years out from actually knowing this.

Most people won't know it, but from being able to know it and being able to say, wow, I do these things that don't make any sense. You know, I eat a crescent at 3:07 p.m., as long as it's made with wheat from somewhere and magically everything works.

And the guy next to you says, that's funny, I have to eat anchovies at 204, and that sounds ridiculous, but I'm telling you, we will get to that point.

Well, it's. Yeah, it's yeah, it's all that the sort of first of all, the knowledge wasn't there. Right. Like you said, what was genetics? It was a needle in a haystack. It was big, big data.

Try and find that magic answer that will lead to a sort of genetic therapeutic for our genetic condition. Everything else. Hey, you're not born with diabetes.

You're not born with cholesterol problems. That's not genetic, right? So then what is it? And why is it that that guy did, like you said, this and that guy did the same thing, but they had two different outcomes combined.

Then, like you said, the gut microbiome combined everything else that. So the knowledge is being developed. Now that's kind of where we're at synchronizing it so that the platforms are integrated.

And all of a sudden it's not I'm doing this test, that test of this platform, of this app and that. But here's my my health care's in my hand, meaning here's me, right.

Call it that. That avatar on my phone that's telling me 10% cardiovascular, 6% liver and what to do about it at a personalized level and what to do apart is not the one size fits all answer to to sort of put a bow on all of this, there is something called the exposome, which is a word a lot of people haven't heard of.

And I think wired brought it up about ten years ago and put it in our vocabulary. And the exposome is different than the genome or even the, the epigenome.

This is the set of everything you've been exposed to in your life. And it is like having a real time, full size map of the United States. A full size map of the US is useless because to roll it out would be as big as just going there, right?

But what we're looking for and what we're learning with big data, with massive amounts of sampling is we're starting to figure out, you know what? You didn't need a map of the United States.

You just needed a map of Toronto, and you needed a map of whatever other cities were most relevant to you. So we zoomed in and we told you how to get where you wanted to go, even if you didn't have a map of the trail 500 miles from where you are, because it didn't matter.

So we're finding the things in our exposome that are actionable and that change the switches that you actually have. And when you combine all those things, you get radically less disease, but more importantly, you just feel a lot better.

And the reason that I'm motivated to do what I do is I know from one from my neuroscience company, from lots of work that I've done, from writing my books and all the research.

When you have enough energy left, at the end of the day, you are wired in your mitochondria, actually, and likely your DNA to be kind. And that's why people will jump in front of a car to save a child that isn't theirs.

That's why we help elderly when we get a chance, because we're wired to do that. And if you're just out of energy and you feel like crap all the time, you're not wired to do that.

So we owe it to ourselves to have enough energy to be kind to other people, to be, to show up the way we want to show up as people. That's why I'm doing Upgrade Labs.

That's why my company mission is to upgrade humanity. We have all the goodness in there, but we don't have enough energy to reach the goodness unless we apply these changes to what we do with our lives, so that we get a lot more energy back.

And knowing your functional genome is absolutely key to doing that, because if you don't know what switches you can flip, you're going to spend a lot of time flipping switches that aren't there, and you might even flip the wrong ones.

So you got to have this data and then know what to do with it. And that's what you guys are doing. And that's why I want to be a part of the summit. Well, that's that's awesome.

And you know, Dave, I mean, you pointed us and say this is what we're doing, but it's pioneers like you that have made it possible because the content is now available.

You know, you've done the work of hacking yourself, you know, making yourself the guinea pig guinea pig to get the content out there. But this is why we're able to talk like this today, because you've figured out what works, right?

Thanks. Cache it. It's about everyone who sees this understanding this stuff is possible. It's not science fiction. It's actually happening. And if you crazy people like me.

Yes, I've spent more than $1 million on all this stuff. On on upgrading my biology. I cannot tell you which $700,000 was a waste of money, but I know it was at least that much.

Okay, just to be straightforward, but I think we've at least shown yes, I can go from being serious, unhealthy, high risk of dying before I was 30, according to lab reports and doctors to where I am now with a low risk of dying and a younger biological age.

So if I can do it, I promise that you can do it more easily than I did and for a lot less money and now cash, because you're going through and saying, well, if someone can maybe kind of think it might be possible, let's go do the math, do the science to make it easy and affordable for people.

That's step number two. So we always have some pioneers. You know, Craig Venter did his $100 million human genome and it took 10 or 20 years. And now it's free or it's, you know, a couple hundred bucks depending on if you want to get the complete read that you guys are doing.

And then you look at all of the other things going to the moon. Yeah, we can do it with, with, robots pretty easily. Now, all of the things like cell phones that used to be miracles are now simple.

What we're doing now is no more of a miracle than someone in Africa being able to pick up their phone for a dollar a month and call someone anywhere. That is a miracle that happened in 30 years.

And this is where we are. We're only about 15 years into what's happening here. So the next five years are going to be insane. And you're doing it. That's awesome man.

I can't wait for these five years. It's going to be fun. So what? Thank you. Did. This was awesome that you were able to join us, able to share all this wealth of knowledge.

I'm sure people are floored right now. They probably need time to recover before listening to anything else because this is so incredible. But thank you again for joining me. This was awesome.

You got a cache. The best way to recover a cup of coffee and sitting in an ice bath. You'll be fine. Awesome. All right. Sounds good. Thank you.